The course offerings and requirements of the University of Notre Dame are continually under examination, and revisions are expected. This Bulletin of Information is not a contract; it merely presents the offerings and requirements in effect at the time of publication and in no way guarantees that the offerings and requirements will remain the same. Every effort is made to provide advance information of any changes.

Nondiscrimination
The University of Notre Dame does not discriminate on the basis of race, color, national or ethnic origin, sex, disability, veteran status or age in the administration of any of its educational programs, admissions policies, scholarship and loan programs, athletic and other school-administered programs or in employment.

The University has designated the Director of its Office of Institutional Equity to handle all inquiries regarding its efforts to comply with and carry out its responsibilities under Title IX and under Section 504 of the Rehabilitation Act of 1973. The Title IX and Section 504 coordinator may be contacted as follows:

Director
Office of Institutional Equity
100 Grace Hall
University of Notre Dame
Notre Dame, IN 46556
(574) 631-0444
# Table of Contents

3 President's Leadership Council  
4 Board of Trustees  
5 Trustees Emeriti  
6 Academic Calendar  
10 Mission Statement of the University of Notre Dame  
10 The University of Notre Dame  
11 Notre Dame's Vision for Undergraduate Education  
11 Student Life  
12 Intercollegiate Athletics  
13 Campus Security and Fire Safety  
13 The Spirit of Inclusion at Notre Dame  
14 Academic Profile  
15 University Requirements  
16 Graduation Rate  
16 Academic Code of Honor  
16 The Undergraduate Academic Code  
16 Using Notre Dame Email  
17 Notre Dame NetID Student Policy  
17 Grading System  
18 Hesburgh Libraries  
19 Academic Resources  
20 Admission  
22 Fees and Expenses  
23 Student Financial Aid  
26 Standards of Progress for Recipients of Financial Aid  
27 Center for Social Concerns  
27 Reserve Officers Training Corps Programs  
29 Study Abroad  
34 Moreau First Year Experience  
34 Information Technologies  
35 The Career Center  
36 Holy Cross Seminary Formation  
36 Saint Mary's College  

## THE FIRST YEAR OF STUDIES  
37 First Year Goals  
37 University Requirements  
37 The First Year Curriculum  
38 Course 1—University Seminar/Writing & Rhetoric  
38 Course 2—Mathematics  
38 Course 3—Science  
39 Course 4—University Requirement or Elective: History, Social Sciences, Philosophy, Theology, Literature, Fine Arts, and Languages  
40 Course 5—Program Requirement or Elective  
41 Moreau First Year Experience  
41 Voluntary Courses  
41 Credit and/or Placement by Examination  
43 College Credit from Other Institutions  
43 Learning Resource Center  
43 Program in Academic Excellence  
43 Peer Advising Program  

## SCHOOL OF ARCHITECTURE  
46 Student Awards and Prizes  
47 Student Organizations  
47 Advisory Council  

## COLLEGE OF ARTS AND LETTERS  
49 Student Awards and Prizes  
52 Service Awards  
52 Special Arts and Letters Requirements  
52 Arts and Letters Programs  
52 Double-Counting  
53 Majors  
53 Minors  
53 Electives  
54 Africana Studies  
55 American Studies  
56 Anthropology  
57 Art, Art History, and Design  
60 Classics  
62 East Asian Languages & Cultures  
64 Economics  
66 English  
67 Film, Television, and Theatre  
69 Gender Studies  
70 German and Russian Languages and Literature  
72 History  
73 Irish Language and Literature  
74 Mathematics  
75 Medieval Studies  
76 Music  
78 Neuroscience and Behavior  
80 Philosophy  
82 Political Science  
83 Program of Liberal Studies  
84 Psychology  
85 Romance Languages and Literatures  
89 Sociology  
91 Theology  
93 Supplementary Majors, Minors, and Special Programs  
97 Interdisciplinary Minors within the College  
105 Area Studies Minors  
107 Officers of the Administration  
108 Advisory Council  

## MENDOZA COLLEGE OF BUSINESS  
109 Programs of Study  
110 Curriculum for the Degree of Bachelor of Business Administration  
111 Study Abroad  
111 Collegiate Sequence in International Business  
111 Student Awards and Prizes  
112 Business Oriented Student Organizations and Activities  
113 Accountancy  
114 Finance  
114 Information Technology, Analytics, and Operations  
115 Management and Organization  
116 Marketing  
117 Non-Departmental Courses  
118 Officers of Administration  
119 Advisory Council  

## COLLEGE OF ENGINEERING  
120 Programs and Degrees  
123 College Awards and Prizes  
123 Departmental Awards  
124 Student Organizations and Activities  
125 Aerospace and Mechanical Engineering  
127 Chemical and Biomedical Engineering  
129 Civil and Environmental Engineering and Earth Sciences  
132 Computer Science and Engineering  
133 Electrical Engineering  
134 Interdepartmental Engineering  
135 Dual Degree Programs  
138 Officers of Administration  
139 Advisory Council  

## COLLEGE OF SCIENCE  
140 Departments of the College of Science  
140 Undergraduate Education  
141 Curricula and Degrees  
142 University and College Requirements  
142 Student Organizations and Activities  
142 Student Awards and Prizes  
143 Special Opportunities  
144 Applied and Computational Mathematics and Statistics  
147 Biological Sciences  
155 Chemistry and Biochemistry  
158 Mathematics  
160 Neuroscience and Behavior  
161 Physics  
165 Preprofessional Studies  
170 Special Programs  
170 Dual Degree Program with the College of Engineering  
170 Dual Degree Program with the Mendoza College of Business  
171 Nondepartmental Courses  
171 Science Degree Credit  
173 Officers of Administration  
173 Advisory Council  

## FACULTY  
174 CAMPUS MAP  
224 INDEX
# President’s Leadership Council

<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>REV. JOHN I. JENKINS, C.S.C.</td>
<td>President</td>
</tr>
<tr>
<td>THOMAS G. BURISH</td>
<td>Provost</td>
</tr>
<tr>
<td>JOHN F. AFFLECK-GRAVES</td>
<td>Executive Vice President</td>
</tr>
<tr>
<td>DAVID C. BAILEY</td>
<td>Associate Vice President for Strategic Planning</td>
</tr>
<tr>
<td>ROBERT J. BERNHARD</td>
<td>Vice President for Research</td>
</tr>
<tr>
<td>PAUL J. BROWNE</td>
<td>Vice President for Public Affairs and Communications</td>
</tr>
<tr>
<td>LAURA CARLSON</td>
<td>Vice President and Associate Provost</td>
</tr>
<tr>
<td>REV. AUSTIN I. COLLINS, C.S.C.</td>
<td>Religious Superior of Holy Cross Priests and Brothers at Notre Dame</td>
</tr>
<tr>
<td>MARIANNE CORR</td>
<td>Vice President and General Counsel</td>
</tr>
<tr>
<td>ANN M. FIRTH</td>
<td>Chief of Staff</td>
</tr>
<tr>
<td>ERIN HOFFMANN HARDING</td>
<td>Vice President for Student Affairs</td>
</tr>
<tr>
<td>RONALD D. KRAEMER</td>
<td>Vice President for Information Technology &amp; Chief Information and Digital Officer</td>
</tr>
<tr>
<td>REV. WILLIAM M. LIES, C.S.C.</td>
<td>Vice President for Mission Engagement and Church Affairs</td>
</tr>
<tr>
<td>SCOTT C. MALPASS</td>
<td>Vice President and Chief Investment Officer</td>
</tr>
<tr>
<td>CHRISTINE M. MAZIAR</td>
<td>Vice President and Senior Associate Provost</td>
</tr>
<tr>
<td>ROBERT K. McQUADE</td>
<td>Vice President for Human Resources</td>
</tr>
<tr>
<td>LOUIS M. NANNI</td>
<td>Vice President for University Relations</td>
</tr>
<tr>
<td>REV. HUGH R. PAGE JR.</td>
<td>Vice President and Associate Provost</td>
</tr>
<tr>
<td>MICHAEL PIPPENGER</td>
<td>Vice President and Associate Provost for Internationalization</td>
</tr>
<tr>
<td>MAURA RYAN</td>
<td>Vice President and Associate Provost</td>
</tr>
<tr>
<td>MIKE SEAMON</td>
<td>Vice President for Campus Safety and Event Management</td>
</tr>
<tr>
<td>JOHN A. SEJDINAJ</td>
<td>Vice President for Finance</td>
</tr>
<tr>
<td>JOHN B. SWARBRICK JR.</td>
<td>Vice President and Director of Athletics</td>
</tr>
</tbody>
</table>

July 1, 2016 – June 30, 2017
Board of Trustees

John F. Affleck-Graves  
Notre Dame, Indiana
Rev. José E. Ahumada F., C.S.C.  
Penalolén, Chile
Carlos Javier Betancourt  
São Paulo, Brazil
John J. Brennan  
Valley Forge, Pennsylvania
John J. Brennan  
Chair

Stephen J. Brogan  
Washington, D.C.
Thomas G. Burish  
Notre Dame, Indiana
Monique Caron  
Washington, D.C.
Katie Washington-Cole  
Baltimore, Maryland
Rev. Austin I. Collins, C.S.C.  
Notre Dame, Indiana
Robert Costa  
Washington D.C.
Scott S. Cowen  
New Orleans, Louisiana
Robert J. Cronin Jr.  
Elmhurst, Illinois
Thomas J. Crotty Jr.  
Boston, Massachusetts
Karen McCartan DeSantis  
Washington D.C.
James J. Dunne III  
New York, New York
James F. Flaherty III  
Los Angeles, California
Celeste Voiz Ford  
Palo Alto, California
Stephanie A. Gallo  
Modesto, California
William M. Goodyear  
Chicago, Illinois
Nancy M. Haegel  
Golden, Colorado
Enrique Hernandez Jr.  
Pasadena, California
Carol Hank Hoffmann  
Minnetonka, Minnesota
Rev. John I. Jenkins, C.S.C.  
Notre Dame, Indiana
Most Rev. Daniel R. Jenky, C.S.C.  
Peoria, Illinois
John W. Jordan II  
Chicago, Illinois
Diana Lewis  
West Palm Beach, Florida
Thomas G. Maheras  
New York, New York

Andrew J. McKenna Jr.  
Chicago, Illinois
Fergal Naughton  
Cooldrane, County Dublin, Ireland
Richard C. Notebaert  
Chair Emeritus
Chicago, Illinois
Richard Nussbaum II  
South Bend, Indiana
Rev. Thomas J. O’Hara, C.S.C.  
Notre Dame, Indiana
Rev. Gerard J. Olinger, C.S.C.  
Portland, Oregon
Cindy K. Parseghian  
Tucson, Arizona
J. Christopher Reyes  
Rosemont, Illinois
Kenneth C. Ricci  
Cleveland, Ohio
Clare Stack Richer  
Boston, Massachusetts
Martin W. Rodgers  
Arlington, Virginia
James E. Rohr  
Pittsburgh, Pennsylvania
Shayla Keough Rumely  
Atlanta, Georgia
Rev. John Ryan, C.S.C.  
Wilkes-Barre, Pennsylvania
Rev. Timothy R. Scully, C.S.C.  
Notre Dame, Indiana
Byron O. Spruell  
Chicago, Illinois
Phyllis W. Stone  
Somersert, New Jersey
Timothy F. Sutherland  
Middleburg, Virginia
Anne E. Thompson  
New York, New York
Sara Martinez Tucker  
Dallas, Texas
Roderick K. West  
New Orleans, Louisiana
The Honorable Ann Claire Williams  
Chicago, Illinois

July 1, 2016 – June 30, 2017
Trustees Emeriti

Kathleen W. Andrews  
Kansas City, Missouri
Rev. Ernest Bartell, C.S.C.  
Notre Dame, Indiana
Rev. E. William Beauchamp, C.S.C.  
Notre Dame, Indiana
Robert F. Biolchini  
Tulsa, Oklahoma
Roger E. Birk  
Tequesta, Florida
Cathleen P. Black  
New York, New York
Rev. Thomas E. Blantz, C.S.C.  
Notre Dame, Indiana
John Brademas  
New York, New York
John H. Burgee  
Santa Barbara, California
John B. Caron  
Greenwich, Connecticut
Robert Conway  
London, United Kingdom
Arthur J. Decio  
Elkhart, Indiana
Alfred C. DeCrane Jr.  
Greenwich, Connecticut
Fritz L. Duda  
Dallas, Texas
Anthony F. Earley  
Port Washington, New York
Rev. Carl E. Ebev, C.S.C.  
Rome, Italy
Philip J. Faccenda  
Notre Dame, Indiana
José Enrique Fernández  
Guaynabo, Puerto Rico
Charles K. Fischer Sr.  
Fr. Worth, Texas
W. Douglas Ford  
Downers Grove, Illinois
F. Michael Geddes  
Phoenix, Arizona
John W. Glynn Jr.  
Menlo Park, California
Philip M. Hawley  
Los Angeles, California
Douglas Tong Hsu  
Taipei, Taiwan
John A. Kanre  
Lynnfield, Massachusetts
Thomas E. Larkin Jr.  
Los Angeles, California
The Honorable George N. Leighton  
Plymouth, Massachusetts
Ignacio E. Lozano Jr.  
Costa Mesa, California
Rev. Edward A. Malloy, C.S.C.  
Notre Dame, Indiana
Donald J. Matthews  
Fair Hills, New Jersey
Patrick F. McCartan  
(Chair Emeritus)
Cleveland, Ohio
Ted H. McCourtney  
Katonah, New York
Terrence J. McGlinn  
Wyomissing, Pennsylvania
Andrew J. McKenna Sr.  
(Chair Emeritus)
Morton Grove, Illinois
Newton N. Minow  
Chicago, Illinois
Marrin Naughton  
Dunlee, County Louth, Ireland
Timothy O'Meara  
South Bend, Indiana
Joseph J. O'Neill III  
Midland, Texas
Anita M. Pampusch  
Lilydale, Minnesota
Jane Cahill Pfeiffer  
Vero Beach, Florida
Percy A. Pierre  
East Lansing, Michigan
Philip J. Purcell III  
Chicago, Illinois
Ernestine M. Raclin  
South Bend, Indiana
Phillip B. Rooney  
Chicago, Illinois
Shirley W. Ryan  
Chicago, Illinois
John F. Sandner  
Chicago, Illinois
John A. Schneider  
Greenwich, Connecticut
William J. Shaw  
Potomac, Maryland
Kenneth E. Stinson  
Omaha, Nebraska
Rev. David T. Tyson, C.S.C.  
Notre Dame, Indiana
Arthur R. Velasquez  
Chicago, Illinois
Rome, Italy
William K. Warren Jr.  
Tulsa, Oklahoma

Robert J. Welsh  
Chesterton, Indiana
Robert K. Wilmouth  
Barrington, Illinois
FALL 2016 SEMESTER

Aug. 15-16  Mon - Tues  Orientation and advising for new graduate students at Notre Dame
Aug. 17-18  Wed - Thur  Orientation for new international students at Notre Dame
Aug. 18    Thursday  Orientation, advising, and registration for new transfer students at Notre Dame
Aug. 18-20  Thur - Sat  Orientation and counseling for new students at Saint Mary’s College
Aug. 19    Friday  Undergraduate halls open for first year student move-in beginning at 9:00 a.m. for Notre Dame
Aug. 20-21  Sat - Sun  Undergraduate halls open for upperclassman move-in beginning at 9:00 a.m. for Notre Dame
Aug. 21    Sunday  Classes begin for Law and Graduate Business
Aug. 22    Monday  Advising and registration for readmitted students at Notre Dame
Aug. 23    Tuesday  Classes begin for Notre Dame
Aug. 30    Tuesday  Last date for all class changes
Sept. 5    Monday  Labor Day - classes are in session
Sept. 23   Friday  Last date to drop a class at Saint Mary’s College
Oct. 15-23  Sat - Sun  Mid-Term break
Oct. 17    Monday  Mid-Term deficiency reports submitted through insideND by 3:45 p.m. at Notre Dame
Oct. 18    Tuesday  Mid-Term deficiency reports due in PRISM by 8:00 a.m. at Saint Mary’s College
Oct. 28    Friday  Last day for course discontinuance at Notre Dame
Nov. 14-30  Mon - Wed  Registration appointments for the Spring 2017 semester at Notre Dame and Saint Mary’s College
Nov. 23-27  Wed - Sun  Thanksgiving Holiday
Nov. 29-Dec.11  Tues - Sun  Course Instructor Feedback administered at Notre Dame
Dec. 8    Thursday  Last class day
Dec. 9-11  Fri - Sun  Reading days (no examinations)
Dec. 12-16  Mon - Fri  Final examinations
Dec. 17    Saturday  Undergraduate halls close at 2:00 p.m.
Dec. 19    Monday  All grades submitted through insideND by 3:45 p.m. at Notre Dame
Dec. 20    Tuesday  All grades due in PRISM by Noon at Saint Mary’s College
Jan. 8    Sunday  January graduation date (no ceremony)

CLASS MEETINGS*

<table>
<thead>
<tr>
<th></th>
<th>Mon</th>
<th>Tues</th>
<th>Wed</th>
<th>Thr</th>
<th>Fri</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>MWF</td>
<td>41</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MW</td>
<td>28</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TuTh</td>
<td>29</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*The number of class meetings and class days differ for Saint Mary’s College

NUMBER OF CLASS DAYS*

<table>
<thead>
<tr>
<th></th>
<th>Mon</th>
<th>Tues</th>
<th>Wed</th>
<th>Thr</th>
<th>Fri</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>August</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>7</td>
</tr>
<tr>
<td>September</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>5</td>
<td>5</td>
<td>22</td>
</tr>
<tr>
<td>October</td>
<td>4</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>16</td>
</tr>
<tr>
<td>November</td>
<td>4</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>3</td>
<td>19</td>
</tr>
<tr>
<td>December</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>Total</td>
<td>14</td>
<td>15</td>
<td>14</td>
<td>14</td>
<td>13</td>
<td>70</td>
</tr>
</tbody>
</table>

To Table of Contents
### Academic Calendar

#### SPRING 2017 SEMESTER

<table>
<thead>
<tr>
<th>Date</th>
<th>Day</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan. 15</td>
<td>Sunday</td>
<td>Undergraduate halls open for move-in beginning at 9:00 a.m. for Notre Dame</td>
</tr>
<tr>
<td>Jan. 16</td>
<td>Monday</td>
<td>Orientation, advising, and registration for new students</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Classes begin for Law and Graduate Business</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Classes begin for Saint Mary’s College</td>
</tr>
<tr>
<td>Jan. 17</td>
<td>Tuesday</td>
<td>Classes begin for Notre Dame</td>
</tr>
<tr>
<td>Jan. 24</td>
<td>Tuesday</td>
<td>Last date for all class changes</td>
</tr>
<tr>
<td>Feb. 17</td>
<td>Friday</td>
<td>Last date to drop a class at Saint Mary’s College</td>
</tr>
<tr>
<td>Feb. 17-19</td>
<td>Fri - Sun</td>
<td>Junior Parents Weekend at Notre Dame</td>
</tr>
<tr>
<td>Mar. 11-19</td>
<td>Sat - Sun</td>
<td>Mid-Term break</td>
</tr>
<tr>
<td>Mar. 13</td>
<td>Monday</td>
<td>Mid-Term deficiency reports submitted through insideND by 3:45 p.m. at Notre Dame</td>
</tr>
<tr>
<td>Mar. 14</td>
<td>Tuesday</td>
<td>Mid-Term deficiency reports due in PRISM by 8:00 a.m. at Saint Mary’s College</td>
</tr>
<tr>
<td>Mar. 22</td>
<td>Wednesday</td>
<td>Registration begins for the 2017 Summer Session at Notre Dame</td>
</tr>
<tr>
<td>Mar. 24</td>
<td>Friday</td>
<td>Last day for course discontinuance at Notre Dame</td>
</tr>
<tr>
<td>Apr. 14-17</td>
<td>Fri - Mon</td>
<td>Easter Holiday</td>
</tr>
<tr>
<td>Apr. 19-28</td>
<td>Wed - Fri</td>
<td>Registration appointments for the Fall 2017 semester</td>
</tr>
<tr>
<td>Apr. 25-May 7</td>
<td>Tues - Sun</td>
<td>Course Instructor Feedback administered at Notre Dame</td>
</tr>
<tr>
<td>April 25</td>
<td>Tuesday</td>
<td>Deadline for 2017/2018 financial aid applications at ND (for returning students)</td>
</tr>
<tr>
<td>May 3</td>
<td>Wednesday</td>
<td>Last class day for Notre Dame</td>
</tr>
<tr>
<td>May 4</td>
<td>Thursday</td>
<td>Last class day for Saint Mary's College</td>
</tr>
<tr>
<td>May 4-7</td>
<td>Thur - Sun</td>
<td>Reading days for Notre Dame (no examinations)</td>
</tr>
<tr>
<td>May 5-7</td>
<td>Fri - Sun</td>
<td>Reading days for Saint Mary's College (no examinations)</td>
</tr>
<tr>
<td>May 8-12</td>
<td>Mon - Fri</td>
<td>Final examinations</td>
</tr>
<tr>
<td>May 13</td>
<td>Saturday</td>
<td>Undergraduate halls close at 2:00 p.m.</td>
</tr>
<tr>
<td>May 15</td>
<td>Monday</td>
<td>All grades submitted through insideND by 3:45 p.m. at Notre Dame</td>
</tr>
<tr>
<td>May 16</td>
<td>Tuesday</td>
<td>All grades are due in PRISM by Noon at Saint Mary’s College</td>
</tr>
<tr>
<td>May 19-21</td>
<td>Fri - Sun</td>
<td>Commencement Weekend</td>
</tr>
</tbody>
</table>

#### CLASS MEETINGS*

<table>
<thead>
<tr>
<th>Class Type</th>
<th>Class Days</th>
</tr>
</thead>
<tbody>
<tr>
<td>MWF</td>
<td>41</td>
</tr>
<tr>
<td>MW</td>
<td>28</td>
</tr>
<tr>
<td>TuTh</td>
<td>29</td>
</tr>
</tbody>
</table>

*The number of class meetings and class days differ for Saint Mary's College.

#### NUMBER OF CLASS DAYS*

<table>
<thead>
<tr>
<th>Month</th>
<th>Mon</th>
<th>Tues</th>
<th>Wed</th>
<th>Thur</th>
<th>Fri</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>January</td>
<td>2</td>
<td>3</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>11</td>
</tr>
<tr>
<td>February</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>20</td>
</tr>
<tr>
<td>March</td>
<td>3</td>
<td>3</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>18</td>
</tr>
<tr>
<td>April</td>
<td>3</td>
<td>4</td>
<td>4</td>
<td>3</td>
<td>18</td>
<td></td>
</tr>
<tr>
<td>May</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>13</td>
<td>15</td>
<td>15</td>
<td>14</td>
<td>13</td>
<td>70</td>
</tr>
</tbody>
</table>

#### 2017 SUMMER SESSION

First Class Day - June 19; Last Class Day – July 28; Graduation Date (No Ceremony) – August 6

**NOTE:** Summer Session classes will not be held on July 4 for most programs.

To Table of Contents
**UNIVERSITY OF NOTRE DAME AND SAINT MARY'S COLLEGE**

**JOINT ACADEMIC YEAR CALENDAR FOR 2017-2018**

**FALL 2017 SEMESTER**

<table>
<thead>
<tr>
<th>Date</th>
<th>Event Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aug. 14-15</td>
<td>Orientation and advising for new graduate students at Notre Dame</td>
</tr>
<tr>
<td>Aug. 16-17</td>
<td>Orientation for new international students at Notre Dame</td>
</tr>
<tr>
<td>Aug. 17</td>
<td>Orientation, advising, and registration for new transfer students at Notre Dame</td>
</tr>
<tr>
<td>Aug. 17-19</td>
<td>Orientation and counseling for new students at Saint Mary’s College</td>
</tr>
<tr>
<td>Aug. 18</td>
<td>Undergraduate halls open for first year student move-in beginning at 9:00 a.m. for Notre Dame</td>
</tr>
<tr>
<td>Aug. 19-20</td>
<td>Orientation and advising for freshmen at Notre Dame</td>
</tr>
<tr>
<td>Aug. 20</td>
<td>Undergraduate halls open for upperclassman move-in beginning at 9:00 a.m. for Notre Dame</td>
</tr>
<tr>
<td>Aug. 21</td>
<td>Classes begin for Law and Graduate Business</td>
</tr>
<tr>
<td>Aug. 22</td>
<td>Classes begin for Notre Dame</td>
</tr>
<tr>
<td>Aug. 29</td>
<td>Last date for all class changes</td>
</tr>
<tr>
<td>Sept. 4</td>
<td>Labor Day - classes are in session</td>
</tr>
<tr>
<td>Sept. 22</td>
<td>Last date to drop a class at Saint Mary’s College</td>
</tr>
<tr>
<td>Oct. 14-22</td>
<td>Mid-Term break</td>
</tr>
<tr>
<td>Oct. 16</td>
<td>Mid-Term deficiency reports submitted through insideND by 3:45 p.m. at Notre Dame</td>
</tr>
<tr>
<td>Oct. 17</td>
<td>Mid-Term deficiency reports due in PRISM by 8:00 a.m. at Saint Mary’s College</td>
</tr>
<tr>
<td>Oct. 27</td>
<td>Last day for course discontinuance at Notre Dame</td>
</tr>
<tr>
<td>Nov. 13-29</td>
<td>Registration appointments for the Spring 2018 semester at Notre Dame and Saint Mary’s College</td>
</tr>
<tr>
<td>Nov. 22-26</td>
<td>Thanksgiving Holiday</td>
</tr>
<tr>
<td>Nov. 28-Dec. 10</td>
<td>Course Instructor Feedback administered at Notre Dame</td>
</tr>
<tr>
<td>Dec. 7</td>
<td>Last class day</td>
</tr>
<tr>
<td>Dec. 8-10</td>
<td>Reading days (no examinations)</td>
</tr>
<tr>
<td>Dec. 11-15</td>
<td>Final examinations</td>
</tr>
<tr>
<td>Dec. 16</td>
<td>Undergraduate halls close at 2:00 p.m.</td>
</tr>
<tr>
<td>Dec. 18</td>
<td>All grades submitted through insideND by 3:45 p.m. at Notre Dame</td>
</tr>
<tr>
<td>Dec. 19</td>
<td>All grades due in PRISM by Noon at Saint Mary’s College</td>
</tr>
<tr>
<td>Jan. 7</td>
<td>January graduation date (no ceremony)</td>
</tr>
</tbody>
</table>

**CLASS MEETINGS***

<table>
<thead>
<tr>
<th>Day</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>MWF</td>
<td>41</td>
</tr>
<tr>
<td>MW</td>
<td>28</td>
</tr>
<tr>
<td>TuTh</td>
<td>29</td>
</tr>
</tbody>
</table>

**NUMBER OF CLASS DAYS***

<table>
<thead>
<tr>
<th>Month</th>
<th>Mon</th>
<th>Tues</th>
<th>Wed</th>
<th>Thur</th>
<th>Fri</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>August</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>8</td>
</tr>
<tr>
<td>September</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>5</td>
<td>21</td>
</tr>
<tr>
<td>October</td>
<td>4</td>
<td>4</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>17</td>
</tr>
<tr>
<td>November</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>3</td>
<td>19</td>
</tr>
<tr>
<td>December</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>Total</td>
<td>14</td>
<td>15</td>
<td>14</td>
<td>14</td>
<td>13</td>
<td>70</td>
</tr>
</tbody>
</table>

*The number of class meetings and class days differ for Saint Mary's College

To Table of Contents
Academic Calendar

SPRING 2018 SEMESTER

Jan. 14  Sunday  Undergraduate halls open for move-in beginning at 9:00 a.m. for Notre Dame
Jan. 15  Monday  Orientation, advising, and registration for new students
Classes begin for Law and Graduate Business
Classes begin for Saint Mary’s College
Jan. 16  Tuesday  Classes begin for Notre Dame
Jan. 23  Tuesday  Last date for all class changes
Feb. 16  Friday  Last date to drop a class at Saint Mary’s College
Feb. 16-18  Fri - Sun  Junior Parents Weekend at Notre Dame
Mar. 10-18  Sat - Sun  Mid-Term break
Mar. 12  Monday  Mid-Term deficiency reports submitted through insideND by 3:45 p.m. at Notre Dame
Mar. 13  Tuesday  Mid-Term deficiency reports due in PRISM by 8:00 a.m. at Saint Mary’s College
Mar. 21  Wednesday  Registration begins for the 2018 Summer Session at Notre Dame
Mar. 23  Friday  Last day for course discontinuance at Notre Dame
Mar.30-Apr.2  Fri - Mon  Easter Holiday
Apr. 16-25  Mon - Wed  Registration appointments for the Fall 2018 semester
Apr. 24-May 6  Tues - Sun  Course Instructor Feedback administered at Notre Dame
April 25  Wednesday  Deadline for 2018/2019 financial aid applications at ND (for returning students)
May 2  Wednesday  Last class day for Notre Dame
May 3  Thursday  Last class day for Saint Mary's College
May 3-6  Thur - Sun  Reading days for Notre Dame (no examinations)
May 4-6  Fri - Sun  Reading days for Saint Mary's College (no examinations)
May 7-11  Mon - Fri  Final examinations
May 12  Saturday  Undergraduate halls close at 2:00 p.m.
May 14  Monday  All grades submitted through insideND by 3:45 p.m. at Notre Dame
May 15  Tuesday  All grades are due in PRISM by Noon at Saint Mary’s College
May 18-20  Fri - Sun  Commencement Weekend

CLASS MEETINGS*

<table>
<thead>
<tr>
<th></th>
<th>MWF</th>
<th>MW</th>
<th>TuTh</th>
</tr>
</thead>
<tbody>
<tr>
<td>41</td>
<td>28</td>
<td>29</td>
<td></td>
</tr>
</tbody>
</table>

*The number of class meetings and class days differ for Saint Mary's College

NUMBER OF CLASS DAYS*

<table>
<thead>
<tr>
<th></th>
<th>Mon</th>
<th>Tues</th>
<th>Wed</th>
<th>Thur</th>
<th>Fri</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>January</td>
<td>2</td>
<td>3</td>
<td>3</td>
<td>2</td>
<td>2</td>
<td>12</td>
</tr>
<tr>
<td>February</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>20</td>
</tr>
<tr>
<td>March</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>4</td>
<td>3</td>
<td>16</td>
</tr>
<tr>
<td>April</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>20</td>
</tr>
<tr>
<td>May</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Total</td>
<td>13</td>
<td>15</td>
<td>15</td>
<td>14</td>
<td>13</td>
<td>70</td>
</tr>
</tbody>
</table>

2018 SUMMER SESSION

First Class Day - June 18;  Last Class Day – July 27;  Graduation Date (No Ceremony) – August 5

NOTE: Summer Session classes will not be held on July 4 for most programs
Therefore, the University insists upon academic objectives of Notre Dame and a willingness to enter particular creedal affiliation but a respect for the identity of the University depends upon, and is nurtured by, the continuing presence of a predominant number of diverse scholars and students. The Catholic university requires, and is enriched by, the presence and voices of all the forms of knowledge found in the arts, sciences, professions, and every other area of human culture.

The University encourages a way of living consonant with a Christian community and manifest in prayer, liturgy, and service. Residential life endeavors to develop that sense of community and of responsibility that prepares students for subsequent leadership in building a society that is at once more human and more divine.

Notre Dame's character as a Catholic academic community presupposes that no genuine search for the truth in the human or the cosmic order is alien to the life of faith. The University welcomes all areas of scholarly activity as consonant with its mission, subject to appropriate critical refinement. There is, however, a special obligation and opportunity, specifically as a Catholic university, to pursue the religious dimensions of all human learning. Only thus can Catholic intellectual life in all disciplines be animated and fostered. Notre Dame pursues its objectives through the formation of an authentic human community graced by the Spirit of Christ.

The University of Notre Dame

Notre Dame is at once a Catholic university, a national symbol, and an international community of religious faith, intellectual inquiry, and devotion to the powerless. Among its conspicuous features are its academic reputation, an elaborately designed and golden-domed administration building, a famous collegiate football team, a popular shrine to the Mother of God, two fascinating lakes, a pleasantly landscaped campus, and a spirited student body surrounded by an intensely loyal community of alumni and friends who unabashedly refer to themselves as the Notre Dame "family."

The institution was founded on the site of an old Catholic missionary outpost in 1842. The founders were a small and impoverished band of French and Irish religious brothers whose leader was Rev. Edward F. Sorin, C.S.C., an impetuous, strong-willed, and apparently tireless priest. In a memoir titled My Notre Dame, Thomas Stritch, professor emeritus of American Studies and Notre Dame historian, wrote that Father Sorin "carved Notre Dame out of the Northern Indiana wilderness and by sheer strength of character made it go. He built and rebuilt, recruited students where he could, and gradually began the unique image Notre Dame still enjoys. In a college or university, reputation is everything. Somehow Sorin developed a favorable one for Notre Dame, one that reverberated throughout the American Catholic world, the Eastern Seaboard as well as the Midwest. Long before football was invented, Notre Dame caught the imagination of American Catholics."

Father Sorin was a member of the Congregation of Holy Cross, a then recently formed Catholic religious community that would own and administer the University from its foundation until 1967, when the University's governance was legally transferred to a two-tiered, mixed board of lay and religious trustees and fellows. The University's bylaws ensure that the Congregation will continue to exert a prominent influence on its administration. They stipulate, for example, that Notre Dame's presidents must always be chosen from among the priests of the Congregation. The Congregation also ministers to the University it founded through the many Holy Cross priests serving on the University's faculty, the counselors and chaplains who live with the undergraduate students in the residence halls, and the staff of the campus ministry office.

In 1972, five years after the change in governance, a new chapter of University history began to be written as the first undergraduate women were admitted to Notre Dame. A quarter of a century later, the majority of living Notre Dame alumni have been graduated from a fully coeducational institution.

Obviously, many other aspects of the University have been changed by more than a century and a half of turbulent and unpredictable happenings in the Catholic Church and in American life and culture. Fires, outbreaks of infectious diseases, the Civil War, waves of European immigrants and refugees, Church controversies, the Great Depression, two world wars and several smaller bloodlettings, the civil rights movement, and other social convulsions in America, all have involved members of the Notre Dame family and have left deep and indelible imprints on the character and rich tradition of the institution. Rev. William Corby, C.S.C., a successor to Father Sorin, played a memorable national role as a Union chaplain at the Battle of Gettysburg; Rev. Julius Nieuwland, C.S.C., a scientist and faculty member, invented synthetic rubber; Notre Dame students were participants in a nationally publicized scuffle with a resurgent Ku Klux Klan; the University’s colorful football team and something of its campus atmosphere were enshrined in American history and
Undergraduate Education

whole person. We cultivate each student's capacity
to think creatively and critically while valuing the rich inheritance that comes from our shared past. We expect our graduates to be conversant with and equipped to contribute to the best thinking across the disciplines. Notre Dame helps students acquire the virtues necessary for living a good human life and prepares them to become leaders in their professions, for their communities, the Church, and the world.

As a community committed to service, we challenge students to grow in their understanding of complex human realities, and we call them to respond to the needs of the world with compassion and committed action. By educating students to be engaged by both their intellectual labors and their faith, we aspire to offer an education that is Catholic in the broadest sense of the word, both in welcoming all persons of good will to our university community and turning outward to embrace the larger world.

Formed by a rich liberal education and possessed of mature faith in service to others, our graduates leave Notre Dame prepared to take their places at the forefront of discovery, innovation, and human achievement.

Student Life

Notre Dame offers its students a quality education, made possible by an excellent faculty, advanced research facilities, experienced administration, and a well-developed educational philosophy. Education here also extends far beyond coursework and research, to the development and formation facilitated by residential life, extracurricular activities, and a culture grounded in the University's Catholic, Holy Cross mission, which seeks to educate both the mind and the heart.

The Division of Student Affairs fosters a rich community life, encourages student development through programming and its support of student groups, and nurtures the physical and emotional well-being of our students through a variety of student resources and services, including:

Residential Life. The University's unique and cherished residential tradition is as old as the University itself. Our founder, Father Edward Sorin, established at Notre Dame the sort of residential ambience he had known at French universities. Nineteenth-century students slept, ate, studied, and attended classes en masse in wings of the Main Building. The regimen was strict: a prefect roused students at 6 a.m., supervised their prayer, meals, study, and recreation and returned them to bed 16 hours later.

Each of Notre Dame's 30 undergraduate residence halls has an atmosphere and character of its own. Unique traditions in each hall generate a feeling of loyalty and camaraderie among its residents. Well-trained rectors, assistant rectors, and senior resident assistants provide multiple layers of pastoral care for the students who call a Notre Dame residence hall “home.” The residence halls form the base of many spiritual, athletic, social, and volunteer service activities.

First-year students are required to live on campus, and the majority of upper-class students elect to stay in their residence hall all four years. Approximately 80 percent of undergraduates live on campus. At the same time, a variety of off-campus housing is available in the South Bend area.

Spiritual Life. Notre Dame is a profoundly Catholic place, which means—at its core—that all are welcome. Beliefs are strengthened by commitment to God, to one another, and to the human family in love and service, while at Notre Dame and throughout life.

The Office of Campus Ministry is rooted in Catholic tradition and inspired by the charism and spirituality of the Congregation of Holy Cross, and works to bring education, the Catholic faith and the hope of the Cross to students and the broader Notre Dame community. The office is dedicated to inspiring students to engage others about their faith and discovering their gifts for exercising leadership while at Notre Dame and within the wider Church. The office ministers faithfully and fervently to all students, regardless of denomination, faith tradition or level of education at the University.

Through undergraduate, graduate, liturgical and music ministries, Campus Ministry fosters spiritual growth, encourages participation in sacramental and liturgical life, supports personal prayer, provides opportunities for retreats, pilgrimages and service, aids in discernment, and guides students to become leaders in the practice of their faith.

Clubs and Organizations. Notre Dame has over 400 clubs and organizations for interested students, which encompass academic, athletic, cultural, performing arts, social service and special interest pursuits. For a complete listing, visit sao.nd.edu.

Recreational Sports. The Office of Recreational Sports (RecSports) is among the most comprehensive campus recreation programs in the country. Nearly 400 programs including aquatics, fitness, intramurals, special events and club sports are offered, providing a broad range of activities to meet the diverse interests of a sports-minded, active student body. RecSports also manages several recreation facilities including the Rolfs Sports Recreation Center (RSRC), Rolfs Aquatic Center (RAC), Rockne Memorial (the Rock) and St. Joe Beach on campus.

Career and Professional Development. Notre Dame is committed to helping students thoughtfully consider their choice of major and weigh their professional aspirations with their personal values through the discernment process. Resources include our world class Career Center, first-year courses and other opportunities offered throughout the Notre Dame undergraduate experience in collaboration with many on-campus partners.
Health and Wellness. The University Counseling Center, the McDonald Center for Student Well-Being, the Office of Disability Services and University Health Services aim to promote students' overall health and well-being through a broad range of services, treatment, prevention and education.

Student Government. The unique blend of elements that gives the Notre Dame community its identity has, over a period of years, shaped the character of the student government.

The greatest influence on the student government is the system of residence halls, which not only provides students with a place to live but also serves as the principal center for social interaction on campus. Each hall has its own government, consisting of a hall president, vice president, Cabinet, and judicial board, which works in cooperation with the hall staff to develop the best possible environment for its residents. As the basic unit of student government, the halls, and their needs significantly shape the campus-wide student government.

The relatively simple structure of the student government has evolved gradually in response to changing attitudes and needs of the student body. At the head of the student government is its chief executive officer, the student body president. Although the duties of the job have tended to vary with the priorities of each officeholder, in general the president represents the interests of the student body in all areas of life at Notre Dame.

The most representative student government groups are the Hall Presidents' Council and the Student Senate, both of which meet weekly to discuss the various aspects of residence and University life, and to coordinate activities among the halls and across campus.

The Campus Life Council was created by the University's Board of Trustees to allow for discussion among students, faculty, and administrators concerning life on campus. The council is empowered to pass resolutions recommending student life policy changes to the administration.

The programming arm of the Student Senate at Notre Dame is the Student Union Board. This board coordinates such events as lectures, plays, concerts, movies, and more. In addition, it coordinates The Show, a major back-to-school campus concert, and the Notre Dame Literary Festival (which were previously mentioned under "Annual Events"), as well as the Collegiate Jazz Fest, Acoustic Cafe, student bands, and other student performances, professional entertainment, and special events. The Student Union Board also coordinates services such as plant and furniture sales, as well as refrigerator rentals.

Student Conduct. A Catholic university is a society composed of faculty and students whose primary purpose is the pursuit of Christian wisdom. The society can exist only in an atmosphere of responsibility and good order. The University seeks, therefore, to provide those conditions and opportunities best suited for educating the student.

Students registering at the University of Notre Dame agree to abide by the regulations concerning student conduct set forth in du Lac, A Guide to Student Life. du Lac is available online at dulac.nd.edu.

The University reserves the right to deny the privilege of enrollment to any student whose conduct or attitude is believed to be detrimental to the welfare of the institution.

Intercollegiate Athletics

The University is committed to a well-rounded program for both men and women. The Fighting Irish athletic tradition, renowned throughout the United States, encompasses much more than football and basketball. Notre Dame boasts national contenders in many Olympic sports, including women's soccer, men's lacrosse, men's and women's fencing, and hockey, all of which ranked number one in the country at some point during the past six seasons. Since 2001, Notre Dame has won national championships in women's basketball ('01), women's soccer ('04 and '10) and fencing ('05 and '11).

The women's intercollegiate athletic program, which has grown tremendously over the last 20 years, now includes 13 varsity sports (there are also 13 men's sports). Notre Dame women student-athletes compete in basketball, tennis, fencing, lacrosse, swimming and diving, volleyball, softball, golf, indoor and outdoor track and field, cross country, soccer and rowing.

The Notre Dame student body plays an important role in the success of teams that represent the University. Anyone who has attended a football pep rally or seen a top-ranked basketball team upset in the Purcell Pavilion knows why. The pride and loyalty displayed by "the greatest student body in the world" are a moving force that embodies the spirit of the Notre Dame community. Athletic contests at Notre Dame are an integral part of the social life as well as an opportunity for the athletically gifted to test their skills with the nation's best.

Family Programming is an integral part of the RecSports programming package. With roots tied deeply to Notre Dame's mission, Family Programming seeks to meet the recreational needs of Notre Dame's families in order to help families grow stronger physically, mentally, and spiritually. Even Fridays is one of our main family programs. Even Fridays occurs on the second and fourth Friday of every month. These are traditional family recreation opportunities such as bowling, swimming, game nights, and bike rides. All Even Friday events are from 5:30–7:30PM and are designed to reach a wide range of family ages and abilities. Family FIRST (Fitness Instruction, Recreation, & Sports Training) is our other main family program. Family FIRST classes focus more specifically on the fitness needs of families. Typical classes are yoga, martial arts, cardio, fixed cycling, and rock climbing.

FACILITIES

Notre Dame is home to some of the finest athletic facilities at any university. The 78,000-square-foot Rolfs Sports Recreation Center has a large state-of-the-art fitness room with more than 30 cardiovascular machines and a full complement of strength machines and free weights. The Rolfs also has a three-lane, 1/8 mile track; three courts for basketball, volleyball, and badminton; a rink-style court for soccer and inline hockey; and two activity rooms for dance, aerobics, and martial arts. In 2007–08, Rolfs Sports Recreation Center celebrated its 10th anniversary by adding new audio-visual technology in meeting rooms and installing a new "cardio theatre" in the fitness room to enhance participant experience.

The Rockne Memorial is legendary for its highly competitive pickup basketball games but also has 10 handball/racquetball courts, one combination squash/handball court, a swimming pool with a spectator gallery, a smaller pool for family use, a climbing wall, a weight room, a fitness room, and two rooms for dance and group exercise. In 2007–08, the Rockne Memorial added new audio-visual technology in the First Aid/CPR classroom, completed updating of all water fountains including cooling and filtration, created a "spinning studio" in the former racquetball court and upgraded to larger 50-pound washer and dryer equipment.

In addition to the nine-hole Notre Dame Golf Course, the 18-hole William K. and Natalie O. Warren Golf Course opened in the spring of 2000 on the northeast edge of campus. Other outside facilities include basketball courts in several locations, 14 outdoor tennis courts, and several multipurpose playing fields.

Built in 1968, Notre Dame's Joyce Center has been called one of the most complete sports complexes in the country. Not only is there a 9,149-seat basketball/volleyball arena (Purcell Pavilion) but also a field house containing a two-lane track, boxing and weight rooms, and five volleyball courts. Elsewhere in the building are an auxiliary gym, two intramural gyms and a gym for fencing, six handball/racquetball courts, and two squash courts. The Rolfs Aquatic Center, with its Olympic-sized swimming pool, completes this complex.

Purcell Pavilion at the Joyce Center opened for the 2009-10 season. The arena was redone including the installation of chair-back seating throughout the arena. The construction encompasses a new three-story structure at the south end that includes a three-story lobby, the Notre Dame ticket operations, additional area for restrooms and concessions, a variety shop to sell apparel and souvenirs, in addition to a club seating and hospitality area.

Melissa Cook Softball Stadium opened for competition on April 13, 2008. This state-of-the-art venue honors the memory of former Irish softball player Melissa Cook. It features a brick/stucco exterior,
Bluegrass sod outfield, a Daktronics scoreboard with full color message center, Musco lighting, heated dugouts, home and visitor locker rooms, training room, spacious press box, six batting cages, chair back and bleacher seating, interior restrooms, and concession stand.

The Guglielmino Athletic Complex, affectionately referred to as “The Gug” (pronounced Goog) opened in the fall of 2005. The 95,840-square-foot facility houses locker rooms for both the football student-athletes and coaches, coaches' offices, team meeting rooms, a 148-seat auditorium, athletic training, and the new 25,000-square foot Haggar Fitness Center, used by all of Notre Dame’s 26 varsity athletic teams, with the latest in state-of-the-art strength training equipment, a 50-yard track for speed workouts, and a 45-by-18-yard Prestige Turf field for team stretching exercises and workouts.

The Loftus Sports Center houses Meyo Field. The center, which measures 614 by 210 feet, also contains practice areas for football, lacrosse, soccer, baseball and softball. A six-lane indoor track circles Meyo Field, a 120-yard synthetic-turf practice field (new in 2003).

The University's Eck Pavilion, a 35,000-square-foot structure opened in 1987, is the place on campus for indoor tennis. Inside are six courts, coaches' offices, showers and lockers, a repair shop, a vending lounge, and an observation deck. The pavilion is used by the varsity men's and women's tennis teams.

Other facilities used by Irish athletic teams include:

**Notre Dame Stadium**, with its 80,795 seats, home to Irish football since 1930. Installation of an artificial Field Turf surface began in May 2014 with an anticipated completion date in mid-August for the 2014 football season.

**Frank Eck Stadium**, with its 2,500 seats, home to Irish baseball since 1994 and upgraded in 2011 via a remodeled clubhouse.

**Lahr Practice Complex**, with its two artificial turf (used primarily for the football squad) practice fields and one natural grass field, also used by Rec Sports. The fields are lighted and secured by an eight-foot-fence.

Recently completed new facilities include:

**Alumni Soccer Stadium**—Notre Dame opened the Alumni Soccer Stadium (men's and women's soccer) in 2009. The approximately 3,000-seat facility, which sits side by side with the new Irish lacrosse stadium, features a natural grass field, fully-equipped locker rooms, restrooms and concession areas, an expanded press box and a state-of-the-art light and sound system.

**Outdoor Track and Field Complex**—The new nine-lane track is located southeast of the Joyce Center and is the competition and practice site for the men's and women's track and field teams. Throwing and jumping events are provided in two directions, and a warm-up area is located at one end of the track.

**Arlotta Lacrosse Stadium**—Arlotta Stadium is the new home for men's and women's lacrosse programs. Located east of the Joyce Center, Arlotta Stadium features over 2,000 permanent seats with additional seating available on a grass berm opposite of the stands, lights, an artificial-turf field, locker rooms, player lounges, a press box with over 20 seats for media and support staff along with three broadcast booths, restrooms and concession areas. The first event in the new stadium was held Oct. 16, 2009, as the men's lacrosse team played the Iroquois National team in an exhibition contest. Women's lacrosse held its first event in the new stadium on March 7, 2010 vs Dartmouth.

**Compton Family Ice Arena**—Construction of this new, two-sheet ice facility began in March 2010. It is located just north of Angela Boulevard and just west of Leavy Drive. The ice surface (200’ x 90’) in the main arena (capacity - 5,000) is named the Charles W. “Lefty” Smith Jr. Rink, while the auxiliary rink is Olympic dimensions (200’ x 100’). The facility includes offices, locker rooms, strength, cardio and other training areas for the Notre Dame hockey program as well as locker rooms, service and support staff and areas necessary to operate campus and community hockey, skating and other recreational ice sport usage. For Irish games and other hospitality functions, O'Brien's, a club area with adjacent premium seating is available on the mezzanine level. The facility opened on Oct. 18, 2011, and Notre Dame played its first hockey game in the new building Oct. 21 vs. RPI.

**Campus Security and Fire Safety**

The security of all members of the campus community is of paramount concern to the University of Notre Dame. The University publishes an annual report outlining security and fire safety information and crime statistics for campus. This document provides suggestions regarding crime prevention strategies and important policy information about emergency procedures, reporting of crimes, law enforcement services on campus, fire safety, and information about support services for victims of sexual assault. The brochure also contains information about the University's policy on alcohol and other drugs, the SafeWalk program and campus shuttle service. You may view the document on the web at: [http://ndsp.nd.edu/crime-prevention-and-safety/yearly-security-fire-safety-reports/](http://ndsp.nd.edu/crime-prevention-and-safety/yearly-security-fire-safety-reports/). A printed copy of this brochure is available by sending an email request to [ndsp@nd.edu](mailto:ndsp@nd.edu) or by writing to: Office of the Director, University Security Police, 204 Hammes Mowbray Hall, Notre Dame, IN 46556.

The Spirit of Inclusion at Notre Dame

"Strangers and sojourners no longer.” (Ephesians 2:19)

The University of Notre Dame strives for a spirit of inclusion among the members of this community for distinct reasons articulated in our Christian tradition. We prize the uniqueness of all persons as God’s creatures. We welcome all people, regardless of color, gender, religion, ethnicity, sexual orientation, social or economic class, and nationality, for example, precisely because of Christ’s calling to treat others as we desire to be treated. We value gay and lesbian members of this community as we value all members of this community. We condemn harassment of any kind, and University policies proscribte it. We consciously create an environment of mutual respect, hospitality and warmth in which none are strangers and all may flourish.

One of the essential tests of social justice within any Christian community is its abiding spirit of inclusion. Scriptural accounts of Jesus provide a constant witness of this inclusiveness. Jesus sought out and welcomed all people into the Kingdom of God—the gentle as well as the Jew, women as well as men, the poor as well as the wealthy, the slave as well as the free, the infirm as well as the healthy. The social teachings of the Catholic Church promote a society founded on justice and love, in which all persons possess inherent dignity as children of God. The individual and collective experiences of Christians have also provided strong warrants for the inclusion of all persons of good will in their communal living. Christians have found their life together enriched by the different qualities of their many members, and they have sought to increase this richness by welcoming others who bring additional gifts, talents and backgrounds to the community.

The spirit of inclusion at Notre Dame flows from our character as a community of scholarship, teaching, learning and service founded upon Jesus Christ. As the Word through whom all things were made, Christ is the source of the order of all creation and of the moral law which is written in our hearts. As the incarnate Word, Christ taught the law of love of God and sent the Holy Spirit that we might live lives of love and receive the gift of eternal life. For Notre Dame, Christ is the law by which all other laws are to be judged. As a Catholic institution of higher learning, in the governance of our common life we look to the teaching of Christ, which is proclaimed in Sacred Scripture and tradition, authoritatively interpreted by Church teaching, articulated in normative understandings of the human person, and continually deepened by the wisdom born of inquiry and experience. The rich heritage of the Catholic faith informs and transforms our search for truth and experience. The rich heritage of the Catholic faith informs and transforms our search for truth and experience. The rich heritage of the Catholic faith informs and transforms our search for truth and experience. The rich heritage of the Catholic faith informs and transforms our search for truth and experience.

This statement was adopted by the officers of the University on August 27, 1997, in conjunction with an Open Letter to the Notre Dame community.

To Table of Contents
Academic Profile

DEGREES AND ACADEMIC PROGRAMS

The University is organized into a First Year of Studies, four undergraduate colleges, an architecture school, a graduate school of four divisions, a graduate business school, a law school, and several graduate research study centers.

All incoming freshmen spend their first year in the College of First Year of Studies and then move into the college or school of their choice as sophomores—College of Arts and Letters, Mendoza College of Business, College of Engineering, College of Science, or School of Architecture.

In the 2015–16 academic year, the students enrolled in the Mendoza College of Business topped the undergraduate enrollment figures with approximately 1,974. There were 1,831 students in the College of Arts and Letters, 1,290 students in the College of Engineering, 1,151 students in the College of Science, and 130 students in the School of Architecture.

The College of Arts and Letters offers curricula leading to the degree of bachelor of fine arts in art studio or design and bachelor of arts majoring in:

- Africana Studies
- American Studies
- Anthropology
- Art, Art History, and Design
  - Art Studio
  - Art History
  - Design
- Classics
- Arabic
- Classics
- Greek
- Latin
- Greek and Roman Civilization
- East Asian Languages & Cultures
  - Chinese
  - Japanese
- Economics
- English
- Film, Television, and Theatre
- Gender Studies
- German and Russian Languages and Literatures
  - German
  - Russian
- History
- International Economics—Arabic
- International Economics—Chinese
- International Economics—German
- International Economics—Japanese
- International Economics—Romance Languages
- International Economics—Russian
- Irish Language and Literature
- Mathematics (honors only)
- Medieval Studies
- Music

Neuroscience and Behavior
- Philosophy
- Philosophy/Theology (joint major)
- Political Science
- Program of Liberal Studies
- Psychology
- Romance Languages and Literatures
  - French
  - Italian
  - Romance Languages and Literatures
  - Spanish
- Sociology
- Theology

The Mendoza College of Business offers the degree of bachelor of business administration with majors in:

- Accountancy
- Finance
- Information Technology Management
- Management Consulting
- Marketing

The College of Engineering offers curricula leading to degrees of:

- B.S. in Aerospace Engineering
- B.S. in Chemical Engineering
- B.S. in Civil Engineering
- B.S. in Computer Engineering
- B.S. in Computer Science
- B.S. in Electrical Engineering
- B.S. in Environmental Earth Sciences
- B.S. in Environmental Engineering
- B.S. in Environmental Geosciences
- B.S. in Mechanical Engineering

The College of Science offers the degree of bachelor of science majoring in:

- Applied and Computational Mathematics and Statistics
- Biochemistry
- Biological Sciences
- Chemistry
- Chemistry/Business
- Chemistry/Computing
- Environmental Sciences
- Mathematics
- Neuroscience and Behavior
- Physics
- Physics in Medicine
- Preprofessional Studies
- Science—Business
- Science—Computing
- Science—Education
- Statistics

The School of Architecture offers the degree of bachelor of architecture (five-year program).

Supplementary majors may be taken only in conjunction with a full major. The Arts and Letters supplementary pre-health studies major provides students with an opportunity to complete a supplementary major in health-related science. Students may take supplementary majors/minors in departments of other colleges, but their dean may specify certain modifications in their curriculum. Undergraduates may obtain bachelor degrees in combination programs with other colleges in integrated five-year programs.

The course and program requirements for degrees are determined by the various colleges and schools.

These colleges are independent of one another and provide academic instruction within the various programs and departments. The dean of each college has authority, along with the college council, to determine minimum admission standards, requirements for a major and a degree from the program, and dismissal from the college and University.

The student who wishes to transfer from one college to another college within the University must have the approval of the deans of both colleges. The accepting dean has discretion regarding which credits are acceptable toward the degree in the new college.

Dual Degree. A program leading to two undergraduate degrees is distinct from a program in which a student receives one degree with two majors (such as a bachelor of business administration with a major in finance and a major in political science). Students should refer to the dual degree policies which are explained in each college's section of this Bulletin.

Academic Governance. The major source of academic governance within the University is the Academic Council, made up of administrators, faculty, and students from each of the four colleges and chaired by University President Rev. John I. Jenkins, C.S.C. All major decisions concerning academic policy and scheduling throughout the University are made by this board.

Along with the Academic Council, each college is served by a college council representing its faculty and students. The purpose of the council is to suggest and plan academic programs and to make decisions regarding academic policy within the college. Most of the colleges also have a student advisory council whose function is to elicit student ideas and concerns regarding college policy, to formulate those ideas, and to make suggestions to the college council.

Advising. All first-year students enter the College of First Year of Studies and are assigned an advisor from its faculty. The First Year of Studies offices are located at 219 Coleman-Morse Center. During their first year all students will receive the advising from their First Year of Studies advisor. Students will select the college in which they want to pursue their undergraduate degree by the end of their first year and will be directed to speak with an advisor in their intended college during their sophomore year.

Architecture—110 Bond Hall; Arts and Letters—104 O’Shaughnessy Hall; Business—101 Mendoza College of Business; Engineering—257 Fitzpatrick Hall; Science—215 Jordan Hall. After a major has been declared, students are assigned a departmental advisor as well.
University Requirements

Application must be made to the University Registrar for a degree.

The receipt of a baccalaureate degree from the University requires the satisfactory completion of the curriculum. This includes:

<table>
<thead>
<tr>
<th>University Requirements</th>
<th>Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Writing and Rhetoric</td>
<td>1</td>
</tr>
<tr>
<td>*Mathematics</td>
<td>2</td>
</tr>
<tr>
<td>*Science</td>
<td>2</td>
</tr>
<tr>
<td>*History</td>
<td>1</td>
</tr>
<tr>
<td>*Social Science</td>
<td>1</td>
</tr>
<tr>
<td>*Theology</td>
<td>2</td>
</tr>
<tr>
<td>*Philosophy</td>
<td>2</td>
</tr>
<tr>
<td>*Fine Arts or Literature</td>
<td>1</td>
</tr>
<tr>
<td>Moreau First Year Experience</td>
<td>2</td>
</tr>
</tbody>
</table>

| Total | 14 |

* One of these requirements must be University Seminar 13180–13189.

(a) Only courses marked as “Univ. Req.” via the online Class Search can be used to fulfill a University requirement. These courses can be viewed for a particular academic term by selecting the “Class Search” link within insideND or by visiting the home page of the Office of the Registrar and clicking on the “Class Search” link.

(b) In addition to these university requirements, each college has its own requirements that must be completed. Without prior permission from the appropriate college dean, special studies and directed readings do not satisfy college requirements.

(c) First-year students are required to complete a University seminar: Writing & Rhetoric course; two semester courses in mathematics; two semester courses in science; one semester course chosen from: history, social science, philosophy, theology, fine arts; and two semester courses for the Moreau First Year

Experience. The University seminar will satisfy the relevant requirement in fine arts, literature, history, social science, philosophy, theology, mathematics, or science. Foreign language is not a University requirement, but it is required in the programs of the College of Arts and Letters, the College of Science, and the School of Architecture. Three credits in a social science course (excluding economics) and three credits in a College of Arts & Letters course (excluding economics) are required in the Mendoza College of Business.

(d) Satisfactory work in a major or a concentration program of study.

(e) A minimum cumulative average of 2.000.

(f) Completion of a minimum of 50% of the degree credit hours at the University (not less than 60 credit hours) and a minimum of 75% of the degree credit hours (not less than 90 credit hours) must be earned after high school graduation through college and university courses.

(g) Enrollment in the last semester on the main university campus. Under extraordinary circumstances this requirement can be waived by the dean (or the dean’s designee) of the student’s college.

Central to undergraduate education at Notre Dame is the core curriculum, a set of University required courses intended to provide every undergraduate with a common foundation in learning. Detailed rationales for each requirement can be found at http://corecurriculum.nd.edu/.

Writing and Rhetoric. This course prepares students to write college-level arguments. Students learn to identify an issue amid diverse and conflicting points of view; frame and sustain an ethical argument that not only includes the analysis and exposition of information but also establishes what is at stake in the issue; provide sufficient and relevant evidence to support their claims; identify and evaluate potential counterarguments; respond thoughtfully to the work of their peers; develop skills for writing a research proposal, for conducting original research (e.g., through surveys or interviews), and for using the library’s print and electronic information resources; and learn to employ conventions of language in writing academic arguments.

University Seminars. The University Seminar is a distinctive opportunity for every first-year student to experience a small, writing-intensive seminar taught by a member of the University’s teaching and research faculty. With a class size of no more than 18, students have the opportunity to regularly engage in class discussions around a particular issue, problem, or topic in a given field of study. Students study the paradigms, content, methodology, or problems of a particular discipline while learning the conventions for academic writing within the parameters or discourse of that field. Each seminar also fulfills one of the University requirements in fine arts, literature, history, social science, philosophy, theology, mathematics, or science.

Mathematics. Students develop quantitative reasoning skills through the disciplined study of mathematics. Solving problems fosters deductive reasoning, while drawing conclusions from mathematical analyses promotes inductive reasoning. Students learn to convey mathematical concepts and relationships through symbols, formulas, and analytical manipulations. By modeling quantitative behavior in business, science, engineering, and the social sciences, students gain a deeper understanding of the vital role that mathematics plays in modern society.

Science. Through the study of science, students learn how knowledge of the natural world is built on observation, experiment, and evidence. They develop a basic understanding of the scientific method, including an appreciation for the interplay between theory and experiment, and how an advance in one drives the other. In addition to acquiring a working knowledge of fundamental concepts and laws in a particular field of scientific study, students learn to analyze and interpret simple sets of quantitative data and to use mathematical structures to solve problems and create models. Finally, students gain an appreciation of the important interdependence among science, technology, and society.

History. In the study of history, students explore human beings as individuals, groups, nations, or even civilizations in an attempt to comprehend the human experience. Students come to appreciate and understand the processes of continuity and change over time, and they discover how people shaped, altered, or succumbed to their environment or how, in turn, environment channeled historical experience. Thinking critically about the connections between specific events or processes and an array of contingent phenomena, students look for causes and effects, relationships, and relevance.

Social Science. Students discover the diversity of societies and world cultures, the complexity of the choices facing human beings, and the potential social and political consequences of the paths people take. Through lectures, classroom experiences, or local fieldwork, students gain an understanding of the research methods, processes and procedures used to examine human behavior. From the perspective of different social science disciplines, students uncover the competing organizations and institutional opportunities for realizing one’s conceptions of justice and the good life.

Theology. Theology, the “science of God,” represents “faith seeking understanding.” Through the first required course, students arrive at an understanding of the distinctive nature of the discipline of theology; encounter the authoritative texts that serve to constitute the self-understanding of Christian tradition as a response to God’s self-revelation; become aware of the constitution, transmission, and interpretation
Graduation Rate

Of the students entering a full-time, first-year bachelor degree-seeking program in the fall of 2009, 97 percent graduated within six years. The complete IPEDS Graduation Rate Survey may be found in the Office of Strategic Planning and Institutional Research. (http://ospir.nd.edu)

Honor at Graduation. In the undergraduate colleges, a degree will be granted with highest honors (summa cum laude) if the student's grade point average ranks among the top 5,000 percent of those students graduating from the student's college or school; for a student whose grade point average ranks among the top 15,000 percent of the student's college or school, a degree will be granted with high honors (magna cum laude); for a student whose grade-point average ranks among the top 30,000 percent of the student's college or school, a degree will be granted with honors (cum laude). A student who meets the requirements of more than one category of honors will be awarded only the highest honor for which that student qualifies.

Academic Code of Honor

The University of Notre Dame is a scholarly community in which faculty and students share knowledge, ideas, and creative works. Notre Dame's Academic Code of Honor expresses our common commitment and moral responsibility to represent accurately and to credit the contributions of every individual.

The Student Guide to the Academic Code of Honor (honorcode.nd.edu) describes the standards of personal academic conduct that all Notre Dame undergraduates pledge to follow and also outlines the set of procedures by which violations of the Honor Code are reported and adjudicated.

Before matriculation, each entering student must pledge:

As a Member of the Notre Dame community, I will not participate in or tolerate academic dishonesty.

The Undergraduate Academic Code

The Undergraduate Academic Code governs the attainment of academic credit and degrees by undergraduate students at the University of Notre Dame. The Academic Council of the University ratifies and retains both authority and responsibility for review and amendment of the Code. Its administration and interpretation fall under the aegis of the Officers, the Deans, and the Registrar of the University. A copy of the Undergraduate Academic Code can be found online at http://provost.nd.edu/information-for-faculty/faculty-handbook-academic-codes/.

Using Notre Dame Email

The University of Notre Dame uses its email system as the official means to communicate important information to students. Students are expected to check their email regularly and are responsible for reviewing the information and responding to any inquiries or action items that they receive via email. This is particularly important as traditionally paper-based processes are increasingly replaced by electronic communications. Further details about the University of Notre Dame's management of email can be found online at http://oit-help.nd.edu/email-and-calendaring/about-email/.

To Table of Contents
Grading System

The grading system employed in the evaluation of undergraduate student work is detailed in the Undergraduate Academic Code. The “descriptions” and “explanatory comments” are intended to be sufficiently general to apply across the University, but obviously have to be applied in a manner specific to each department.

<table>
<thead>
<tr>
<th>Letter Grade</th>
<th>Point Value</th>
<th>Description</th>
<th>Explanatory Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>4.000</td>
<td>Truly Exceptional</td>
<td>Work meets or exceeds the highest expectations for the course</td>
</tr>
<tr>
<td>A-</td>
<td>3.667</td>
<td>Outstanding</td>
<td>Superior work in all areas of the course</td>
</tr>
<tr>
<td>B+</td>
<td>3.333</td>
<td>Very Good</td>
<td>Superior work in most areas of the course</td>
</tr>
<tr>
<td>B</td>
<td>3.000</td>
<td>Good</td>
<td>Solid work across the board</td>
</tr>
<tr>
<td>B-</td>
<td>2.667</td>
<td>More than Acceptable</td>
<td>More than acceptable, but falls short of solid work</td>
</tr>
<tr>
<td>C+</td>
<td>2.333</td>
<td>Acceptable: Meets All Basic Standards</td>
<td>Work meets all the basic requirements and standards for the course</td>
</tr>
<tr>
<td>C</td>
<td>2.000</td>
<td>Acceptable: Meets Most Basic Standards</td>
<td>Work meets most of the basic requirements and standards in several areas</td>
</tr>
<tr>
<td>C-</td>
<td>1.667</td>
<td>Acceptable: Meets Some Basic Standards</td>
<td>While acceptable, work falls short of meeting basic standards in several areas</td>
</tr>
<tr>
<td>D</td>
<td>1.000</td>
<td>Minimally Passing Work</td>
<td>Work just over the threshold of acceptability</td>
</tr>
<tr>
<td>F</td>
<td>0</td>
<td>Failing</td>
<td>Unacceptable performance</td>
</tr>
<tr>
<td>X</td>
<td>0</td>
<td>Given with the approval of the student's dean (or the dean's designee) in extenuating circumstances beyond the control of the student. After consultation with the student's dean (or the dean's designee), the Registrar converts an X grade to an “F” if the grade is not otherwise resolved within 30 days after the beginning of the next semester.</td>
<td></td>
</tr>
</tbody>
</table>

The following grades may be assigned by the Registrar. They may not be given by a member of the faculty.

<table>
<thead>
<tr>
<th>Grade</th>
<th>Description</th>
<th>Explanatory Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>W</td>
<td>Discontinued with permission.</td>
<td>Discontinued with permission of the student's dean (or the dean's designee) following the last day for course discontinuance, per the Undergraduate Academic Code.</td>
</tr>
<tr>
<td>NR</td>
<td>Not Reported</td>
<td>Final grade(s) not reported by the instructor because of extenuating circumstances. No final grade reported for the course. It will revert to an “F” if not resolved by the beginning of final week in the next semester for which the student is enrolled.</td>
</tr>
<tr>
<td>F*</td>
<td>Not Reported</td>
<td>No final grade reported for an individual student. Assigned when the instructor has failed to report a grade for either an individual student or an entire class. It reverts to “F” if not changed within 30 days after the beginning of the next semester in which the student is enrolled.</td>
</tr>
</tbody>
</table>

The following letter grades may be given, but are not included in the computation of a student’s Grade Point Average.

<table>
<thead>
<tr>
<th>Grade</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>P</td>
<td>Pass (Pass/Fail Option: Junior or senior undergraduates may file with their academic dean [or the dean's designee], during the first six class days of the semester, the decision to take on a pass/fail basis one course per semester. Policy details are outlined in the Undergraduate Academic Code.)</td>
</tr>
<tr>
<td>S</td>
<td>Satisfactory work (courses with zero credit hours, as well as research courses, departmental seminars, colloquia or directed studies; workshops; field education and skill courses).</td>
</tr>
<tr>
<td>U</td>
<td>Unsatisfactory work (courses with zero credit hours, as well as research courses, departmental seminars, colloquia or directed studies; workshops; field education and skill courses).</td>
</tr>
</tbody>
</table>
Hesburgh Libraries

The Hesburgh Libraries is a diverse system featuring a main library that houses specialty libraries and eight branch libraries located throughout the Notre Dame campus. In an effort to further its core mission of “connecting people to knowledge,” the Libraries offer a vast array of expertise, services, resources and spaces to ensure the academic success of the student community. Whether through the expertise of subject librarians and specialty services or the access to various sources of knowledge, we continuously evolve to meet the ever-changing needs of Notre Dame students in the 21st century.

We often hear students say, “If only I had known sooner how much help I could get from the Libraries…my job as a student would have been much easier!” Reference and Subject Librarians offer research assistance in all academic disciplines and are available face-to-face, by email, phone and chat. Check out our website at library.nd.edu for a list of subject specialists, resource guides and special programs to help focus your efforts and develop your research skills. For example, Pot of Gold, an interactive web-based tutorial, is an important resource that helps students learn to efficiently locate, retrieve, evaluate and use new information. This is just one of our many programs that build information and digital literacy, essential lifelong skills for all students in every area of scholarship.

During the academic year, the Hesburgh Library is open every day, with 24-hour access 5 days per week. For more information about the services, spaces and collections at the Hesburgh Libraries visit library.nd.edu.

Main Library. The iconic Theodore M. Hesburgh Library, which recently celebrated a milestone 50-year anniversary, opened in 1963 as “Memorial Library” and was one of the largest collegiate libraries of its day. Home to many core services and resources as well as reference and subject librarians, the Hesburgh Library continues to serve as the flagship building of the Hesburgh Libraries system here at Notre Dame. In addition to the general research collections on open stacks, three specialty Libraries and Centers reside within the Hesburgh Library building:

Hesburgh Library
(574) 631-6679
library.nd.edu

Center for Digital Scholarship
1st Floor NE, Hesburgh Library
(574) 631-4900
library.nd.edu/eds

Medieval Institute Library
7th Floor, Hesburgh Library
(574) 631-5724
library.nd.edu/medieval

Subject Librarians. More than 40 Subject Librarians provide invaluable expertise and support services for the teaching, research and scholarship initiatives of the University community. library.nd.edu/subject.

Services offered by Subject Librarians include research consultations, materials purchase requests, and bibliographic instruction. They are responsible for collection development and management in one or more subject areas, including selection, communication with subject department faculty, de-selection, and preservation. Subject Librarians are also your liaison to specialty research services within the Hesburgh Libraries and throughout the campus community. Begin your student career at Notre Dame by initiating and building a relationship with your Subject Librarian as soon as possible. You can connect face-to-face, by email, phone or chat.

First Year of Studies Librarian. The Hesburgh Libraries has exceptional librarians dedicated to helping first-year students learn more about what it means for a college student to have information literacy. Information literacy is knowing how to: access information efficiently and effectively, evaluate information critically and competently, and use information appropriately for different purposes in a variety of contexts. Ultimately, this first year training helps students succeed in their academic work and in the world beyond Notre Dame. Learn more at firstyear.nd.edu/fss-resources/first-year-librarians.

Center for Digital Scholarship. The Center for Digital Scholarship is located in Hesburgh Library’s northeast corner on the 1st Floor. The Center (CDS) leverages state-of-the-art technologies, enabling students and faculty to explore new methodologies, analyze complex data and share research results in ways never before possible. The Center is nimble, capable of rapidly adopting new technologies as they emerge—transforming how teaching, research and scholarship are performed here at Notre Dame.

With partnerships campus-wide, the Center for Digital Scholarship serves as a “hub” that enhances the teaching, learning, and research process in every academic discipline. The Center empowers and equips our next generation of scientists and scholars to accelerate their research process, create new knowledge in a digital environment, and make a more profound impact in the world.

Center Expertise. The Center offers cross-disciplinary library expertise, including a Metadata Librarian, GIS Librarian, Data Analysis Librarian, Copyright Librarian, and a Digital Initiatives Librarian. Subject Librarians are also important contributors to and conduits for the Center’s impact. To meet specialty needs, The Center has developed partnerships with various campus research providers, such as the Center for Research Computing, the Center for Creative Computing, and the Office of Research. Our structure ensures that areas of expertise will evolve to meet the changing demands of our University community for research and scholarship in the 21st century.

Center Services. Current services include GIS (Geographic Information Systems) Consultation; Data Usage and Analysis; Text Mining and Analysis; Data Management Planning; Metadata Services; Copyright Services; Digitization Services and Referral Services. Workshops and introductory topic sessions will be available on a regular and recurring basis, or by request.

Interlibrary Loan. Interlibrary Loan (ILL) is a complimentary service for ND students that procures from other libraries research materials not available in the University’s collection. Delivery of electronic materials is provided through your ILL.
account interface—be sure to take time to create your Interlibrary Loan account to ensure service when you need it.

Document Delivery. Document Delivery is a service that can be used to retrieve materials from any of our collection locations for delivery to your preferred library location for pickup at service desks at any of the above locations. Articles are delivered via email unless you indicate a preference for paper copies; paper copies are delivered to the service desk of your choice within the Hesburgh Libraries system.

Senior Thesis Camp. Thesis Research and Writing Camps are designed to provide structured and supported time for you to focus on your research output. The camps are 5-day events offered during fall midterm break. Meals are provided to allow your time and attention to be focused upon learning new research and writing techniques, applying time management tips, meeting members of your student community, exchanging ideas, and building your community beyond your own discipline.

Undergraduate Library Research Award (ULRA). The ULRA award honors undergraduate students at every level who demonstrate excellent research skills and who incorporate library services, resources and expertise into their scholarly works and creative projects. There are three levels (Senior and Honors Theses, 20000–40000 Level, and 10000 Level) and six cash awards. For more information on how to apply and tips for submissions at library.nd.edu/ulra.

Writing Center Consultations. The Libraries feature an on-site partnership with the Writing Center. The Writing Center has evening hours within the Hesburgh Library Sunday–Thursday during the regular academic year.

Additional Services. In the Libraries we provide access to overhead and flatbed document scanning; ask-a-librarian online, phone and email services; remote access to research materials such as electronic books, journals and databases.

Academic Resources

Faculty. In 2015–16, Notre Dame's instructional faculty numbered 1,126 full-time and 179 part-time. Other faculty, such as administrative, professional specialists, librarians, and research fellows, numbered 293 full-time and 10 part-time. Ninety-two percent of the full-time instructional faculty have terminal degrees; 92 percent of them have doctorates. Ninety-eight percent of the full-time instructional faculty are lay persons. (The faculty to student ratio is 1:10.)

Institutes, Centers, and Laboratories. The many and diverse institutes, centers, and laboratories maintained by the University are an indication of the spectrum of scholarly interest that students are able to join in and profit from.

Institutes, centers, and specialized research laboratories at Notre Dame include the Helen Kellogg Institute for International Studies, the Joan B. Kroc Institute for International Peace Studies, the Kroc-Notra-Naughtin Institute of Irish Studies, the Liu Institute for Asia and Asian Studies, the Erasmus Institute, the Nanovic Institute for European Studies, the Institute for Latino Studies, the Medieval Institute, and the Radiation Laboratory. Other institutes, centers, and similar entities are the Center for Environmental Science and Technology (CEST); the Center for Advanced Scientific Computing; the Center for Astrophysics at Notre Dame University (CANDU); the Center for Applied Mathematics; the Center for Molecularly Engineered Materials; the Center for Civil and Human Rights; the Center for Continuing Education; the Center for Philosophy of Religion; the Center for Research in Business, embracing the Center for Business Communication, the Center for Ethics and Religious Values in Business, and the Center for Research in Banking; the Center for Social Concerns; the Center for the Study of Contemporary Society, which embraces the Gerontological Research Center, the Laboratory for Social Research, the Multinational Management Program, and the Philosophic Institute; the Charles and Margaret Hall Cuswaha Center for the Study of American Catholicism; the Ecumenical Institute (Jerusalem); the Energy Analysis and Diagnostics Center; the Center for Nano Science and Technology; the Environmental Research Center (UNDEC); the W.M. Keck Center for Transgene Research; the Wûther Cancer Research Center, the Institute for Church Life; the Center for Ethics and Culture; the Institute for Scholarship in the Liberal Arts; the Jacques Maritain Center; the Reilly Center for Science, Technology and Values; the Urban Institute for Community and Educational Initiatives; the Thomas J. White Center for Law and Government; and the William and Katherine Devers Program in Dante Studies.

Other laboratories include the Hessert Center for Aerospace Research, the Air and Water Quality Analysis Laboratory, the Aquatic Biology Laboratory, the Biofluid Mechanics Laboratory, the Catalysis Laboratory, the Fluid Dynamics Laboratory, the Bernard J. Hank Family Environmental Research Laboratory, the LOBUND Laboratory, the Parasitology Laboratory, the Solid State Material and Devices Laboratory, the Vector Biology Laboratory, and the Zebrafish Research Facility. These research centers contain specialized facilities and equipment.

Research. At the University of Notre Dame, record-breaking research awards of more than $133 million have paved the way for new discoveries, unlocked knowledge, and improved technologies. Both the University and Notre Dame Research (NDR) are committed to supporting a culture of research, scholarship, and creative endeavor throughout campus, in order to be a repository for knowledge and a powerful means for doing good in the world.

NDR provides support to these researchers in various aspects of research activity including administration, compliance, and technology transfer. In addition, NDR supports and encourages innovation in more than 20 world-class core facilities and resources, as well as in a number of key areas of research, including cancer, environmental change, global health, and many more.

At Notre Dame, more than one-third of undergraduate students participate in original research with a faculty mentor. The University’s low student-faculty ratio means that students from all Colleges and Schools are right alongside Notre Dame’s leading researchers as they conduct groundbreaking research in the field, on the bench, or at the policy table. In addition, students have the opportunity to pursue funding for independent research and creative projects through a number of organizations that can be conducted on campus and abroad.

More information regarding Notre Dame Research can be found at research.nd.edu or by following @UNDResearch on Twitter.

Snite Museum of Art. The museum features collections and a sculpture park that place it among the finest university art museums in the nation.

The Mesoamerican collection includes fine examples of early Mexican, Central, and South American cultures.

The Kress Study Collection has Italian Renaissance panel paintings and the Baroque collection contains works by Bloemaert, Coupel, and van Ruisdael.

Selections from the Feddersen Collection of over 70 notable Rembrandt van Rijn etchings are exhibited frequently; and the 18th-century collection includes such masters as Boucher, Vigée-LeBrun, Reynolds, de Mura and West.

The critically acclaimed John D. Reilly Collection of Old Master to 19th-Century Drawings includes works by Tintoretto, Tiepolo, Oudry, Ingres, Fragonard, Géricault, Millet, and Degas. The Noah and Muriel Burkin Collection of 19th-Century French Art is one of the museum’s major strengths, with paintings and drawings by Corot, Boudin, Couture, Courbet, and Gérôme.

The Ashbaugh Decorative and Design Arts Gallery spans the 18th through 20th centuries and exhibits early porcelains from Sèvres and Meissen. Exceptional ceramics, furniture, glass, and silver pieces represent both the Arts and Crafts and Art Nouveau styles of the 19th century in addition to the Art Deco and Bauhaus modern movements. Twentieth-century-designed pieces by Wright, Stickley, and Hoffman are also on view.

The Janos Scholz Collection of 19th-Century European Photography contains some 5,500 images of persons and places taken during the first 40 years of camera use.

Native American art focuses on early 19th-century, Plains Indian-painted war records and costumes; it also features Mimbres- and Anasazi-painted ceramics from the prehistoric Southwest.


Admission

This year we expect more than 19,000 students will apply for admission to Notre Dame's entering class. Most of the applicants will have the academic aptitude and preparation necessary to complete a degree program at the University. The Committee on Admissions will decide which applicants will be among the 2,000 included in the class. To understand how this is done, it is first necessary to know the procedure for applying to Notre Dame.

ACADEMIC PREPARATION

Most applicants will have taken and successfully completed the most challenging program of studies available in their high schools. We strongly recommend a curriculum including four years each of English, mathematics, science, history, and foreign language.

All successful applicants are admitted to the First Year of Studies. However, entrance requirements differ slightly for students planning to pursue studies in science and engineering. Sixteen units are required of all students as described below.

For students intending to choose a major in the College of Arts and Letters or the Mendoza College of Business, excluding the arts and letters premedical/preprofessional program and the combined arts-engineering program, the 16 units must be distributed as follows:

- English
- Algebra, advanced algebra, trigonometry, and geometry
- Foreign language
- History
- Science
- Additional English, mathematics, science, history, social studies, and language courses

For students intending to major in the College of Science, the College of Engineering, the School of Architecture, the arts and letters premedical/preprofessional program or the combined arts-engineering program, the distribution must be:

- English
- Algebra, advanced algebra, trigonometry, and geometry
- Advanced mathematics (calculus or precalculus)
- Foreign language
- History
- Chemistry
- Physics
- Additional English, mathematics, science, history, social studies, and language courses

The unit is the credit for a year of satisfactory work in an accredited secondary school. The two language units required must be in the same language. In some cases, the Committee on Admissions waives the foreign-language requirement.

APPLICATION PROCESS

First-year students are admitted to the University of Notre Dame for only the fall semester of each academic year. A student who wishes to be considered must have the following items on file: (1) a completed application, (2) an official high school transcript, (3) a letter of evaluation from a secondary school teacher and (4) an official report of scores on the SAT or ACT.

Application. The application is a student's opportunity to tell the Office of Undergraduate Admissions about him or herself. Applicants are advised to include any information about their personal and academic circumstances that may give the Committee on Admissions a more holistic view of their attributes.

The University of Notre Dame is a member of the Common Application. Prospective first-year students can access the online application and writing supplement at www.commonapp.org, and may register for a Common Application account beginning August 1.

High School Transcript. Your high school must submit an official copy of your transcript, including a listing of your senior-year courses.

Evaluation. The Office of Undergraduate Admissions requires two letters of evaluation from every applicant. We do not encourage additional letters of recommendation. Your guidance counselor will complete a counselor evaluation, which helps us gauge your performance in your high school environment. Usually guidance counselors will include a short personal letter of evaluation. It will assess your performance in class as well as your character and personality. You may choose any high school teacher to write your letter of evaluation, as long as he or she has taught you in an academic subject area (math, science, English, social science, or foreign language) and knows you well.

Testing. All applicants are required to take the SAT or ACT. The test results are part of the evaluation process for admission. You must take one of these tests no later than January of your senior year.

The College Board code for the University of Notre Dame is 1841, and the ACT code for Notre Dame is 1252.

If you have taken other standardized tests (SAT Subject Tests, AP, IB, TOEFL), please include the results with your application. We will use these scores as supplementary information, although they cannot be used in place of the SAT or ACT.

Anyone who wishes to continue the study of French, German, Italian, or Spanish at Notre Dame can take the SAT Subject Test in that language. The results will be used for placement purposes.

Students enrolled in home-school programs or in high school programs that substitute certification of competencies for grades must take three SAT Subject Tests: science, history, and foreign language.

DECISION AND NOTIFICATION PLANS

Students seeking admission to Notre Dame's entering class must choose to have their applications reviewed under one of two procedures.

Early Action: November 1

Notre Dame has a Restrictive Early Action program.

- A student applying Early Action to Notre Dame may apply to other Early Action programs.
- A student applying Early Action may not apply to any college or university that has a binding Early Decision program.
- Students do not indicate a first-choice preference by applying early, and still may wait until May 1 to indicate their decision to attend.

Students who apply in the Early Action process receive an admissions decision before Christmas. Three decisions are possible:

- Admission to the University
- Denial of admission to the University
- Deferral of decision until regular action

Students admitted to Notre Dame have until the May 1 deadline to decide whether they would like to confirm their attendance at the University. If a student is denied admissions in Early Action, then the process ends and he/she cannot apply later during the Regular process. If a student is deferred, the Admissions Committee has decided to review the application further in the Regular Action process, and so “rolls over” the application to Regular Action.

To Table of Contents
Because the Admissions Committee is unable to extend all of its offers of admission in the Early Action process, it is highly conservative when making Early Action admission decisions. The Admissions Committee advises students to apply in the Early Action process only if they are in the very top ranges of our applicant pool. Further clarification of Early Action standards for this year can be gained by seeing the Admissions Counselor who may travel near your area in the autumn or by contacting the Office of Undergraduate Admissions at admissions@nd.edu.

Regular Action: January 1

The Regular Action process at Notre Dame is also non-binding. Three decisions are possible following the Regular Action process:

- Admission to the University
- Denial of Admission to the University
- Waitlist

Students will receive one of these decisions by the beginning of April and, if admitted, are required to send in a confirmation card and deposit by May 1. Students who are denied admission to the University may choose to attend another four-year institution for one or two years and then apply to Notre Dame as a transfer student.

Waiting List. Some applicants will be notified that they have been placed on a waiting list and will receive a final decision during the period of mid-May to mid-June. If placed on the waiting list, you should make plans to attend another institution because we have done quite well on standardized tests. We could cite the average rank and median test results of our admitted students, but a listing of such numbers is often misinterpreted. Each year, some applicants with high test scores and class rank are not admitted while some students with less impressive numbers are selected for admission based on their other outstanding academic and personal accomplishments.

Personal Qualities. The lifeblood of Notre Dame resides in its people: faculty, staff, and students. Each potential student's application is studied to determine what talents, skills, and interests that person might offer Notre Dame's community. We have a strong interest in people who can make unique contributions and share their talents with us—talents as musicians, writers, technicians, tutors, athletes, artists, volunteer workers, actors, organizers, thinkers, conversationalists, poets, or dancers. There is need in each freshman class for a variety of talents and personalities. The listing of activities, written statements, and evaluations gives us a view of the person represented by the application. It is important to present talents and intellectual interests on the application form.

MENZOA COLLEGE OF BUSINESS

In response to the growth of its undergraduate business school, the University of Notre Dame is adopting new admission practices for students interested in enrolling in the Mendoza College of Business. The new policy, which will commence with the fall 2015 first-year class, will cap enrollment at 550 per graduating class.

When first admitted to Notre Dame, students who indicate an interest in major in business will be informed, at the time of admission, whether they are “pre-approved” to do so at the end of their first year, should that remain their goal. If they are not pre-approved, students will be advised that they will be free to enroll in any other college or school, but that the chances of being approved to major in business after the first year will be extremely limited. Such students will be advised that they should reconsider enrolling in Notre Dame if they are only interested in majoring in business. If a student who is pre-approved to major in business later decides not to do so, she or he will be free to major in any other college or school at Notre Dame.

STUDENTS WITH DISABILITIES

Each year Notre Dame admits a number of academically talented students with various disabilities. Once enrolled here, students with disabilities may use a variety of services intended to reduce the effects that a disability may have on their educational experience. Services do not lower course standards or alter essential degree requirements but instead give students an equal opportunity to demonstrate their academic abilities. Students can initiate a request for services by registering with the Sara Bea Center For Students With Disabilities (OSD) and providing information that documents his or her disability. Individual assistance is provided in selecting the services that will provide access to academic programs and facilities of the University.

OSD provides services to students with mobility, hearing, or visual impairments, as well as students with learning disabilities. The services that are typically used include alternative formats of textbooks, modifications in the way students take exams, and readers, note takers, and academic aides. The University maintains accessible rooms in nine residence halls for students with physical disabilities.

All Notre Dame students must supply the necessary initiative and determination to discover and utilize the available campus resources. Students with disabilities will find that a truly creative ability to solve daily problems may be as important to success as developing alternative skills through academic experience. We invite admitted applicants to visit Notre Dame and become familiar with the facilities here before making a final college choice.

For more information, contact the Sara Bea Center For Students With Disabilities at 574-631-7157 or 574-631-7173 (TTY).

INTERNATIONAL STUDENTS

Notre Dame welcomes students from around the world. International students enhance the cultural and intellectual atmosphere of our community.

The admissions process for international students who are not Permanent Residents of the United States differs slightly from the process for U.S. citizens. To complete an application, an international student must submit a Certification of Finances. This document is provided on our website: http://financialaid.nd.edu/prospective-students/applying/international-students/. Additionally, as English proficiency is critical to a student's academic success at the University, students who do not speak fluent English must take the Test of English as a Foreign Language (TOEFL) or IELTS. The SAT or the ACT is also required for admission. Students who have difficulty locating a test center that administers the SAT or ACT should contact the American Embassy or an American school in their area.

International students wishing to apply for our limited need-based financial assistance must complete
both the Certification of Finances and a CSS Foreign Student Aid Application. Based upon a review of academic credentials, financial need, and availability of scholarship resources, a student may be considered for financial assistance. Financial aid packages may include student loans, student employment, and University scholarship assistance.

TRANSFER ADMISSION

Some students are admitted to Notre Dame with advanced standing. If you wish to apply for admission as a transfer student, you must have obtained the equivalent of at least 27 semester hours of transferable credit, and maintained a cumulative “B” average in all courses. (The competition is such that the average GPA for admitted students is significantly higher.) The committee gives strong preference to applicants who have completed Notre Dame’s first-year course requirements. Online courses, distance-learning courses, USAFI courses, and credits earned through the College Level Examination Program (CLEP) are not transferable.

To be eligible for an undergraduate degree, you must complete a minimum of 50% of the degree credit hours at the University (not less than 60 credit hours) and a minimum of 75% of the degree credit hours (not less than 90 credit hours) must be earned after high school graduation through college and university courses. Please consult the Academic Code for details.

As a transfer applicant you must provide the Office of Admissions with (1) a completed application form, (2) an official transcript from each college attended along with course descriptions, (3) a final high school transcript, and (4) an official SAT or ACT score.

If you are interested in transferring to Notre Dame, please note that we cannot guarantee on-campus housing to transfer students. Off-campus housing close to the University is available; students are offered campus accommodations from a waiting list if rooms become available.

You must submit your transfer application for the fall semester by March 15. The Transfer Admissions Committee will notify you of its decision between June 1 and July 1.

The deadline for the spring semester is November 1. The committee will notify you of its decision between December 1 and January 5.

The University of Notre Dame uses the Common Application for both first-year and transfer applicants. An application overview and a link to the online Common Application can be found at admissions.nd.edu.

Fees and Expenses

In the undergraduate colleges, the University is essentially a residence school for full-time students. As many students as accommodations will allow are housed in the campus residence halls. First-year students are obliged to live on campus. Permission to live off campus must be obtained from the dean of students. The fees listed below are for the academic year 2015–16 and are subject to change according to factors operating within the economy that affect universities as well as the country as a whole.

Campus Resident Student. The basic fee for the academic year 2016–17 ranges from $32,021.50 to $32,271.50 per semester. This fee entitles the student to instruction and tuition for the semester; meals in the University dining halls; a room in a residence hall; the use of the general library and the departmental libraries; admission to many lectures, concerts, and entertainment facilities at Washington Hall and DeBartolo Performing Arts Center; the use of the Rockne Memorial, the Joyce Center, the Rolfs Sports Recreation Center, the athletic fields, and the University golf course (there is a nominal fee for the use of the golf course); a copy of each issue of the Scholastic (the news magazine of the University) and a copy of the Dome (the yearbook of the University) in the second semester.

Off-Campus Student. The tuition and fees for the full-time off-campus student is $24,842.50 per semester for the academic year 2016–17, which entitles the student to instruction for the semester and those things listed above under the total fee for the campus resident student. For the off-campus student requiring board and lodging at the University Health Services in time of illness, there is a daily charge.

Part-Time Undergraduate Student. An undergraduate degree-seeking student must be in full-time status each semester. Any undergraduate student who is enrolled in at least 12 credit hours is considered full-time. A student who believes that special circumstances may require him or her to carry fewer than 12 semester hours in any semester (including a senior in his or her last semester) must seek approval to be part-time from his or her respective college. This request and conversion, if approved, must be made before the sixth class day of a fall or spring semester. If permission is granted, the dean will notify the Office of Student Accounts of the change of status and an adjustment to tuition will be made if necessary. There will be no adjustment of tuition unless permission is given by the dean and the class schedule is changed before the sixth class day of the fall or spring semester.

Undergraduate Fees.

- Technology Fee: $125 per semester.
- Health Center Access Fee: $75 per semester.
- Student Activity Fee: $47.50 per semester.
- Odsherer Fee (daily student newspaper): $6 per semester.

The above fees do not cover the cost of textbooks, stationery, etc., which is estimated at $1,050 per year for the average undergraduate student.

The technology fee provides partial funding for the University’s enterprise-wide technology infrastructure, which provides all students access to the Internet, e-mail, coursework, campus clusters, and a wide array of the latest software. This fee provides for the growth in student services, such as course and degree requirements, Web Registration, and value-added Internet related capabilities.

The health center access fee provides students access to all services at the University Health Center and University Counseling Center, including 24-hour medical care and counseling/mental health assistance, alcohol and drug education programs, and health-education and wellness programs. This fee provides partial funding to address increasing student health and wellness needs, along with funding to maintain health facilities.

Student Accident and Illness Insurance Plan. To assist in financing any medical or hospital bills, a student health insurance plan is available to students. Notre Dame requires all international students to have health insurance coverage comparable to the University Plan; therefore, they are automatically enrolled and charged for the student health insurance plan.

Students who do not wish to participate in this plan, and have other comparable health insurance coverage, may submit a request to waive the health insurance. Please note that the waiver request must be submitted annually by the published deadline or the student will be responsible for paying the cost of the insurance. For information on the current insurance rates and the waiver request process, please visit the University Health Services website at https://uhs.nd.edu/insurance-billing/.

Information regarding the University-sponsored plan is mailed to the student’s home address in July and is also available online at: https://uhs.nd.edu/insurance-billing/. Additional information is available in University Health Services by calling the Office of Insurance and Accounts at 574-631-6114.

The cost of the premium for the 2016–17 academic year is detailed on the University Health Service website at uhs.nd.edu.

Payment Regulations. IRISHPAY is the University’s online student account statement and payment system available to both students and their authorized payers. Statements are generated on a monthly basis. The fall semester student account statement is issued in mid-July; the spring statement is issued in early December. These statements list basic semester charges for tuition, fees, and room and board. Additional statements for personal charges, including bookstore, health services, laundry and other miscellaneous charges are issued on a monthly basis. All fees and required deposits are to be paid in advance of each semester.

To Table of Contents
Secure online payment may be made using eCheck through IRISHPAY. Remittance should be made payable to the University of Notre Dame. The University does not accept credit card payments. Notre Dame students taking certain courses at Saint Mary's College that carry special fees will be billed for such charges according to Saint Mary's rates.

Separation Regulation. Any graduate, law, graduate business, or undergraduate student who at any time within the school year wishes to separate from the University should contact the Office of the Registrar. To avoid failure in all classes for the semester and to receive any financial adjustment, the separating student must obtain the appropriate clearance from the dean of his or her college and from the assistant vice president for Residence Life.

Prior to the first day of classes, a full-tuition credit will be made. On or after the first day of classes, the tuition fee is subject to a prorated adjustment/credit if the student (1) separates voluntarily for any reason on or before the last day for course discontinuance at the University, or (2) is suspended, dismissed or involuntarily separated by the University, for any reason, on or before the last day for course discontinuance at the University, or (3) is later obliged to separate because of protracted illness, or (4) separates involuntarily at any time because of military service, provided no credit is received for the classes from which the student is forced to separate.

Upon return of the student forced to separate for military service, the University will allow him or her credit for that portion of tuition charged for the semester in which he or she separated and did not receive academic credit.

Room and board charges will be adjusted/credited on a prorated basis throughout the entire semester.

Students receiving University and/or Federal Title IV financial assistance who separate from the University within the first sixty percent (60%) of the semester are not entitled to the use or benefit of University financial assistance who separate from the University within the first sixty percent (60%) of the semester and/or Federal Title IV funds beyond their separation date. Such funds shall be returned promptly to the entity that issued them, on a pro rata basis, and will be reflected on the student's University account.

This Separation Regulation may change subject to federal regulations.

*Executive MBA students are subject to a different Separation Regulation and Tuition Credit Calculation, both of which may be obtained from the Executive MBA Program.

Monthly Payment Plan. The University makes available a monthly payment plan administered by Higher One. This plan allows families to make payments over a 9- or 10-month period rather than make two larger payments, one at the beginning of each semester.

The annual fee to enroll in the program is $40. For additional information or to enroll in the plan, call Higher One toll-free at 877-282-5933 or visit their website at: https://tuitionpay.higherone.com/nd.

Cost of Attendance. The estimated average 2016–2017 Notre Dame undergraduate student expense budget includes:

<table>
<thead>
<tr>
<th>Direct Costs</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Tuition and Fees</td>
<td>$49,685</td>
</tr>
<tr>
<td>Room &amp; Meals*</td>
<td>14,358</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>64,043</strong></td>
</tr>
</tbody>
</table>

In addition to the direct costs listed above, each student should plan for the cost of books, supplies, transportation, and personal expenses. Annual increases in costs should be anticipated. Further details may be obtained from the Office of Financial Aid website.

Because of its national student body traditionally enrolled at the University, the transportation allowance will generally range currently from a minimum of $500 to about $1,000, with $750 representing the approximate midpoint.

Cost of Attendance = Financial Need

Family Responsibility. The University assumes parents will contribute to their children's education to the extent they are capable as long as the student is enrolled as an undergraduate. Notre Dame cannot accept financial responsibility for students whose parents discontinue this support for reasons other than ability to pay. It is important to note that the family includes both the parents and the student. Students seeking financial aid will be expected to contribute toward their educational expenses. This self-help may include resources from a portion of their own assets, as well as earnings resulting from work prior to and during their enrollment at Notre Dame. In a very real sense, students who borrow also contribute to their costs from their future earnings.

Financial Aid Application Process. The CSS/Financial Aid PROFILE Application and the Free Application for Federal Student Aid (FAFSA) serve as the official applications for need-based financial aid, including University and club scholarship programs. Unless otherwise noted, additional applications are not required to be considered for all scholarship/grant programs the Office of Financial Aid administers.

A student should not wait for an admission decision before submitting the FAFSA and PROFILE. Applications for financial aid must be properly filed every year.

The FAFSA is available at fafsa.gov and should be filed between October 1 and February 15 for prospective first-year students, October 1 and April 25 for continuing students, and October 1 and March 31 for prospective transfer students. Students applying for federal loans and grants and not Notre Dame University aid need to complete only the FAFSA. The federal school code for identifying Notre Dame on the FAFSA is 001840.
The PROFILE is available at collegeboard.org and should be filed between October 1 and February 15 for prospective first-year students, October 1 and April 25 for continuing students, and October 1 and March 31 for prospective transfer students. The PROFILE is required for University need-based scholarship consideration. Notre Dame's CSS code for the PROFILE is 1841. Undocumented students should complete the CSS PROFILE only.

If a student's parents are divorced or separated, the noncustodial parent must submit the CSS Noncustodial PROFILE application. The College Board will collect the noncustodial parent's information through an online process; details will be emailed to applicants by the College Board immediately following receipt of the PROFILE from the custodial parent.

Verification. Federal regulation requires the University to verify and document certain information provided by students and their families in relation to an application for assistance. The Office of Financial Aid reserves the right to request additional documentation and/or clarification of a family's financial situation.

Because the amount of financial aid awarded to an individual reflects the family financial situation, the University, as a matter of policy, does not publicly announce the amount of aid awarded. All information received by the Office of Financial Aid is treated as confidential.

All forms of aid awarded by the University are subject to adjustment based upon additional awards received by the student in excess of the established need. Students receiving aid from the University of Notre Dame must notify the Office of Financial Aid of all other forms of educational assistance from financial aid sources other than those directly administered by the office.

International Students. Financial aid opportunities for first-year international students are limited and at present, there is no funding to assist international transfer students. International students should be prepared to finance, either privately or through a sponsor, the full cost of their Notre Dame education. The International Student Certification of Finances must be submitted at the time of application for admission, illustrating and documenting sufficient financial support to meet the projected cost of a Notre Dame undergraduate education. The International Student Certification of Finances is available from the Office of Undergraduate Admissions website at admissions.nd.edu.

Prospective first-year students wishing to be considered for need-based financial assistance must first complete an International Certification of Finances along with a CSS/Financial Aid PROFILE adapted for international students. Based upon a review of academic qualifications, financial need, and availability of student aid resources, an applicant may be considered for financial assistance, including a self-help component of a student loan and student employment, along with University scholarship assistance. The Certification of Finances and the CSS/Financial Aid PROFILE will be reviewed along with the student’s application for admission. Additional information is available on the Office of Admissions website.

FINANCIAL AID PROGRAMS

There are numerous types of financial aid opportunities for students. The process outlined above is that which the student follows for all aid programs administered by the University’s Office of Financial Aid.

Most aid programs will fall into one of three categories of assistance: scholarships/grants, student employment, or loans.

SCHOLARSHIPS/GRANTS

Scholarship/grant assistance is a type of aid that is free of repayment obligation.

Merit Scholarships. Notre Dame offers a limited number of merit scholarships to a limited number of students accepted for admission as a first-time incoming freshman, who demonstrate exceptional academic performance, leadership, commitment to service, and intellectual promise. The value of merit-based scholarship opportunities range from $10,000 to $25,000 annually. Typically, these scholarships are renewable for four years and recipients may be invited to participate in leadership development and enrichment opportunities as an additional benefit of their awards.

Selections for merit-based scholarships are made as part of the admission process and most scholarships do not require separate application for consideration, however, eligible students may be contacted directly with a request for additional information prior to selection. The Hesburgh Yusho Scholars Program requires an additional application which is outlined at http://hesburgh.yusko.org. Recipients of merit-based awards are notified of their selection in early April.

Students who receive both merit scholarship and need-based scholarship from the University are subject to reduction or elimination of need-based federal and institutional financial aid in accordance with federal regulations and institutional policy.

Notre Dame Scholarships. All students accepted for admission, who have completed the financial aid process as outlined above, are automatically considered for University scholarships. The level of University assistance is first based on demonstrated financial need, and then academic performance, and will thus vary from student to student.

Renewal of University scholarship assistance is based upon a review of students’ academic performance at the University and their annually demonstrated financial need. Based on the students’ admitted class level, University scholarship consideration is given for a maximum of eight semesters (10 semesters for the Architecture program and combination five-year engineering program with the College of Arts and Letters). Students electing to remain at Notre Dame to pursue a second major, second degree, or dual-degree program are not eligible for University scholarships.

Students not receiving scholarship/grant assistance may be considered in subsequent years based on financial need, academic performance, and the availability of University scholarship resources.

Notre Dame Club Scholarships. All applicants who complete the FAFSA and the PROFILE are considered for club scholarships. Students will be advised by participating clubs if any additional steps (e.g., interview, essay) might be required by the local club.

Similar to University scholarships, club scholarships are awarded on the basis of demonstrated financial need. Since Notre Dame meets the demonstrated financial need of the student, the receipt of any club scholarship not listed in the Financial Aid Notification (FAN) will likely result in an adjustment to the financial aid award.

Federal Pell Grant. The Pell Grant is a nontaxable grant made available by the federal government to eligible undergraduate students enrolled in a degree-granting program.

Notre Dame cooperates with the U.S. Department of Education in administering this program. Applicants must be U.S. citizens or permanent residents of the United States.

The FAFSA serves as the application for the Pell program. Eligibility is determined by the Federal Methodology formula uniformly applied to all applicants. After applying, the student will receive a Student Aid Report (SAR) from the federal government. Eligible students will be notified by the University’s Office of Financial Aid. In 2016–17, the grants range from $598–$5,815.

Federal SEOG Grant. The Federal Supplemental Opportunity Grant (SEOG) assists students demonstrating exceptional financial need in accordance with guidelines and funding allocations established by the Department of Education and the Office of Financial Aid. SEOG awards range from $100–$4,000 annually.

State Scholarships and Grants. The states that currently award scholarship/grant assistance to Notre Dame students are Indiana, Rhode Island, and Vermont.

Reserve Officer Training Corps (ROTC). Air Force, Army, and Naval (Navy & Maritime Corps) ROTC scholarships are available on a competitive basis, and the military services award them based on merit and personal qualifications. ROTC scholarships may be awarded up to the full cost of tuition, books, and fees, plus an in-school subsistence. Students should...
apply during the fall semester of their high school senior year. Students who do not receive an ROTC scholarship as incoming first-year students may compete for a limited number of on-campus scholarships available to ROTC midshipmen or cadets. Further information is available through high school guidance offices, military recruiting offices, and the ROTC Departments of the University.

**Other Federal Assistance Benefits.** Certain students may be eligible for special forms of federal agency benefits. Among these agencies are Americorps, the Veterans Administration, the Office of Vocational Rehabilitation, and the Bureau of Indian Affairs. Further details may be obtained through the appropriate local office of the particular agency.

**Private Scholarships.** Many private organizations provide financial assistance to Notre Dame students. Scholarship information may be obtained by contacting civic, professional, religious and other community organizations. The College Board's Scholarship Search and fastweb.com provide scholarship search information. Caution is advised with respect to the use of fee-based scholarship search enterprises.

**STUDENT EMPLOYMENT**

Part-time employment opportunities, including those offered through the need-based federal work-study and paid community service programs, as well as other programs, are intended to help the student pay for personal and other related educational expenses.

The amount of employment eligibility indicated in the FAN is an estimate of potential earnings and not a guarantee of employment or earnings. Student employees average 10–12 hours of work per week.

**LOANS**

Borrowing a student loan is a matter that should be undertaken with the greatest of deliberation and with full knowledge of the significant responsibilities involved. In addition, all borrowers are advised of their loan repayment options and obligation upon entering and leaving the University. In an effort to provide additional information regarding a borrower's rights and responsibilities, the Office of Financial Aid offers general counseling to all borrowers.

**Federal Direct Student Loan Program.** Direct Loans, from the William D. Ford Federal Direct Loan Program, are low-interest rate loans available to eligible students to help offset the cost of higher education. The lender is the U.S. Department of Education. The Direct Loan Program includes the subsidized and unsubsidized loans. For additional information on the terms and conditions of Direct Loans visit studentloans.gov.

**Federal Perkins Loan.** The Federal Perkins Loan is a need-based loan offered to students who demonstrate eligibility. The Perkins Loan is not available to first-time borrowers enrolling during the 2016–2017 academic year.

**Notre Dame Subsidized Loan.** The Notre Dame Subsidized Loan is a need-based loan offered to students who demonstrate financial need. The Notre Dame Subsidized Loan is available to first-time borrowers enrolling during the 2016–2017 academic year. Additional information is available on the financial aid website.

**Private Loans.** After exhausting the opportunities available from the federal aid programs, many students will consider private loan programs as a source of funding. The terms and conditions of these programs vary, and as such, students are encouraged to review the details of the programs before selecting a private loan program. Private loans are not eligible for loan consolidation programs made available for federal student loans. Interest rates, fees (both at the time of borrowing and at repayment), credit checks, and annual and aggregate loan limits require careful evaluation by students as consumers. As always, taking on debt for any reason should be done deliberately and only for amounts needed. Additional information may be obtained from the Office of Financial Aid or its website.

**OTHER**

**Monthly Payment Plan.** The University makes available a monthly payment plan administered by Higher One. This plan allows families to make payments over a 9- or 10-month period rather than make two larger payments, one at the beginning of each semester.

The annual fee to enroll in the program is $40. For additional information or to enroll in the plan, call Higher One toll-free at 877-282-5933 or visit their website at: https://tuitionpay.higherone.com/nd.

**Federal Direct PLUS.** Parents of dependent students who have a valid FAFSA on file and whose student is enrolled at least half-time may apply for the Direct PLUS Loan. The parent must be a U.S. citizen or permanent resident, Direct PLUS Loan applications are subject to Department of Education credit review. If a PLUS Loan is denied, the student may request additional unsubsidized Direct Loan funds by contacting the Office of Financial Aid. For additional information on the terms and conditions of Direct Loans visit studentloans.gov. Note: program is subject to federal legislative changes.
Standards of Progress for Recipients of Financial Aid

The United States Department of Education (Higher Education Act of 1965, as amended) requires students to maintain satisfactory progress toward completing their degree in order to receive financial aid. Recipients of federal, state, institutional, and private resources, including grants, scholarships, work-study, and student and parent loans, are subject to these standards. Satisfactory academic progress requirements for financial aid recipients are not the same as the University's requirements for academic good standing.

Satisfactory academic progress is reviewed annually after spring grades are posted by the Registrar's Office to determine financial aid eligibility for the subsequent summer and academic year. Students returning to the University following a withdrawal or dismissal will be evaluated at the time of readmission. Students whose program is one academic year in length or shorter will be evaluated at the end of each enrolled term.

Students are required to meet the minimum cumulative grade point average, be on pace to graduate and complete their degree within a maximum time frame as defined below. All semesters of enrollment are reviewed regardless of whether aid was received for those semesters.

Minimum Cumulative Grade Point Average (GPA)
Students are required to meet the following minimum cumulative GPA requirements:

<table>
<thead>
<tr>
<th>Classification</th>
<th>Minimum Cumulative GPA</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Year Freshmen</td>
<td>1.75</td>
</tr>
<tr>
<td>Upperclass Students</td>
<td>2.0</td>
</tr>
</tbody>
</table>

Pace to Graduate
Students are required to earn a minimum of 67% of cumulative hours attempted to stay on pace to graduate. Pace is calculated by dividing the cumulative number of hours earned by the cumulative number of hours attempted.

Maximum Time Frame
Students are required to complete their degree requirements within a maximum time. Based on an undergraduate student's admitted class level, University scholarship and state aid consideration is given for a maximum of eight semesters (ten semesters for the architecture program and combination five-year engineering program with the College of Arts and Letters). Students needing additional time to complete their degree requirements due to a change in major, second major, dual degree or retaking coursework are not eligible for University scholarship.

Credits and Grades Used to Determine Pace and Maximum Time Frame
All coursework attempted, including repeated and withdrawn coursework recorded on the student's academic record as of the seventh class day, is considered when calculating pace and maximum time frame and determining whether the student meets satisfactory academic progress.

<table>
<thead>
<tr>
<th>Course/Grade</th>
<th>Included in Earned Credits</th>
<th>Included in Attempted Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AP (Advance Placement)</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Credit by Exam</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Transfer Credits</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Grades: F*,I,NR,U,V,W,X</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Withdrawn courses after seventh class day</td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>

The University’s Grade Scale is available through the Office of the Registrar.

Failure to Maintain Satisfactory Academic Progress
Failure to maintain one or more of the requirements outlined above will result in financial aid ineligibility. Students will be notified via University email of their failure to meet satisfactory academic progress requirements and subsequent aid suspension.

Students can regain their financial aid eligibility once they have raised their cumulative GPA to 2.00 and have earned hours to put them back on pace to graduate (earned 67% of cumulative hours attempted) within the maximum time frame. Students can also regain financial aid eligibility if they have an appeal approved based on the process below.

Denied Appeals/Students Who Choose Not to Appeal
If an appeal is denied, they will be notified via University email and remain ineligible for financial assistance until satisfactory academic progress is reestablished. Appeals will not be accepted after 10 days and the student will be responsible for all charges on their University account. Financial aid will not be provided retroactively.

Appeal Process
At the time of notification regarding failure to meet satisfactory academic progress requirements, the student will have 10 days to submit a written appeal outlining mitigating circumstances. The appeal letter should include the following:

- Mitigating circumstances that prevented the student from meeting the requirements of academic progress (e.g., death in the family, student illness or injury, other personal circumstances). Mitigating circumstances do not include: withdrawing from classes to avoid failing grades, pursuing a second major or degree, etc.
- Documentation that supports the student’s basis for the appeal
- Steps the student has taken/will take to ensure future academic success
- Anticipated graduation date
- If it is not possible for the student to achieve satisfactory academic progress with one successful probationary semester, the student must also submit an academic plan signed by their academic advisor. This plan should outline the student's academic goals for each semester (e.g. number of credit hours and cumulative GPA) that will enable the student to meet the requirements of academic progress at a specified future point in time.

Upon receipt of all completed appeal materials, the student will be considered for a probationary semester of financial aid in order to reestablish satisfactory academic progress. Students whose appeal is approved will be placed on financial aid probation. Academic progress will be evaluated at the conclusion of each enrolled term for students on financial aid probation.

Students who fail to meet the requirements for academic progress for their probationary semester or do not complete the requirements of their academic plan will again be ineligible for financial aid and subject to the appeal process.

Students who meet the requirements for academic progress for their probationary semester will resume good standing and again be evaluated at the conclusion of the following spring semester.

To Table of Contents
Center for Social Concerns

The Center for Social Concerns brings students, faculty, and community partners together to address community needs through analysis and reflection that leads to ethical action and social relationship. Its extensive domestic and international programming provides students with opportunities for community-based learning, community-based research, and service addressing issues of poverty and injustice.

- Students examine social, moral, and ethical issues from various perspectives through the lens of Catholic Social Teaching.
- The Center offers three types of courses: social concerns seminars (1 credit), summer service-learning projects (3–4 credits), and community-based learning courses across the disciplines (3 credits). All courses can be found using the class search (ZCSC) course attribute filter.
- Students interested in community-based research work with faculty and community partners, as part of an existing course, an internship, a senior thesis, or special studies class on a research project that aims to generate social action and social change.
- Students participate in leadership development and senior transition programs and seminars to help with career discernment (currently 10 percent of seniors enter a year or more of full-time service or civic engagement following graduation).
- The Center cosponsors justice education events, workshops, and panel discussions with campus partners.
- The Center partners with over 60 social service and advocacy organizations to offer students diverse volunteer and learning opportunities.
- Visit the Center for Social Concerns at http://socialconcerns.nd.edu/

COURSE DESCRIPTIONS

All of the courses associated with this academic program can be found online at registrar.nd.edu/students/class_search.php. The scheduled classes for a given semester may be found by clicking on “Class Search” and selecting the subject Center for Social Concerns. Course descriptions can be found by clicking on the subject code and course number in the search results.

Reserve Officers Training Corps Programs

The University of Notre Dame offers the opportunity to combine the pursuit of an academic degree with earning an officer’s commission in either the United States Army, Navy, Marine Corps, or Air Force. Students enrolled in any of the colleges of the University may participate in the Reserve Officers Training Corps (ROTC). Selection of courses in the student’s academic major is independent of those selected for ROTC.

The College of Arts and Letters and the College of Business Administration accept a maximum of 12 free elective credits from the 30000- and 40000-level military sciences only. Credit from the 10000- and 20000-level courses does not count toward the degree requirements and must be subtracted from the total number of degree credits listed on the transcript.

In the College of Engineering, ROTC students who complete the ROTC program are permitted a maximum of six credits of upper-level air, military or naval science as substitutes for specified degree requirements determined by the department. Not more than three credits may be substituted for history or social science. All air, military or naval science credits not so substituted are not credited toward degree requirements in programs.

In the School of Architecture, ROTC students are permitted a maximum of six credits of 40000-level air, military or naval science courses as substitutes for electives within the 163 credit hours required for the bachelor of architecture degree.

The College of Science will count a maximum of six credit hours of upper-level (30000- or 40000-level) ROTC courses toward the 124-credit-hour requirements. These courses will be counted as free electives.

MILITARY SCIENCE

Chair and Professor:
Lieutenant Colonel Christopher D. Pratt

Commandant of Cadets:
Master Sergeant Jefferey D. Crossman

Assistant Professors:
Captain Kyle B. Vonderheide
Captain Timothy K. Wilson

Instructors:
Sergeant First Class Peter A. Bracket

As one of the premier Army ROTC programs in the country, the department’s mission is to educate, train, develop, and inspire participants to become officers and leaders of character for the U.S. Army and the nation. The program does this through a combination of classroom instruction, leadership labs, and experiential learning opportunities focused on developing the mind, body, and spirit of participants. These opportunities are designed specifically to enhance character and leadership ability in the Cadets and to allow them to practice the essential components of leadership: influencing, acting, and improving. Participants become members of the Fighting Irish Cadet Battalion and complete a planned and managed sequence of classroom courses and practical exercises intended to develop each participant into what an officer must be—a leader of character, a leader with presence, and a leader of intelligence—to enable them to reach their full potential as individuals and as effective leaders of groups. The program affords students an excellent opportunity to serve and focuses on the role of Army officers in the preservation of peace and national security, with particular emphasis placed on ethical conduct and the officer’s responsibility to society to lead, develop themselves and others, and achieve success. The experience culminates ideally with participants earning commissions as second lieutenants in the Active Army, Army Reserve, or Army National Guard. As an organization committed to lifelong learning, participants may elect to pursue one of the Army’s numerous opportunities for follow-on postgraduate study as well.

Student Awards and Prizes

The Dixon Award. Named in memory of an alumnus of the Notre Dame Army ROTC program, annually recognizes an outstanding senior who has exemplified the highest professionalism, dedication, and service to the Fighting Irish Battalion.

George C. Marshall Award. An award given annually to the top Cadets in Cadet Command. Winners participate in a national seminar with some of the nation’s highest ranking leaders in Washington, D.C.

Commander’s Award. A U.S. Army saber is presented annually to the Cadet who displays the Notre Dame Ethos of “God, Country, Notre Dame” and serves as a Mentor for the junior Cadets in the program.

Patrick Haley Award. A Notre Dame wristwatch presented annually to the Cadet who displays the Notre Dame Ethos of “God, Country, Notre Dame” and serves as a Mentor for the junior Cadets in the program.

Dr. Michael McKee Award. Named in honor of an alumnus of the Notre Dame Army ROTC program, a U.S. Army saber is presented annually to an outstanding member of the Army ROTC Club.

William T. Brooks Award. Named in memory of a student and contributor to Notre Dame Army ROTC, a commemorative knife is presented annually to an outstanding member of the Irish Rangers.

Numerous other awards are presented annually by various local and national organizations to recognize excellence in academic achievement and military aptitude.

COURSE DESCRIPTIONS

All of the courses associated with this academic program can be found online at registrar.nd.edu/students/class_search.php. The scheduled classes for a given semester may be found by clicking on “Class Search” and selecting the subject Military Science (Army ROTC). Course descriptions can be found by clicking on the subject code and course number in the search results.
NAVAL SCIENCE

Chair and Professor:
CAPT John Carter, USN
Associate Professor:
CDR Charles Dittrbenner, USN
Assistant Professors:
Maj M. Regan Jones, USMC
LT Sean Bakey, USN
LT Jennifer Malherek, USN
LT Brett Williams, USN
LT Nathan Miller, USN

The mission of NROTC is to educate, train, and screen officer candidates to ensure they possess the moral, intellectual, and physical qualities for commissioning and the leadership potential to serve successfully as company grade officers in the U.S. Navy and Marine Corps. The NROTC Scholarship Program fills a vital need in preparing mature young men and women for leadership and management positions in an increasingly technical Navy and Marine Corps.

Non-NROTC students should consult with their college dean or advisor to determine if a Naval Science course will count toward graduation.

Additional NROTC Curriculum Requirements. In addition to the Naval Science requirements, NROTC scholarship students are required to complete other specified university courses. These additional requirements are taken as a part of the student's field of study or as degree electives, depending upon the college in which enrolled. Students will be notified of such requirements prior to joining the NROTC Program.

Student Organizations and Activities. All NROTC students are integrated into the Midshipman Battalion organization. In addition to participation in all other university organizations and activities for which eligible, NROTC students may participate in specific NROTC organizations and activities such as the Color Guard, intramural athletic teams, the NROTC Unit newspaper and yearbook, and the planning of the Naval Leadership Weekend national conference.

Student Awards and Prizes.
The Chief of Naval Operations Distinguished Graduate Award. The annual recognition of the top graduating midshipman.

The Edward Eashy-Smith Award. A sword is awarded to one of the top graduating Navy or Marine Option Midshipmen who exemplified the characteristics of a naval officer while filling one of the senior midshipman staff positions during the past year.

The 1st LT Vincent J. Naimoli, USMC Award. A sword is awarded to one of the top graduating Navy or Marine Option Midshipmen demonstrating 110 percent dedication and effort in academic achievement, student activities, and leadership.

The George C. Strake Award. A sword is awarded to the top graduating Navy Option Midshipman for his or her dedication, leadership, esprit, and positive attitude throughout the four years at Notre Dame.

The Colonel Brian C. Regan, USMCR Award. A sword is awarded to the top graduating Marine Option Midshipman for his or her superior leadership and esprit de corps throughout the four years at Notre Dame.

The Captain John A. McGurty Jr., USNR, Award. A sword is awarded to one of the top graduating Navy or Marine Option Midshipmen who exemplified the characteristics of a naval officer while filling one of the senior midshipman staff positions during the past year.

The Chicago Navy League Award. A sword is awarded to one of the top graduating Navy Option Midshipmen who displayed outstanding academic achievement, superior military bearing, and exceptional leadership and physical fitness throughout their four years at Notre Dame.

Numerous other awards are presented annually by various professional and patriotic organizations to recognize excellence in academic achievement and military aptitude.

COURSE DESCRIPTIONS
NROTC students take a total of 22 credits of Naval Science, one course each semester. All of the courses associated with this academic program can be found online at registrar.nd.edu/students/class_search.php. The scheduled classes for a given semester may be found by clicking on “Class Search” and selecting the subject Naval Science (ROTC). Course descriptions can be found by clicking on the subject code and course number in the search results.

AEROSPACE STUDIES

Chair and Professor:
Colonel Frank J. Rossi, USAF
Assistant Professors:
Major John H. Pack, USAF
Captain John M. Hofmann, USAF

The Air Force Reserve Officer Training Corps (AFROT) Detachment 225 is a premier educational and training program designed to give men and women the opportunity to become world-class leaders as Air Force officers while completing an undergraduate four-year academic degree. The AFROT Program develops leadership and management skills students need to become effective and trusted leaders in the 21st century. In return for challenging and rewarding efforts, we offer the opportunity for advancement, education and training, and a sense of pride that comes from serving in the United States Air Force. Upon completion of the Air Force ROTC program students are commissioned as second lieutenants in the United States Air Force. Following commissioning there are excellent opportunities for additional education in a wide variety of academic fields.

Student Organizations and Activities. All Air Force ROTC cadets are given opportunities to participate in a variety of extracurricular activities to develop their leadership skills. Activities available for AFROTC cadets include the Arnold Air Society (AAS), oriented toward service to the local community, AFROTC Career Day, Veterans Day Vigil, Junior Parents weekend, annual Flying Irish Basketball Tournament, intramural and varsity athletics, University bands and cheerleading activities as well as the Honor Guard. The Honor Guard performs at campus and community functions while developing individual drill proficiency. Foreign language programs, engineering programs, and cultural leadership studies are occasionally available during the summer.

Student Awards and Prizes.
The Notre Dame Air Force Award, and Air Force officer's sword, are presented to the top graduating senior in Air Force ROTC.

The Niel Dube Award is presented to the senior class Arnold Air Society member who has contributed the most to furthering the ideals and goals of the society within the University and local community.

The Paul Robrige Award, named in memory of an alumnus of the Notre Dame ROTC program, annually recognizes the top pilot candidate in the Professional Officer's course.

Other awards are sponsored by various local and national organizations to recognize excellence within the cadet corps.

COURSE DESCRIPTIONS
All of the courses associated with this academic program can be found online at registrar.nd.edu/students/class_search.php. The scheduled classes for a given semester may be found by clicking on “Class Search” and selecting the subject Air Force-Aerospace Studies. Course descriptions can be found by clicking on the subject code and course number in the search results.

* Leadership Laboratory is open to students who are members of ROTC or who are eligible to pursue a commission as determined by the professor of Aerospace Studies.
Study Abroad

Notre Dame International’s Study Abroad offers over 40 study abroad programs in more than 20 countries, during both the academic year and summer.

For over 50 years, Notre Dame has made it possible for students to earn credits toward graduation by participating in study abroad programs. Study in another tradition, direct personal experience of another language and culture, and travel all broaden and deepen the liberal education of the whole person to which the University has always been committed. Study abroad programs are one of the many opportunities open to students seeking an international experience that will complement their study plan.

Without delaying graduation, international experiences make a unique contribution to the excellence of liberal education in the undergraduate colleges and frequently have proved an asset in career development. Students earn Notre Dame credit for courses taken in Notre Dame programs and their grades are included in the Notre Dame GPA. During the semester abroad, students will carry a course load of at least 15 credits.

Qualified students from all undergraduate colleges may apply to spend a semester or a year abroad in one of our study abroad programs. Participation is typically during the junior year, but some programs are designed to accommodate sophomores as well.

Admission into most of the programs can be quite competitive and students are encouraged to apply to more than one program. Offers of admission are made in accordance with program requirements, at the discretion of the Study Abroad staff in consultation with faculty and staff of the University. Students considering more than a single semester or academic year program should carefully review their majors and minors to ensure that such study does not delay the completion of graduation requirements. Students who have previously participated in or been selected for a study abroad program may receive a lower priority in the selection process of a second program.

Participation in a summer study abroad program does not affect a student’s application to a semester or yearlong program.

ACADEMIC YEAR PROGRAMS

Notre Dame offers semester and yearlong study abroad programs around the world. In Europe, students may apply to go to Angers or Paris, France; Berlin or Heidelberg, Germany; Athens, Greece; Dublin, Ireland; Bologna or Rome, Italy; Alcoy or Toledo, Spain; Geneva, Switzerland; or London, Norwich, St. Andrews, or Oxford, United Kingdom.

For a Latin American experience, undergraduates can study in Salvador da Bahia or Sao Paulo, Brazil; Santiago, Chile; or Puebla, Mexico. Students also have the option to participate in programs in Fremantle or Perth, Australia; Jerusalem, Israel; Amman, Jordan; Istanbul, Turkey; Dakar, Senegal; or Kampala, Uganda. Notre Dame also offers semester-long programs in Shanghai, Beijing, and Hong Kong, China; Nagoya and Tokyo, Japan; in Seoul, South Korea; in Singapore; and in Moscow, St. Petersburg, and Vladimir, Russia.

Additional programs offered in 2016–17 include the Global Gateway Seminars for incoming freshmen. Global Business Scholars program offers a semester of study in Milan, Italy and a semester in Singapore for selected business students. The Rome International Scholars program offers a semester of specialized study in Rome and funding for disciplinary study and/or an internship during the summer following the semester of study. Kennedy Scholars in the London Undergraduate Program undertake independent research and a research seminar course in preparation for a senior thesis.

A new semester option for Notre Dame students is the opportunity to petition for a program not listed above that best meets the specific academic needs of a student. Check the Study Abroad website for the details of the Study Abroad Petition program.

SUMMER PROGRAMS

Summer programs for students who have completed at least one year of studies at Notre Dame are available in London, United Kingdom; Dublin, Ireland; Toledo, Spain and Jerusalem, Israel. Other summer programs include China Business & Culture; China Summer Engineering; China Summer Language; and an African Peace and Conflict Studies program in Uganda and Rwanda.

Summer programs continue to be offered in Cape Town, South Africa; Corinith, Greece; and Rome, Italy. New summer business programs are being conducted in Sao Paulo, Brazil and in Kyoto Japan. New programs in Berlin and Russia provide history and culture in an academic context. The locations of the faculty-led summer programs may vary from year to year.

Additional programs abroad are sponsored by the School of Architecture in Rome (yearlong) and by the College of Engineering in Dublin (summer), London (summer), Rome (summer), and Alcoy, Spain (summer).

Candidates for Alcoy, Amman, Angers, Beijing, Berlin, Bologna, Dakar, Geneva, Heidelberg, Nagoya, Paris, Puebla, Rome, Russia, Salvador da Bahia, Santiago, Sao Paulo, Shanghai, Tokyo, and Toledo study abroad programs must demonstrate skills in the language of the country sufficient to make their period of residence and study fully profitable. These skills may be developed through intensive or other language courses in the freshman or sophomore year. Previous study of the language in high school is mandatory for some programs.

Instruction is in Arabic and English in Amman; Chinese and English in Beijing, Shanghai, and Hong Kong; English in Athens, Dublin, Freiburg, Jerusalem, London, Norwich, Oxford, Perugia, Seoul, Singapore, and St. Andrews; French in Angers and Paris; French and English in Dakar; German in Berlin and Heidelberg; Italian in Bologna; Italian and English in Rome; Japanese and English in Nagoya and Tokyo; Portuguese in Salvador da Bahia and Sao Paulo; Russian in Russia; and Spanish in Alcoy, Puebla, Santiago, and Toledo.

Students earn Notre Dame credit for courses taken abroad and grades are included in the Notre Dame GPA. Some courses taught abroad fulfill core University requirements such as fine arts, history, literature, philosophy, social science, or theology. Students are required to take 15 credit hours per semester in the study abroad programs.

An approved social science course in the field of anthropology, psychology, or sociology taken abroad will complete a behavioral science requirement in the Mendoza College of Business.

For major credit in any college department, the student must consult with the departmental advisor. Study abroad programs may sometimes be cancelled due to circumstances beyond the control of the University.

Students with compelling academic reasons for participating in non-Notre Dame programs are eligible to apply for a leave of absence for study in a program offered by another college or university. They may not, however, take a leave of absence to attend international programs at sites (schools) where Notre Dame offers its own study abroad programs.

Course descriptions for hundreds of courses taught in the following programs are available on the Study Abroad website under Courses Abroad.

AUSTRALIA: FREMANTLE PROGRAM

Semester
University of Notre Dame Australia

Students in the colleges of business and arts and letters enroll in courses at the University of Notre Dame Australia (NDA) through this program. Students enroll in five courses (15 credits) either semester in any combination depending on their major/college requirement and individual need.

A list of course offerings for the fall normally is available around the end of March and for the spring term around the end of September.

A listing of approved courses offered in previous semesters is available on the Study Abroad website. Students in the Fremantle program are required to take an Australia-related course (3 credits). In the fall term, business students must also take BAUD 34120 Business in Asia, also cross-listed as ECON 34781 (3 credits).
AUSTRALIA: PERTH PROGRAM
Semester Program
University of Western Australia

This program is designed for juniors and is open to students from the colleges of Engineering and Science. The program will also admit qualified Arts and Letters students, especially ALPP and anthropology majors. Engineering students may take a technical elective course at the University of Western Australia (UWA) during the fall semester. A spring semester option is possible for students whose schedule can accommodate it. All students should carry a minimum of 30 UWA points, which translate to about 12 to 15 Notre Dame credits. Course offerings are available on UWA's website.

BRAZIL: SALVADORE DA BAHIA PROGRAM
Semester Program
Universidade Católica do Salvador

Study Abroad offers this program in conjunction with the Council for International Educational Exchange (CIEE). The program begins with a five-week, intensive language and culture program (ILCP). During the ILCP, students are required to take an intensive Portuguese language class and the interdisciplinary core course titled "Contemporary Brazil." Students who are near-native speakers of Spanish may be placed in a "Portuguese for Spanish Speakers" course (offered based on enrollment).

For the remainder of the semester, students must enroll in two required courses: "Portuguese Language" and "Culture and Society: Bahia and Brazil." The remainder of the course load (two or three courses) is drawn from a combination of CIEE courses and/or the wide range of courses offered at the host university.

BRAZIL: SÃO PAULO PROGRAM
Semester Program
Pontifícia Universidade Católica de São Paulo

This program is offered in conjunction with CIEE. The program begins with a five-week, intensive language and culture program (ILCP). During the ILCP, students are required to take an intensive Portuguese language class and the interdisciplinary core course titled "Contemporary Brazil." Students who are near-native speakers of Spanish may be placed in a "Portuguese for Spanish Speakers" course (offered based on enrollment). The São Paulo program is open to qualified students in all majors, but may be of significant interest to students studying Portuguese, Brazilian Studies, Business, Latin American Studies, Poverty Studies, or Sociology. For the remainder of the semester, students must enroll in two required courses: "Portuguese Language" and the CIEE core course "Contemporary Brazil." In addition to the two required CIEE courses, students choose two or three electives drawn from the wide range of courses offered at PUC for which they meet the prerequisites.

CHILE: SANTIAGO PROGRAM
Semester Program
Pontifícia Universidade Católica (PUC)

All participants in the Chile program begin the semester with a two-to-three week language and cultural immersion pre-program in rural Chile.

After the pre-program, students travel to Santiago, Chile where they enroll in classes at the Pontifícia Universidade Católica (PUC). Students enroll in two or three classes at the PUC in addition to two mandatory core courses: "Spanish for Foreigners," and "Chilean Politics and Society." Students may also choose to apply to participate in a service-learning course, "Approaches to Poverty and Development" taught at Universidad Alberto Hurtado.

All students live with host families in Santiago who are carefully selected by Notre Dame's on-site staff. The fall semester runs from mid-July through mid-December, and the spring program runs from early February through mid-July.

CHINA: BEIJING PROGRAM
Semester or Academic Year
Peking University

This option is offered in conjunction with the Council for International Educational Exchange (CIEE). Students may enroll in this intensive Chinese language program at Peking University. Organized group activities complement the classroom experience. All classes are taught in Mandarin Chinese with elective area studies courses offered in English each semester. The Beijing program is strongly recommended for Chinese majors. Detailed program information is available at the Notre Dame International Study Abroad office, 105 Main Building or by visiting the CIEE website.

CHINA: HONG KONG PROGRAMS
Semester or Academic Year
Chinese University of Hong Kong (CUHK)

The CUHK program is an exchange program open to juniors and is particularly suited to students in studying the humanities, business, engineering, or science. CUHK is a bilingual bicultural institution with local and international students and scholars. The program is suited for students in arts and letters, business, engineering, or science. No Chinese language is required. All courses (except those offered by the Department of Chinese) are taught in English. The University of Hong Kong is a dynamic, comprehensive university of world-class standing and a leading international institution of higher learning in Asia. With a student body of over 22,000 undergraduates and postgraduates, it has a bilingual, bicultural population of local and international students and scholars.

CHINA: SHANGHAI PROGRAM
Semester or Academic Year
East China Normal University

Study Abroad offers this option in conjunction with the Council on International Educational Exchange (CIEE). The Shanghai Program at East China Normal University is intended for students who wish to accelerate their acquisition of Chinese and is strongly recommended for all Chinese majors and minors. All students must take a Chinese-language course and other courses on Chinese history, culture, and politics offered in English. Organized group activities complement the classroom experience. Detailed program information is available at the Study Abroad website or at CIEE's website.

DENMARK: COPENHAGEN PROGRAM
Semester Program
Dis Danish Institute for Study Abroad (DIS)

DIS offers students engaging and challenging coursework in a variety of programs enriched by faculty who teach what they do, field studies, hands-on learning opportunities, and study tours across Europe. Cultural engagement opportunities integrate students into the local culture and students gain academic knowledge and intercultural skills to prepare for a globalized world. Students in pre-professional and science studies will find a variety of study programs with DIS. All courses are taught in English.

Visit the Study Abroad office and website for additional information.

FRANCE: ANGERS PROGRAM
Semester or Academic Year
Université Catholique de l'Ouest

The Angers program is open to sophomores and juniors in all colleges. Many Angers students decide to pursue a first or second major in French. Declared and prospective French majors must consult with the Department of Romance Languages and Literatures before they apply for the program. An academic year...
of two semesters begins after a month-long language-intensive summer session, the préstage. Most Angers FRENCH: PARIS PROGRAMS

Spring Semester or Academic Year
Univeristé Paris Diderot

The University of Notre Dame has an exchange program with the Université Paris Diderot (Paris 7). Offered as a yearlong or a second-semester program, the Paris program is limited to students with a high level of French, an excellent grade-point average, and a major or supplementary major in French. Students will take courses in French on subjects in the arts, cinema, French language, and literature.

Institut d’Études Politiques de Paris

In 1999, the University of Notre Dame began an exchange program with the Institut d’Études Politiques de Paris (Sciences-Po). Offered as a yearlong or a second-semester program, the Paris program is limited to students with a high level of French, an excellent grade-point average, and a major in history or a social science. Students will take courses in European economics, politics, sociology, and history, and in French language. Successful completion of a year of study results in a certificate from Sciences-Po, which is widely recognized in Europe and the United States.

GERMANY: HEIDELBERG PROGRAM

Semester or Academic Year
Heidelberg Universität

This program provides in-depth study of German language, culture and society. The program begins with a four-week intensive course “Aspects of Society and Culture in Contemporary Germany” which provides the students with at least 60 hours of intensive language training and excursions to various cultural institutions around Heidelberg. Heidelberg Universität offers a wide range of courses in the humanities, social sciences and natural sciences. All coursework will be in German. Applicants should have a minimum of a 3.0 GPA and at least two years of college-level German (or the equivalent).

GREECE: ATHENS PROGRAM

Semester or Academic Year
College Year in Athens

Sophomores and juniors study with other international students at the College Year in Athens (CYA). Classes are taught in English and the program is organized in two curricula: Ancient Greek Civilization and East Mediterranean Area Studies. Through the Ancient Greek Civilization track, students amplify their knowledge of ancient Greece and deepen their understanding of Greece’s fundamental contribution to the development of Western civilization. The East Mediterranean Area Studies curriculum focuses attention on Southeast Europe, West Asia, and the Middle East in the time period between the founding of Constantinople (A.D. 330) to the present. It is an area of unusual importance in geopolitics, where Europe intersects with Asia and Africa and one whose problems and complexities, rooted in the past, pique the interest of students of history, politics, and international affairs.

HUNGARY: BUDAPEST PROGRAM

Semester

In coordination with St. Olaf College, Budapest Semesters in Mathematics (BSM) provides a unique opportunity for North American undergraduates. Through this program, students and computer science majors in their junior year may spend a semester in Budapest and study under the tutelage of eminent Hungarian scholar-teachers. Instruction is in English.

IRELAND: DUBLIN PROGRAMS

Semester or Academic Year
University College Dublin (UCD), Trinity College (TCD)

The Dublin program is open to juniors in arts and letters, business, engineering, and science for a semester or a year at University College Dublin and for a semester or year at Trinity College. Students will enroll in courses in their majors at one of the two Universities and will also take courses at Keough-Naughton Notre Dame Center. For course offerings at the Irish universities, check the Study Abroad website.

The “Introduction to Ireland” course taught at Keough-Naughton Notre Dame Center is mandatory for all program participants. The Center may also offer an Irish Literature course during certain semesters. Students are required to take 15 credits per semester of study and will live in dormitories at the respective Universities with Irish and other international students.

ISRAEL: JERUSALEM PROGRAM

Spring Semester

Tantur Ecumenical Institute

Notre Dame’s program in Jerusalem is located at Tantur on a hilltop on the road from Jerusalem to Bethlehem. Students will take two required courses at Tantur focusing on ecumenism and interreligious dialogue, and a philosophy course. Students will choose remaining classes from local universities with courses offered in English. Arabic language classes are also available.

The semester program also includes numerous excursions throughout Israel that enhance the material covered in the classroom.

ITALY: BOLOGNA PROGRAM

Semester or Academic Year
University of Bologna

Students matriculate at the University of Bologna (UniBo) through Notre Dame’s association with the Bologna Consortial Studies Program (BCSP), administered by Indiana University. Typically, students are juniors at the time of participation and have completed the equivalent of four, preferably five, college-level Italian courses.

Students attend a four-week preparatory pre-session in September before beginning classes at UniBo. Organized group activities complement the classroom experience.

Direct matriculation in the University of Bologna, one of Italy’s premier universities, combined with living in apartments with Italian students, provides a genuine experience of Italian university life and contributes to the attainment of oral and written fluency in Italian.

ITALY: ROME ICCS

Semester

The Intercollegiate Center for Classical Studies (ICCS)

A select number of Notre Dame students can participate for one semester in the Intercollegiate Center for Classical Studies, a consortium of 90 colleges and universities under the management of
Study Abroad

Duke University. The ICCS provides students with an opportunity in Rome to study ancient history and archaeology, Latin and Greek language and literature, and art history. Applicants must be at least sophomores majoring in classics, classical history, or archaeology, or must be art history majors with a strong classical background. Proficiency in Italian language is not required. Participants are nominated by members of the Notre Dame Classics department. Acceptance into the Rome-ICCS Program is highly selective.

ITALY: ROME PROGRAM

Semester or Academic Year
John Cabot University (JCU)

Students from all colleges can enroll in classes at John Cabot University, an American university in Rome, which offers courses in art, business, classics, government, history, literature, philosophy, theology, and psychology. All courses are taught in English with the exception of Italian language classes. Many JCU courses have been approved by Notre Dame departments for major credit; however, students must consult with their department to confirm courses for their major and minor. All students are required to have at least one year of college-level Italian or the equivalent prior to departure and to take one Italian-language course during the semester or year in Rome. For a listing of all courses offered at John Cabot, check the Study Abroad website.

Additionally all students are required to enroll in one course “All Roads Lead to Rome” taught at Notre Dame’s Global Gateway in Rome. This course is taught by ND faculty on site.

JAPAN: NAGOYA PROGRAM

Semester or Academic Year
Center for Japanese Studies, Nanzan University

The Nagoya program is designed for Japanese language majors. Students are required to take an 8-credit Japanese course at the appropriate level each semester. Students choose their other courses in the areas of Japanese society, literature, religion, business, economics, and history. Except for Japanese language classes, all courses are taught in English, and the subject matter is often placed in a larger Asian context.

JAPAN: TOKYO PROGRAMS

Spring Semester
Sophia University

Study Abroad offers this option in conjunction with the Council on International Educational Exchange (CIEE). The Tokyo Program is open to sophomores and juniors who have completed a semester of Japanese. All students must take a Japanese language course and can choose from a wide variety of other courses offered in English including business, economics, history, literature, philosophy, and sociology. Students earn Notre Dame credit for courses taken in Tokyo, and grades are included in the Notre Dame GPA. Organized group activities complement the classroom experience. Detailed program information is available at CIEE’s website.

Spring Semester
Keio University

In this exchange program, students may choose to enroll in either the Japanese Language Program (JLP), with a focus on intensive language and culture studies, or the Keio International Program (KIP), with access to content classes taught in English. This comprehensive program is specially designed for exchange students who want to study about Japan and East/Southeast Asia in English and to take Japanese language courses as well. Students with advanced Japanese proficiency may take full-time undergraduate courses taught in Japanese.

JORDAN: AMMAN PROGRAM

Academic Year or Semester
Princess Sumaya Technical University

This program is offered in conjunction with the Council for International Educational Exchange (CIEE). Students enroll in this Arabic language program at the Princess Sumaya University of Technology. Other study tracks include Diplomacy and Policy Studies and Language and Culture. Housing options include living with a host family or in an apartment. Organized group excursions complement the classroom experience. Arabic language classes are required with elective area studies courses offered in English each semester. The Amman program is recommended for Arabic majors. Detailed program information is available at the Notre Dame International Study Abroad office, 105 Main Building or by visiting the CIEE website.

MEXICO: PUEBLA PROGRAM

Semester or Academic Year
Universidad Popular Autónoma del Estado de Puebla Tecnológico de Monterrey

Students may participate in the program for an academic year or a semester. The program is open to students from all colleges at Notre Dame with the equivalent of four semesters or better in Spanish language. Notre Dame offers a pre-medical program in the fall semester, which includes the first semester of General Physics (taught in English) and internships with Mexican doctors. Fall students will study at the Universidad Popular Autónoma del Estado de Puebla (UPAEP). Spring students may take courses at the Tec de Monterrey-Puebla and will also have a variety of internship opportunities with a focus on business or the humanities. All participants in the Mexico program are required to enroll in one course with a focus on Mexican history or culture. Students are required to take 15 credit hours per semester. Excursions are coordinated by on site ND staff and students live with a host family.

MOROCCO: RABAT PROGRAM

Semester
School for International Training (SIT)

SIT offers three programs specific to Morocco: Field Studies in Journalism and New Media; Migration and Transnational Identity; and Multiculturalism and Human Rights. Special features of each program include an Independent Study Project, living with a host family, and deep cultural and academic engagement through educational excursions. Arabic language study is included.

RUSSIA: MOSCOW, ST. PETERSBURG, AND VLADIMIR PROGRAMS

Semester or Academic Year

Students may enroll in a Russian language and area studies program through the American Council of Teachers of Russian. They may choose to study in Moscow, St. Petersburg, or Vladimir for one semester or an academic year. Students should have completed two years of Russian or the equivalent at the university level before participation. Participants take courses in grammar and contemporary Russian language, vocabulary, and conversation, as well as in literature, Russian and Soviet culture, history, politics, and the mass media. Course descriptions are available on the Study Abroad website.

RWANDA: KIGALI PROGRAM

Semester
School for International Training

The Post-Genocide Restoration and Peacebuilding program examines the origins of conflict in Rwanda and the challenges and opportunities of post-conflict restoration and peace building. The program combines course work with field study during which students identify topics of interest that they pursue for the final Individual Study Project. Special program features include living with a host family and deep cultural and academic engagement through educational excursions.

SENEGAL: DAKAR PROGRAM

Spring Semester
School for International Training (SIT)

Students who are interested or majoring in French/ Francophone studies, African studies, international relations, or development studies should consider the Dakar Program. The program offers the opportunity to live and study in a French-speaking West African country considered by many to be one of the most developed and democratic nations in that region. The Council on International Educational Exchange (CIEE) administers this program.

Classes are conducted at CIEE Study Center in Aminatou III neighborhood near restaurants, shops, cultural centers, and the largest public university in Senegal. Students live with a host family and study in French and English. Courses introduce them to
Senegalese society, and to consider such issues as education, women's roles, the impact of Islam, and development and globalization from a West African perspective. Applicants must be Junior-level students with at least 2 semesters of college-level French or equivalent and are required to take 15 credits with 3 required courses and 2 elective courses. Senegalese professors teach program courses. For a listing of courses offered, check the CIEE website.

SINGAPORE: SINGAPORE PROGRAM

Semester Program
National University of Singapore (NUS)

NUS offers a global approach to education and research, with a focus on Asian perspectives and expertise for select exchange students. NUS is a vibrant English-speaking comprehensive university with 16 faculties/schools offering courses from arts and social science to history and physics. A comprehensive English course list is announced every year and is available online for students to view. Areas of study include arts/design, business, engineering, English, foreign languages, global studies, health, humanities, journalism, law, life sciences, other physical sciences, social sciences, and sustainability. Students at this leading global university live on campus in the “halls.”

SOUTH KOREA: SEOUL PROGRAM

Spring Semester or Academic Year
Yonsei University

The Seoul exchange program is open to juniors. It is particularly suited to students in Korean Studies. Yonsei is a Christian private research institution with local and international students and scholars and is one of the oldest universities in South Korea. Yonsei receives students from over 290 academic institutions worldwide. Instruction is in Korean but students may also choose from many courses that are taught in English. While the majority of classes will be in Korean Studies, students may also choose courses from the various other faculties as well.

SPAIN: TOLEDO PROGRAM

Semester or Academic Year
Fundacion Ortega y Gasset

The Toledo program is open to sophomores and juniors in all majors. Students may study for a semester or academic year in Toledo and all courses are taught in Spanish. Students must take five courses through the Centro de Estudios Internacionales, Fundación Ortega y Gasset. A philosophy course is offered in the fall only; a theology course is offered in the spring. Credit-bearing internships are available in Toledo. Students may apply for internships in several areas, including government, the arts, social service, and communications. Credit toward a major must be approved by an advisor in the major department.

SWITZERLAND: GENEVA PROGRAM

Spring Semester
University of Geneva, CERN

Through Boston University's Geneva-Physics program, qualified students have the opportunity to study at the world's leading center for advanced research in particle physics. This program combines upper level coursework in quantum physics and electrodynamics at the University of Geneva (UNIGE), with directed research at the European Organization for Nuclear Research (CERN). Qualified candidates will be upper level Physics major with a minimum of two semesters of college-level French or the equivalent. Additionally, students will be required to enroll in and complete a scientific French-language tutorial during the semester prior to studying abroad. This is a very competitive program.

TURKEY: ISTANBUL PROGRAM

Semester or Academic Year
Koç University

This exchange program will be offered for in the first time in 2016–17. With world-renowned faculty, a wide selection of academic fields, and a diverse international student body, students will find a rich learning environment. All courses (except language courses) are taught in English. Students live on the spacious modern campus.

UNITED KINGDOM: LONDON UNDERGRADUATE PROGRAM

Semester
Notre Dame London Global Gateway

The London Undergraduate Program was initiated in 1981 as an Arts and Letters program and has since expanded to provide an opportunity for all Notre Dame undergraduates from the colleges of arts and letters, business, engineering, and science to spend one semester of their junior year in the London Undergraduate Program. While in London, students take classes offered by Notre Dame and British professors at the Notre Dame London Global Gateway near Trafalgar Square. Notre Dame's British faculty is selected to include experts whose work is internationally recognized in their fields. Students participating in the program live as a group in Conway Hall, a Notre Dame residential facility with supervision provided by the program. The semester enables students to combine serious academic study with the opportunity to live in Europe.

We encourage students interested in London studies for the regular academic year to direct further inquiries regarding location, staff, facilities, curriculum, and requirements to Study Abroad at 105 Main Building.

UNITED KINGDOM: NORWICH PROGRAM

Academic Year or Semester
University of East Anglia (UEA)

Notre Dame students can enroll in courses in UEA's American Studies Department, which offers a wide range of courses in American studies, American and English literature, and creative writing. The School of American Studies also has a special reputation in creative writing. The School houses the Arthur Miller Centre for American Studies, which hosts an annual international literary festival featuring notable writers. The UEA exchange program is open to juniors. English or American studies majors with a GPA of 3.0 or higher are eligible to participate. Other majors may be considered depending on student qualifications.

UNITED KINGDOM: OXFORD UNDERGRADUATE PROGRAM

Academic Year
New College and Oriel College, Oxford University

The Oxford Program provides juniors in the colleges of science, engineering, and arts and letters the opportunity to study at New College or Oriel College, Oxford for a full academic year. Application is by invitation only. New College and Oriel College dictate the fields in which they will accept students each year. It is required that candidates have an overall GPA of 3.7 at the time of application.

While there, students participate in Oxford's celebrated tutorial system: Students work individually
with a tutor to pursue their major courses of study in depth. Tutors are full-time faculty at Oxford. They include some of the most accomplished scholars in the world in their fields. Participating students live in New College or Oriel College accommodations. Detailed program information is available at the Notre Dame International Study Abroad office, 105 Main Building.

UNITED KINGDOM: ST. ANDREWS, SCOTLAND

Spring Semester
University of St. Andrews

The University of St. Andrews is renowned for its academic strength in numerous disciplines, but is particularly distinguished in Medieval Studies. Students with a major, minor, or concentration in Medieval Studies are encouraged to apply. The program is open to other majors including psychology and other disciplines for students with at least a 3.5 cumulative GPA. Students apply in the fall semester of their sophomore year to study at St. Andrews in the spring semester of their junior year. Qualified students are selected for interview based on applications, and participants are chosen by a selection committee for Study Abroad.

Moreau First Year Experience

"[Education] is the art of helping young people to completeness…”
from Blessed Basil Moreau, Christian Education

The Moreau First Year Experience, a two-semester course sequence, is required of all first-year students. Taught in both fall and spring semesters, and integrating academic, co-curricular, and residential experiences of new students, the course is organized around multiple foci including: orientation to university life, health and wellness, community standards and cultural competence, academic success, spiritual life, and discernment. Students actively engage with the experience through a variety of methods such as large lectures, on-line modules, and small group discussions. Use of ePortfolios helps students to reflect on their own holistic development in intellectual, cultural, pre-professional, and social pursuits.

The Moreau First Year Experience resonates within the larger framework of the charism of the Congregation of the Holy Cross to educate in the faith. Similarly, drawing on the pedagogy of Blessed Basil Moreau, it builds upon the Five Pillars of a Holy Cross Education:

- **Mind**: seeking understanding through the integration of faith and reason
- **Heart**: discerning one's personal vocation in service to the Church and the world
- **Zeal**: enkindling the desire to use one's gifts to boldly proclaim God's Word
- **Family**: embracing Christian community as the context for lifelong formation
- **Hope**: trusting in the Cross and God's promise of the kingdom

Through the Moreau First Year Experience, students come to understand the complexity and expectations of the Notre Dame community; take advantage of crucial academic and university resources; cultivate and maintain a healthy and well-balanced lifestyle; become aware of and engage with diverse communities; and think deeply about their academic, creative, professional and spiritual lives. The Moreau First Year Experience gives students the opportunity to begin forming life-long habits of the mind as well as an engagement in faith, service, arts, wellness, and community.

The First Year Experience is a collaborative effort between the First Year of Studies and the Division of Student Affairs. The course speaks to the imperatives of the University Strategic Plan for Undergraduate Education by ensuring that Catholic culture informs an integral part of new students’ education; by nurturing the formation of students’ mind, body, and spirit; by enriching the integration of students’ intellectual, extracurricular, and residential experiences; and by deepening students’ global engagement. The Moreau First Year Experience affirms the diversity and inclusion of the all first-year students.

**COURSE DESCRIPTIONS**

All of the courses associated with this academic program can be found online at registrar.nd.edu/students/class_search.php. The scheduled classes for a given semester may be found by clicking on “Class Search” and selecting the subject **First Year of Studies**. Course descriptions can be found by clicking on the subject code and course number in the search results.

**Information Technologies**

The Office of Information Technologies (OIT) provides robust and highly reliable technology services that support the University’s teaching, learning, research, scholarship, community service and administrative activities. Information technology services are designed to enable and empower, transform and benefit, and serve and support the entire Notre Dame community.

The OIT provides all Notre Dame students with an @nd.edu email account hosted by Google, file space and distributed printing services. Google also provides students with Google Apps and unlimited storage. For more information, visit: oit.nd.edu/google.

The ND Computer Service Center is a fee-for-service repair facility available to Notre Dame faculty, staff and students. The Service Center is an authorized provider for warranty repairs on Apple, Dell, and Lenovo computers. It also can provide non-warranty service on these and other computer brands as well as most HP monochrome laser printers. The Service Center offers competitive pricing, as well as quality service and faster turnaround time. It also offers computer rentals, so you can arrange to rent a laptop while your computer is being repaired. For information, go to: nd.edu/computerservicecenter.

Small, portable devices such as cameras, audio recorders, and microphones can be checked out for academic use from the OIT facility at 115 DeBartolo Hall. For details, visit: nd.edu/AVrental.

Each student living in undergraduate residence halls and graduate student residences has access to a dedicated ethernet jack, and wireless is available throughout campus. For more information, visit: nd.edu/network.

All residence hall rooms have standard cable television service. Additional digital cable television services, including HD, DVR and OnDemand, can be ordered directly from Comcast for an additional fee. For additional information, visit: nd.edu/cabletv.

A distributed cellular antenna system (DAS) in various campus locations provides enhanced coverage for major cellular telephone providers, including AT&T,
The Career Center

The Career Center provides undergraduate students with career coaching and career development services, self-assessments, workshops, presentations for academic departments, career fairs, and mock interviews, in addition to other services.

We encourage students to take ownership of their career direction, and be willing to devote the time and energy necessary to conduct a successful search for jobs, internships, fellowships, and/or the identification of graduate school programs.

OUR MISSION

“The Career Center at the University of Notre Dame is dedicated to the development and implementation of innovative programs and services that promote lifelong career management skills for students and alumni. By cultivating multifaceted partnerships/networks, our staff is committed to providing the resources for students to explore diverse career opportunities.”

OUR SERVICES

Individual Appointments

Our career coaches meet with students to assist with self-assessment, career decision-making, industry exploration, resumes, cover letters, job and internship searches, and interviewing. Walk-in appointments are available daily.

Assessment Tools

We offer the Myers-Briggs Type Indicator and Strong Interest Inventory to assist students in their career development process.

A sampling of workshops:

• Writing Your First Resume
• Preparing for the Career Fair
• Internship Search Strategies
• Effective Interviewing Strategies
• Job Search Beyond Campus
• Senior Transitions
• Making the Major Decision
• Career Fairs
• Fall Career Expo (Sept.)
• Engineering Industry Day (Sept.)
• Winter Career & Internship Fair (Jan./Feb.)
• Architecture Career Fair (March)

We also participate in multiple off-campus and virtual career fairs in Boston, Los Angeles, New York, and Washington DC.

On-Campus Recruiting and Go IRISH Database

Go IRISH is an online database that allows students access to employers’ job and internship descriptions, applications, on-campus recruiting/interviewing dates, and information sessions, in addition to on-campus career fairs.

Career Center Online Resources

Online subscriptions to career exploration resources and job and internship databases.

Career Experiential Education Programming

• Externship/Career Trek Programs
• Mentoring/Job Shadow Programs
• Arts and Letters Business Boot Camp
• Diversity Career Exploration Program

Career Courses


Internship Funding Program

This program is designed to aid students who wish to enter into an internship whose pay does not meet the standard cost of living. It provides a stipend to cover expenses incurred during the summer. The Career Center offers seven internship funding programs to students each school year.

Career Coaching Team

Director:
Hilary Flanagan
Career Engagement Coaching Team (Early Engagement)
    Bridget Kibbe, Career Engagement Manager
    Maureen Baska, Career Engagement Specialist
    Robyn Centilli, Career Engagement Specialist
    Stephanie Felicetti, Student-Athlete Careers Program Director
    Consuela Wilson, Career Inclusion Specialist
Career Exploration Coaching Team (Industry Specialists)
    Rose Kopec, Career Coaching Manager
    Lisa Bill, Career Operations Manager
    Lori Ann Edinborough, Career Funding Program Director
    Stephanie Felicetti, Student-Athlete Careers Program Director
    Anita Rees, Career Exploration Specialist
    Bob Richard, Career Exploration Specialist
    Ray Vander Heyden, Career Exploration Specialist

For additional information, contact:

The Career Center
248 Flanner Hall
Notre Dame, Indiana 46556
(574) 631-5200
careercenter.nd.edu
ndcps@nd.edu

Hours of Operation

• Monday-Friday: 8:00 am to 5:00 pm
• Walk-in hours available daily when regular classes are in session. Check out our website for the most up-to-date information.
Holy Cross Seminary Formation

The Old College undergraduate seminary program is housed in the original campus structure built in 1843 by Notre Dame’s founder, Rev. Edward Sorin, C.S.C. It welcomes high school graduates with a serious interest in exploring a vocation as a priest or brother in the Congregation of Holy Cross. With more than 50 men in formation at Notre Dame, Holy Cross is a growing, international religious community with 1,400 priests, brothers, and seminarians in 15 countries throughout the world.

Old College provides an introduction to religious life and ministry in Holy Cross through participation in daily Eucharist and prayer, service placements, spiritual direction, weekly community nights, retreats, and academic preparation, including courses in philosophy and theology. Students can select their own major and tailor the rest of their academic program according to their interests. Old Collegians take all classes with other Notre Dame students and are expected to actively participate in clubs, organizations, and other aspects of campus life. They are also encouraged to spend a semester or year abroad. Old College combines a challenging religious formation structure with a complete Notre Dame undergraduate experience.

Moreau Seminary, also located on the Notre Dame campus, is the primary formation house for the Congregation of Holy Cross in the United States. The one-year Postulant Program is a pre-novitiate year designed for those with a bachelor’s degree in any field who are prepared to discern a vocation to priesthood or brotherhood within vowed religious life. Postulants typically take 15 hours of philosophy and/or theology credits at the University each semester and have ministry placements supervised by seminary staff. Postulants reside at Moreau Seminary with other priests, brothers, and seminarians. They discern their vocation through spiritual direction and active participation in the community life of Moreau Seminary, which is centered around the daily celebration of the Eucharist and the Liturgy of the Hours. After returning from the Novitiate, newly professed seminarians begin their formal academic training in the Master of Divinity program.

Applicants to Old College and Moreau Seminary must be practicing Roman Catholics in good standing with the Church and of solid personal character, with a demonstrated commitment to apostolic ministry. Admission is selective, and personal interviews are required for acceptance into both programs. Tuition scholarship assistance is provided.

For additional information, contact:

Director, Office of Vocations
PO Box 541 Notre Dame, IN 46556
vocation.1@nd.edu
vocation.nd.edu
574-631-6385

Saint Mary’s College.

Because of the proximity and rich tradition common to Notre Dame and Saint Mary’s, the two institutions share many activities in the area of academics as well as social events, student organizations, and community service projects. The two institutions maintain a cooperative program permitting a limited number of courses to be taken at the neighboring institution.
The First Year of Studies

Dean: Hughes Page Jr.
Associate Dean: Holly Martin
Assistant Deans:
   Elly Brenner; Maureen Dawson; Jennifer Fox
Advisors:
   Steve Brady; James Creech; Laura Flynn; Don Lasalle; Erin Lemrow; Cecilia Lucero; Kasey Swanke; Mel Tardy; Leonor Wangenstein; Michelle Ware; Sean Wernert; Maryam Zomorodian

Special Support Services:
   Nahid Erfan; Phil Sakimoto; Lisa Walenceus

The First Year of Studies serves as the collegiate home for all incoming students, regardless of their intended program of study. Established in 1962, our role in the University is to provide the newest members of our Notre Dame family the opportunity to become thoroughly informed about the University and its educational opportunities prior to their making the very important decision of what their future college and major will be. For more than 50 years, the First Year of Studies has helped thousands of first-years become successful college students to find their unique calling at Notre Dame.

Discernment, the process of self-exploration, self-discovery, and self-definition is the heart of the Notre Dame first-year experience. All first-year students are asked to take a thoughtful approach to their educational path here, thinking deeply about how their skills and talents, their passions and faiths, and their visions for their futures should impact their curricular decisions. We hope that every student will use their first year as an opportunity to become self-directed in their personal, intellectual, and professional development.

Our full-time advising faculty provide support for our students as they complete the First Year Curriculum and make the challenging transition to college life; our advisors are teachers, showing students how to make sense of complex curricular requirements and place them in a meaningful perspective. We also provide programs and services that foster intellectual engagement and active learning, ensure academic development, and connect with the tremendous resources Notre Dame holds.

First Year Goals

1. Lay the intellectual foundations necessary for the pursuit of advanced academic work.
2. Cultivate both a sense of curiosity about the universe and a passion for learning with an appreciation for the intrinsic value of higher education and a sense of responsibility as a steward of the knowledge that is created, learned, and applied at Notre Dame.

A Notre Dame liberal education is more than just taking classes in the liberal arts. It is the purposeful cultivation of shared intellectual values that include an appreciation for a broad spectrum of intellectual endeavors, the capacity to think analytically about complex issues, and the ability to communicate effectively in a wide variety of contexts. It also fosters an ethical, moral, and spiritual awareness that we believe will lead our Notre Dame graduates to live responsible, compassionate, and ultimately meaningful lives.

University Requirements

All Notre Dame students, no matter what their major will be, must successfully complete a broad liberal arts curriculum in addition to completing the requirements of a particular major. This curriculum, established by the University Academic Council, is commonly referred to as our University Requirements:

- 1 course in University Seminar
- 1 course in Writing and Rhetoric
- 2 courses in mathematics
- 2 courses in science
- 1 course in history*
- 1 course in social science*
- 2 courses in philosophy*
- 2 courses in theology*
- 1 course in fine arts* or literature*
- 2 courses in Moreau First Year Experience

*A University seminar will fulfill one University Requirement in one of these disciplines.

Only courses marked as “Univ. Req.” via the online Class Search can be used to fulfill a University requirement.

The First Year of Studies serves as the collegiate foundation for a broad liberal education. It is the purposeful cultivation of shared intellectual values that include an appreciation for a broad spectrum of intellectual endeavors, the capacity to think analytically about complex issues, and the ability to communicate effectively in a wide variety of contexts. It also fosters an ethical, moral, and spiritual awareness that we believe will lead our Notre Dame graduates to live responsible, compassionate, and ultimately meaningful lives.

The First Year Curriculum

The First Year Curriculum is designed to ensure that all Notre Dame students begin their college career by learning the analytic, mathematic, and communication skills necessary for further work in their areas of greatest interest as well as to provide the foundation for a broad liberal education. Students are encouraged to select courses that will prepare them for advanced study in their present area of interest as well as to choose elective courses that help them explore subjects they have not had an opportunity to study in high school and/or those that will deepen their knowledge in disciplines with which they already familiar.

By the end of spring semester of the first year, students must complete:

* 1 University Seminar
* 1 Writing and Rhetoric course
* 2 semesters of mathematics
* 2 semesters of a science* or foreign language
* 1 additional University Requirement
* 2 program requirements or electives
* 2 semesters of Moreau First Year Experience

Note: Elective courses may be used to sample areas of study or to further general education.

*It is recommended that the science requirement be completed by the end of the sophomore year. Foreign language is not a University Requirement, but it is required by the College of Arts and Letters, the College of Science, and the School of Architecture.*

Entering students are expected to take the First-Year Curriculum of five courses per semester, along with the laboratories and tutorials that may accompany those courses, plus one Moreau First Year Experience course per semester. Additional one-credit courses offered through First Year of Studies, choir, band, social concerns seminars, and ROTC may also be added to the schedule each semester. The various colleges have restrictions on how many one-credit voluntary courses may be applied to the total number of credits required for graduation from the colleges.

Many of these elective courses satisfy University Requirements as well as requirements in the student’s intended major. These courses provide tools and experiences to help students clearly define their interests and goals while building a sound foundation of skills and knowledge for advanced study.

Descriptions and general recommendations concerning each of the courses in the First-Year Curriculum

To Table of Contents
are given in the following pages. In addition, complete instructions for making course selections and detailed course descriptions are in the First Year of Studies Academic Guide, which is available on the First Year of Studies website to incoming students in May.

Course 1—University Seminar/Writing & Rhetoric

University Seminar and Writing and Rhetoric are both University requirements that must be taken during the first year, one in the fall semester and one in the spring.

First-year University Seminar courses, or USEMs, are taught by some of Notre Dame's finest scholars, members of our teaching and research faculty who are leaders in their fields and passionate about their subjects. These courses exemplify the core values of a Notre Dame liberal education and mark a first step toward the goal of "intellectual excellence."

With a class size of no more than 18 people, this small, writing-intensive learning environment will engage students in meaningful discussions with their instructor and peers, introduce them to the rich tapestry of theory and research within a field, and show them some of the problems and issues involved in that discipline.

Each University Seminar requires students to write a minimum of 24 pages on a subject with the benefit of feedback from a leading scholar in the field and the chance to rewrite at least one paper. Many instructors nominate papers students produce in their classes for Fresh Writing, Notre Dame's journal of award-winning first-year essays.

2016 UNIVERSITY SEMINAR CATEGORIES

<table>
<thead>
<tr>
<th>Subject Area</th>
<th>Course Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fine Arts</td>
<td>13182</td>
</tr>
<tr>
<td>History</td>
<td>13184</td>
</tr>
<tr>
<td>Literature</td>
<td>13186</td>
</tr>
<tr>
<td>Mathematics</td>
<td>13187</td>
</tr>
<tr>
<td>Philosophy</td>
<td>13185</td>
</tr>
<tr>
<td>Social Sciences</td>
<td>13181</td>
</tr>
<tr>
<td>Theology</td>
<td>13183</td>
</tr>
</tbody>
</table>

In Notre Dame's Writing and Rhetoric courses, students learn the art of academic argument and gain the persuasive ability to support claims with effective organization, evidence, logic, and style. Academic writing is an ongoing conversation with a long history. Writing and Rhetoric prepares students to enter into this rich world of intellectual inquiry and rhetorical tradition as outstanding communicators and ethical critical thinkers.

The Writing and Rhetoric options offered to first-year students are each built on the values of responsible public discourse and Catholic Social Teaching, challenging students to uphold a civil, ethical, and moral ideal that encompasses the rhetorical virtues of honesty, knowledge, rationality, tolerance, wisdom, and intellectual courage.

WRITING AND RHETORIC COURSES
WR 12100: Writing and Rhetoric Tutorial
WR 13100: Writing and Rhetoric
WR 13200: Community-Based Writing & Rhetoric
WR 13300: Multimedia Writing & Rhetoric
WR 13150: Writing and Rhetoric Summer Seminar
WR 11050: Writing and Rhetoric Summer Studio

All of the courses associated with this academic program can be found online at registrar.nd.edu/students/class_search.php. The scheduled classes for a given semester may be found by clicking on "Class Search" and selecting the subject Writing and Rhetoric. Course descriptions can be found by clicking on the subject code and course number in the search results.

Course 2—Mathematics

All Notre Dame first-years must take two semesters of mathematics as a University requirement. Students who have credit for the first level of calculus (MATH 10250, 10350, or 10550) must fulfill the University requirement by taking a second level of calculus (MATH 10270, 10360, or 10560) or a non-calculus mathematics course.

Students in the College of Arts and Letters may fulfill their mathematics requirement by taking any two courses in mathematics. They may be calculus courses, non-calculus-based courses, or one of each. Students may not, however, take two beginning level calculus courses to fulfill this requirement. All economics majors must complete a calculus sequence; the lowest level course they may take is MATH 10350–10360.

The mathematics requirement for students planning to enter the Mendoza College of Business includes one calculus course (any level except MATH 10240) and ACMS 10145: Statistics for Business and Economics I.

Students in the School of Architecture take MATH 10250 and 10270. Also acceptable are the calculus sequences required of students in the College of Engineering or the College of Science.

Students majoring in the College of Science will fulfill their University mathematics requirement through on the following calculus sequence: MATH 10350–10360, MATH 10550–10560, MATH 10850–10860, or MATH 10450–10460. The MATH 10350–10360 and MATH 10450–10460 sequences are designed for students in programs emphasizing the life sciences, such as biological sciences, economics and the preprofessional (pre-medical and other health-related) programs in either the College of Science or the College of Arts and Letters. Students planning to major in biochemistry, chemistry, mathematics or physics must take MATH 10550–10560.

For students in the College of Engineering, the first-year mathematics requirement is fulfilled through the calculus sequence MATH 10550–10560 or MATH 10850–10860.

The MATH 10850–10860 sequence stresses concepts and proofs, and must be taken by both the College of Science honors mathematics major and the College of Arts and Letters honors mathematics major. It is also open to other students with very strong high school mathematics backgrounds.

A student who completes the MATH 10250–10270 calculus sequence and then decides to enter a science or engineering program will have to take additional courses in mathematics, as prescribed by the administrator of the program.

MATHEMATICS COURSES:
MATH 10110: Principles of Finite Mathematics
MATH 10120: Finite Mathematics
MATH 10130: Beginning Logic
ACMS 10140: Elements of Statistics
ACMS 10145: Statistics for Business and Economics I
MATH 10240: Principles of Calculus
MATH 10250: Elements of Calculus
MATH 10270: Mathematics in Architecture
MATH 10350: Calculus A
MATH 10360: Calculus B
MATH 10450: Honors Mathematics I
MATH 10460: Honors Mathematics II
MATH 10550: Calculus I
MATH 10560: Calculus II
MATH 10850: Honors Calculus I
MATH 10860: Honors Calculus II
MATH 20550: Calculus III

All of the courses associated with this academic program can be found online at registrar.nd.edu/students/class_search.php. The scheduled classes for a given semester may be found by clicking on "Class Search" and selecting the subject Mathematics. Course descriptions can be found by clicking on the subject code and course number in the search results.

Course 3—Science

First-year students take two semesters of science as part of the First-Year Curriculum. The courses offered by the College of Science for first-year students are broadly grouped into two main categories, laboratory sciences and topical sciences. The laboratory sciences are intended for students who are planning to major in one of the sciences or in engineering or perhaps would prefer an in-depth discussion of a particular field of study.
with laboratory work. The second category, topical sciences, is designed for those first-year students who plan to enter the College of Arts and Letters, the Mendoza College of Business, or the School of Architecture. These courses are rigorous and intellectually demanding and differ from the laboratory sciences chiefly in that they are often somewhat interdisciplinary in nature and/or that they focus on themes that may have an ethical or value-related dimension, and normally they do not include an associated laboratory requirement.

In determining which course to take as Course 3, students should consider the following:

1. All Notre Dame students must, as a University Requirement, take two semesters of science and it is recommended that the science requirement be met in the first year. Students contemplating any of the College of Engineering or College of Science programs or pre-health studies in the College of Arts and Letters must take the science requirement in their first year.

2. Students planning to participate in an international study program during their sophomore year must complete the science requirement in the first year, along with the required language for international study in France or Austria (see Course 5).

3. The science course is often a prerequisite for other courses in these programs. Students planning to enter the College of Arts and Letters Pre-Health Program will also take CHEM 10171 and 10172 in their first year. Students thinking of entering any of the following programs in the College of Science are advised to take CHEM 10171 and 10172 as their science requirement in the first year: environmental sciences, science preprofessional, science collegiate sequences, biological sciences, mathematics, applied mathematics, statistics, and physics. Mathematics and physics majors who do not have an interest in the health care professions may elect to take CHEM 10171 followed by 10122. Chemistry and biochemistry majors take CHEM 10181 and 10182. A second science course is required and discussed under Course 5 for students interested in chemistry, biochemistry, biological sciences, environmental sciences, mathematics, and physics.

4. Students planning on an engineering program are required to take CHEM 10171 in the first semester. During the second semester, the technical requirement is satisfied by several courses that are specified by the different majors. Students should work with their FYS advisors to see which courses satisfy the requirements.

5. Prospective Arts and Letters or Business students interested in the environmental sciences second major offered by the College of Science should take CHEM 10171 and 10172 as their science requirement.

6. Students planning on entering the Mendoza College of Business programs or the College of Arts and Letters programs, other than mathematics or pre-health studies, may select freely from among any of the science courses offered and for which they are prepared. However, the following courses are specifically designed for the students planning to enter those programs: BIOS 10101 through 10119; CHEM 10101 through 10104; PHYS 1052, 1062, 10111, 10122, 10140, 10240, 20051, 20061.

7. Students intending to enter the School of Architecture should take PHYS 10111 first semester; PHYS 10310 is also acceptable.

8. First-year students may substitute two semesters of foreign language in place of two semesters of science to complete their first-year course requirements. They may also substitute one semester of each, but should keep in mind that the science requirement must be completed by the end of the sophomore year by those students who intend to study abroad as juniors.

**LABORATORY SCIENCE COURSES:**
- BIOS 10161: Biological Sciences I
- BIOS 10162: Biological Sciences II
- CHEM 10171: General Chemistry: Introduction to Chemical Principles
- CHEM 10172: General Chemistry: Organic Structure and Reactivity
- CHEM 10122: General Chemistry: Biological Processes
- CHEM 10181: Introduction to Chemical Principles
- CHEM 10182: Organic Structure and Mechanism
- PHYS 10310: General Physics I
- PHYS 10320: General Physics II
- PHYS 10411: General Physics A-M Mechanics
- PHYS 10424: General Physics B-M Waves/Thermo

**TOPICAL SCIENCES COURSES:**
- BIOS 10101: Human Genetics, Evolution, and Society
- BIOS 10106: Common Human Diseases
- BIOS 10107: Ecology and Evolution
- BIOS 10108: Revolutions in Biology
- BIOS 10114: Avian Biology
- BIOS 10115: Microbes and Man
- BIOS 10119: Evolution and Society
- CHEM 10101: Foundations of Chemistry
- CHEM 10102: Chemical Environment, and Energy
- CHEM 10103: Chemistry and Crime
- CHEM 10104: Forensic Chemistry
- PHYS 10052: Concepts of Energy and Environment
- PHYS 10062: Science Literacy
- PHYS 10111: Principles of Physics I
- PHYS 10122: Principles of Physics II
- PHYS 10140: Descriptive Astronomy
- PHYS 10240: Elementary Cosmology
- PHYS 10262: Physical Methods in Art and Archeology
- PHYS 20051: Energy and Society
- PHYS 20061: Nuclear Warfare

**COURSE DESCRIPTIONS**

All of the courses associated with this academic program can be found online at registrar.nd.edu/students/class_search.php. The scheduled classes for a given semester may be found by clicking on “Class Search” and selecting the subject Science (Non-departmental). Course descriptions can be found by clicking on the subject code and course number in the search results.

**Course 4—University Requirement or Elective: History, Social Sciences, Philosophy, Theology, Literature, Fine Arts, and Languages**

For a Notre Dame first-year student, taking an “elective” means having the option to choose a course or courses that are not strictly a part of the University Requirements. Although not constrained by those requirements, an elective choice may be constrained by requirements from a student’s intended college and major, called Program Requirements.

All first-years have a possible slot in their schedule each term for one elective, but if students receive credit for one or more of their required first-year courses through AP exams, SAT II exams, or transfer credit, they may have two spaces for which to select an elective.

Specific recommendations for electives are made for three of the intended college programs. The College of Engineering recommends that first-year students planning on majoring in engineering take PHYS 10310 in the spring semester as their Course 4 elective. Students intending to study architecture are advised to take ARCH 11011 as their Course 4 elective in the fall semester. They will then take ARCH 11021 and ARCH 10311 in the spring semester. Students intending to study business are advised to take microeconomics, ECON 10010/10011, in either the fall or spring semester.

**A SAMPLING OF UNIVERSITY REQUIREMENT AND ELECTIVE COURSES**

**HISTORY:**
- HIST 10050. Early Africa and Slave Trade
- HIST 10061. Modern Africa
- HIST 10210. Ancient Greece and Rome
- HIST 10211. From Jesus to the Year 1000
- HIST 10451. Modern France
- HIST 10500. Italian Renaissance
- HIST 10600. U.S. History to 1877
- HIST 10605. U.S. History since 1877
- HIST 10929. Andean History and Ethno-history
- HIST 10985. World History of 20th Century Christianity
- HIST 20985. History of Science from Newton to Einstein
- CLAS 20105. History of Ancient Greece
TO TABLE OF CONTENTS
Students intending to major in the College of Science’s biology, biochemistry, chemistry, environmental science, mathematics, or physics program will take more than one science each semester and need to use Course 5 to take the second science. The second science course sequence for the chemistry and mathematics programs is PHYS 10310–10320; for the environmental science, biochemistry, and biology programs, it is BIOS 10161–10162; and for the physics program, it is PHYS 10411–10424.

Students intending to major in studio art should take DESN 11100 and ARST 11201 as their fifth course. Students intending to major in music should take a three-credit theory course sequence, MUS 20001 and 20002, a one-credit music exercise course sequence, MUS 20011 and 20012, and a one-credit lesson course each semester.

Students intending to major in architecture are expected to take ARCH 11021 and 10311. College of Engineering intents should enroll in EG 10111–10112 as their fifth course.

See the various college and department summaries in this Bulletin for details on the requirements for all of these programs.

PROGRAM REQUIREMENT COURSES NOT PREVIOUSLY LISTED:
ARCH 10311. Analysis of Architectural Writing
ARCH 11011. Graphics I–Drawing
ARCH 11021. Graphics II–Drafting
EG 10111. Introduction to Engineering Systems I
EG 10112. Introduction to Engineering Systems II

COURSE DESCRIPTIONS
All of the courses associated with this academic program can be found online at registrar.nd.edu/students/class_search.php. The scheduled classes for a given semester may be found by clicking on “Class Search” and selecting the subject First Year of Studies. Course descriptions can be found by clicking on the subject code and course number in the search results.

Moreau First Year Experience

All Notre Dame Students must take two semesters of the First Year Experience: FYS 10101 in the fall and FYS 10102 in the spring.

COURSE DESCRIPTIONS
All of the courses associated with this academic program can be found online at registrar.nd.edu/students/class_search.php. The scheduled classes for a given semester may be found by clicking on “Class Search” and selecting the subject First Year of Studies. Course descriptions can be found by clicking on the subject code and course number in the search results.

Voluntary Courses

In addition to five academic courses and the Moreau First Year Experience, voluntary one- and two-credit courses are offered in the areas of fine arts, history, music, dance, and theology. The First Year of Studies also offers a variety of one-credit intellectual engagement and academic success courses.

These courses may not be substituted for any of the six required courses. The colleges have restrictions on the number of one- and two-credit courses that will be applied to the total number of credits required for graduation from the colleges.

A SELECTION OF VOLUNTARY COURSES.

FYS 10170. New York Times in the Classroom
FYS 10300. Foundations of Academic Excellence
FYS 10405. Giving Back through Education
FYS 10410 Shakespeare on Stage/Screen
MUS 10201. Brass Ensemble
MUS 10203. Chamber Ensemble
MUS 10210. Chorale
MUS 10221. Glee Club
MUS 10222. Collegium Musicum
MUS 10230. Jazz Band
MUS 10241. Wind Ensemble
MUS 10244. Concert Band
MUS 10245. University Band
MUS 10247. Concert Winds
MUS 10249. Marching Band
MUS 10250. Symphony Orchestra
MUS 10251. Chamber Orchestra
MUS 10300–MUS 11340. Voice and Instrumental Lessons
THEO 33950. Social Concerns Seminar: Appalachia
THEO 33963. Social Concerns Seminar: The Church and Social Action—Urban Plunge
THEO 33936. Summer Service Learning: Confronting Social Issues

COURSE DESCRIPTIONS
All of the courses associated with this academic program can be found online at registrar.nd.edu/students/class_search.php. The scheduled classes for a given semester may be found by clicking on “Class Search” and selecting the subject First Year of Studies. Course descriptions can be found by clicking on the subject code and course number in the search results.

Credit and/or Placement by Examination

The First Year of Studies processes advanced credit. The applicable University department and/or college, however, in coordination with First Year of Studies, determines exactly what advanced credit will be awarded. In some cases, students will be required to take their science courses at the University, even if they have advanced credit for those courses. This is especially true for students who may wish to pursue a degree in one of the preprofessional (premedical and related health professions) majors. First Year of Studies advisors are available to discuss these issues with students both in the summer and during the academic year.

Entering first-year students may become eligible for credit by examination in four ways. (1) through the Advanced Placement Program administered by the College Entrance Examination Board, (2) through the SAT-II-Subject Tests in French, German, Italian, and Spanish, (3) through the International Baccalaureate North America, (4) through the Notre Dame Mathematics Credit Examination Program. Students’ placement may be determined through the online Notre Dame French, German, and Spanish placement examinations, but no credit is awarded. Placement examinations for Arabic, Chinese, Japanese, Korean, and Russian are also administered on campus.

1. Advanced Placement Program (AP)—Students who submit results of Advanced Placement examinations are eligible to receive placement and credit in accordance with the accompanying table.

2. SAT-II Subject Tests (SAT II)—Results of CEEB Advanced Placement Examinations or the SAT-II Subject Tests in French, German, Italian, or Spanish are used for course placement and credit by examination in accordance with the accompanying table.

3. International Baccalaureate Program (IB)—Students who submit results of International Baccalaureate Higher Level examinations are eligible to receive placement and credit in accordance with the accompanying table. The University does not give credit for Subsidiary Level examinations.

4. Notre Dame Mathematics Credit Examination Program—First-year students may take examinations for possible course placement and credit in mathematics after they arrive on campus. The examinations will be based on college-level courses.

Notre Dame Online French, German, Latin and Spanish Placement Examination Programs—First-year students may take online examinations for placement only. These examinations are available during the summer as well as during the academic year.

When credit is awarded, the dean of the First Year of Studies has it entered on the student’s transcript, which is maintained by the Registrar’s office. This credit can be applied toward required or elective courses if the student’s particular college program permits. If Advanced Placement, International Baccalaureate, or Notre Dame Mathematics Examination credit is not applicable to a specific college program, that credit is recorded on the student’s transcript, but it represents credit in excess of graduation requirements. Placement, but not credit, for the Notre Dame online placement examinations is recorded in the student’s official records, but not on his or her transcript.
The general guideline is that credit by examination is counted as required or elective credit if the course is required or permitted in a particular college program. Credit by examination is not counted as required or elective credit if the number of the course for which credit is awarded is lower than the initial course required in a particular college program. For example, if a student earns a 4 on the Advanced Placement Chemistry test, the three credits awarded for CHEM 10101 would count toward graduation in the College of Arts and Letters, Mendoza College of Business, or School of Architecture program. The credits would not count toward graduation in a College of Engineering program since the initial chemistry course in this college is CHEM 10171.

Language placement—Students with no previous background in a language can elect a beginning-level course. Students with previous background in a language who want to continue their language study must take a placement exam to determine proper placement.

Students may use the results from a foreign language credit by examination (AP, SAT II, IB) for placement, as described under the Credit by Examination table. A maximum of six credits can be granted toward graduation for performance on a foreign language credit by examination. Students should consult with the dean of their college to determine the applicability of this policy for the particular program of studies.

Students who have not taken a language credit by examination before entering Notre Dame, may take one at Notre Dame. All foreign language departments at Notre Dame offer placement exams. The French, German, Latin, and Spanish placement exams are available online. Placement exams for other languages are given during the First Year Orientation Weekend in August and at least twice during the school year in time for fall and spring advance registration. Information on language placement is sent to incoming first-year students during the summer. The appropriate department and the First Year of Studies will guide students with previous instruction in their languages after reviewing their high school background and placement tests.

Regardless of their scores, students in the College of Arts and Letters must take at least one language course in residence at Notre Dame. Arts and Letters students must also complete at least one course at the intermediate or higher level that deals with texts in the original language. If placement allows, one course at Notre Dame at the intermediate or higher level may satisfy both parts of this requirement. In the College of Science, students who place higher

### The Advanced Placement Examinations

<table>
<thead>
<tr>
<th>Advanced Placement Exam</th>
<th>AP Grade Required</th>
<th>Number of Credits Awarded</th>
<th>Notre Dame Course Credited</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biology</td>
<td>5</td>
<td>8</td>
<td>Biological Sciences 10098 and 10099</td>
</tr>
<tr>
<td>Biology</td>
<td>4</td>
<td>3</td>
<td>Biological Sciences 10101</td>
</tr>
<tr>
<td>Calculus AB</td>
<td>5</td>
<td>4</td>
<td>Mathematics 10550</td>
</tr>
<tr>
<td>Calculus BC</td>
<td>5</td>
<td>8</td>
<td>Mathematics 10550 and 10560</td>
</tr>
<tr>
<td>Calculus BC/AB Subscore</td>
<td>5</td>
<td>4</td>
<td>Mathematics 10550</td>
</tr>
<tr>
<td>Chemistry</td>
<td>5</td>
<td>4</td>
<td>Chemistry 10171</td>
</tr>
<tr>
<td>Chemistry</td>
<td>4</td>
<td>3</td>
<td>Chemistry 10101</td>
</tr>
<tr>
<td>Economics (Micro)</td>
<td>5</td>
<td>3</td>
<td>Economics 10010</td>
</tr>
<tr>
<td>Economics (Macro)</td>
<td>5</td>
<td>3</td>
<td>Economics 10020</td>
</tr>
<tr>
<td>English (either exam)</td>
<td>4</td>
<td>3</td>
<td>Writing and Rhetoric 13100</td>
</tr>
<tr>
<td>Government (American Politics)</td>
<td>5</td>
<td>3</td>
<td>Political Science 10098</td>
</tr>
<tr>
<td>Government (Comparative)</td>
<td>5</td>
<td>3</td>
<td>Political Science 10099</td>
</tr>
<tr>
<td>Latin</td>
<td>4</td>
<td>8</td>
<td>Latin 10001 and 10002</td>
</tr>
<tr>
<td>Latin</td>
<td>3</td>
<td>4</td>
<td>Latin 10001</td>
</tr>
<tr>
<td>Physics I</td>
<td>5</td>
<td>3</td>
<td>Physics 10091*</td>
</tr>
<tr>
<td>Physics II</td>
<td>5</td>
<td>3</td>
<td>Physics 10092*</td>
</tr>
<tr>
<td>Physics C, Mechanics</td>
<td>5</td>
<td>4</td>
<td>Physics 10093*</td>
</tr>
<tr>
<td>Physics C, Mechanics</td>
<td>4</td>
<td>4</td>
<td>Physics 10095*</td>
</tr>
<tr>
<td>Physics C, Elec. &amp; Magnetism</td>
<td>5</td>
<td>4</td>
<td>Physics 10094*</td>
</tr>
<tr>
<td>Physics C, Elec. &amp; Magnetism</td>
<td>4</td>
<td>4</td>
<td>Physics 10096*</td>
</tr>
<tr>
<td>Psychology</td>
<td>5</td>
<td>3</td>
<td>Psychology 10000</td>
</tr>
<tr>
<td>Statistics</td>
<td>5</td>
<td>3</td>
<td>Applied and Computational Mathematics and Statistics 10145</td>
</tr>
</tbody>
</table>

*Physics AP courses are equivalent to Notre Dame courses as follows.  
PHYS 10091 = PHYS 10111  
PHYS 10093 = PHYS 10310  
PHYS 10094 = PHYS 10320  
PHYS 10095 = PHYS 30210  
PHYS 10096 = PHYS 30220

### Advanced Placement & SAT II Subject Tests for French, German, Italian, and Spanish

<table>
<thead>
<tr>
<th>SAT II Subject Test Score</th>
<th>Advanced Placement Test Score</th>
<th>Credits (Courses)</th>
<th>Placement Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>French and French with listening</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>790–800</td>
<td>5 (lang.)/4 (lit.)</td>
<td>6 (20201-20202)</td>
<td>30310 or 30320</td>
</tr>
<tr>
<td>690–780</td>
<td>4 (lang.)/3 (lit.)</td>
<td>6 (20201-20202)</td>
<td>20300 or 27500</td>
</tr>
<tr>
<td>590–680</td>
<td>3 (lang.)/2 (lit.)</td>
<td>7 (10102-20201)</td>
<td>20202</td>
</tr>
<tr>
<td>490–580</td>
<td>2 (lang.)/1 (lit.)</td>
<td>8 (10101—10102)</td>
<td>20201 or 20215</td>
</tr>
<tr>
<td>480</td>
<td>1 (lang.)</td>
<td>4 (10101)</td>
<td>10102 or 10115</td>
</tr>
<tr>
<td>German and German with listening</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>790–800</td>
<td>5 (lang.)/4 (lit.)</td>
<td>7 (10102-20201)</td>
<td>20202 or 30000+</td>
</tr>
<tr>
<td>690–780</td>
<td>4 (lang.)/3 (lit.)</td>
<td>8 (10101-10102)</td>
<td>20201</td>
</tr>
<tr>
<td>570–680</td>
<td>3 (lang.)/2 (lit.)</td>
<td>4 (10101)</td>
<td>10102</td>
</tr>
<tr>
<td>Italian and Italian with listening</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>790–800</td>
<td>5 (lang.)/4 (lit.)</td>
<td>6 (20201-20202)</td>
<td>30310</td>
</tr>
<tr>
<td>690–780</td>
<td>4 (lang.)/3 (lit.)</td>
<td>7 (10102-20201)</td>
<td>20202</td>
</tr>
<tr>
<td>590–680</td>
<td>3 (lang.)/2 (lit.)</td>
<td>8 (10101-10102)</td>
<td>20201 or 20215</td>
</tr>
<tr>
<td>490–580</td>
<td>2 (lang.)/1 (lit.)</td>
<td>4 (10101)</td>
<td>10102</td>
</tr>
<tr>
<td>Spanish and Spanish with listening</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>800</td>
<td>5 (lang.)/4 (lit.)</td>
<td>6 (20201-20202)</td>
<td>30310 or 30320</td>
</tr>
<tr>
<td>690–790</td>
<td>4 (lang.)/3 (lit.)</td>
<td>6 (20201-20202)</td>
<td>20237 or 27500</td>
</tr>
<tr>
<td>570–680</td>
<td>3 (lang.)/2 (lit.)</td>
<td>6 (10102-20201)</td>
<td>20202</td>
</tr>
<tr>
<td>460–560</td>
<td>2 (lang.)/1 (lit.)</td>
<td>6 (10101-10102)</td>
<td>20201 or 20215</td>
</tr>
<tr>
<td>450</td>
<td>1 (lang.)</td>
<td>3 (10101)</td>
<td>10102 or 10115</td>
</tr>
</tbody>
</table>
than the intermediate level (third semester) are considered to have fulfilled the language requirement and need not take any additional courses in the language. Students contemplating an international study program that requires language study should consult with language department regarding the appropriate language preparation. All students are encouraged to start their study of language during their first year or the beginning of their second year at the latest.

**College Credit from Other Institutions**

The University’s other colleges and departments, in consultation with the First Year of Studies, determine whether or not college courses completed after the junior year and prior to first-year enrollment and taken at other institutions will be accepted for credit. In order to be considered for credit, these courses must have been completed on college campuses and must not have been used to satisfy high school graduation requirements or Notre Dame requirements for first-year admission. An official transcript, a course syllabus, and a copy of the published description of the course are also necessary for consideration of the course for credit. Normally, courses specified in the First-Year Curriculum may not be satisfied through transfer credit. First-year students need to resolve all college credit situations before or during their first semester at Notre Dame.

**Learning Resource Center**

The First Year of Studies’ Learning Resource Center (LRC) offers several types of help for more difficult classes. All sessions are free of charge and meet for two hours in the evenings once or twice a week. The collaborative learning program offers weekly sessions in which small groups of students work together on homework for their classes. Collaborative learning resource leaders, upper-class students who have excelled in the relevant course, monitor the sessions, encourage problem-solving and collaboration among group members, and answer questions when necessary. Students use this group study to complete homework in a more structured setting. The program is open to all first-year students and sessions are offered in mathematics and the sciences.

The tutoring program allows students to review the concepts their professors have covered in class. Tutoring sessions consist of small groups, usually kept under fifteen students, which meet once a week for two hours. An upper-class tutor, who has excelled in the course he or she is tutoring, reviews recent concepts and homework and answers any questions the students might have. The tutoring program is open to all first-year students and sessions are offered for most first-year courses.

**Help Sessions**

Help Sessions, held weekly for two hours, offer assistance to students who have questions regarding homework or concepts in classes they are taking. Students with questions may drop in at any point during the session to work with knowledgeable tutors. Because of the flexible nature of help sessions, tutors are often available to give personal attention to students. Help sessions are offered for selected mathematics and chemistry courses and are open to all first-year students.

The assistance offered by the LRC is supplemental and is not meant to replace a student’s own efforts, classroom instruction, meetings with the professor, or any other assistance offered by the instructor or department.

**INTERNATIONAL BACCALAUREATE—NOTRE DAME CREDIT**

<table>
<thead>
<tr>
<th>IB Higher Level Exam</th>
<th>Grade Required</th>
<th>Number of Credits Awarded</th>
<th>Notre Dame Course Credited</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biology</td>
<td>6</td>
<td>6</td>
<td>Biological Sciences 10101-10107</td>
</tr>
<tr>
<td>Biology</td>
<td>7</td>
<td>8</td>
<td>Biological Sciences 10098-10099</td>
</tr>
<tr>
<td>Chemistry</td>
<td>6</td>
<td>3</td>
<td>Chemistry 10101</td>
</tr>
<tr>
<td>Chemistry</td>
<td>7</td>
<td>4</td>
<td>Chemistry 10171</td>
</tr>
<tr>
<td>Economics</td>
<td>6</td>
<td>6</td>
<td>Economics 10010-10020</td>
</tr>
<tr>
<td>English</td>
<td>6</td>
<td>3</td>
<td>Writing and Rhetoric 13100</td>
</tr>
<tr>
<td>Japanese</td>
<td>6</td>
<td>5</td>
<td>Japanese 10111</td>
</tr>
<tr>
<td>Latin</td>
<td>6</td>
<td>8</td>
<td>Latin 10001-10002</td>
</tr>
<tr>
<td>Russian</td>
<td>6</td>
<td>8</td>
<td>Russian 10101-10102</td>
</tr>
<tr>
<td>Spanish</td>
<td>6</td>
<td>8</td>
<td>Spanish 10101-10102</td>
</tr>
<tr>
<td>Mathematics</td>
<td>7</td>
<td>8</td>
<td>Mathematics 10550-10560</td>
</tr>
<tr>
<td>Physics</td>
<td>6</td>
<td>6</td>
<td>Physics 10091-10092</td>
</tr>
<tr>
<td>Physics</td>
<td>7</td>
<td>8</td>
<td>Physics 10093-10094</td>
</tr>
<tr>
<td>Psychology</td>
<td>6</td>
<td>3</td>
<td>Psychology 10000</td>
</tr>
<tr>
<td>Social and Cultural Anthropology</td>
<td>6</td>
<td>3</td>
<td>Anthropology 10109</td>
</tr>
</tbody>
</table>

**Peer Advising Program**

The Peer Advising Program provides the opportunity for first-year students to engage in meaningful conversation with reliable and informed upper-class students. These interactions focus on the general adjustment of the first-year student to the university setting. Peer Advising endeavors to welcome all students to the Notre Dame community by reassuring and encouraging students as they begin university-level study; informing students about a variety of campus resources; emphasizing the mission and initiatives of the First Year of Studies; and listening for the challenges and concerns of new students.

**Program in Academic Excellence**

All first-year students interested in improving their skills for success in college may participate in small group workshops or schedule individual meetings with the First Year of Studies learning strategies specialist. The Program in Academic Excellence covers a variety of topics of practical value to students (e.g., time management, note taking, test preparation) and includes individual assistance with writing and reading for various academic programs.
Programs of Studies. The study of architecture has a long and distinguished history at the University of Notre Dame. Courses in architecture were taught at the University as early as 1869. Formal instruction in architecture began in 1898. The Department of Architecture, previously part of the College of Engineering, became the free-standing School of Architecture in 1994. The school offers a five-year program leading to the degree of Bachelor of Architecture, a two-year program leading to the degree of Master of Architectural Design and Urbanism, and a two- or three-year program leading to the degree of Master of Architecture. The professional degree programs (B.Arch. and M.Arch.) are accredited by the National Architectural Accrediting Board, and the curricula conform to NAAB requirements for the professional degree in architecture.

In the United States, most registration boards require a degree from an accredited professional degree program as a prerequisite for licensure. The National Architectural Accrediting Board (NAAB), which is the sole agency authorized to accredit professional degree programs in architecture offered by institutions with U.S. regional accreditation, recognizes three types of degrees: the Bachelor of Architecture, the Master of Architecture, and the Doctor of Architecture. A program may be granted an eight-year, three-year, or two-year term of accreditation, depending on the extent of its conformance with established educational standards.

Doctor of Architecture and Master of Architecture degree programs may require a preprofessional undergraduate degree in architecture for admission. However, the preprofessional degree is not, by itself, recognized as an accredited degree.

The University of Notre Dame School of Architecture offers the following NAAB-accredited degree programs:

- B.Arch. (165 undergraduate credits)
- M.Arch. (preprofessional degree + 54 graduate credits)
- M.Arch. (non-preprofessional degree + 90 credits)

Next accreditation visit for all programs: 2016

While the primary objective of the curriculum is professional education, students have opportunities to explore fields such as business, engineering, environmental sciences, and the liberal arts through electives and building on University requirements.

In the spring of 2010 the School of Architecture completed its most recent NAAB accreditation evaluation and was granted a full 6-year term of accreditation.

Since the early 1990s, the school’s curriculum has been based on education in traditional and classical architecture and urbanism. Instruction teaches the skills, cultivates the talents, and imparts the knowledge necessary to produce buildings that represent innovation within long-standing traditions, use nature’s materials responsibly, and contribute to building livable communities. The school believes this is best done by learning how recurring problems in designing and constructing buildings and fitting them into existing urban and rural settings have been addressed in the past and adapting those lessons to the ever-changing circumstances of the modern world.

The goals of the curriculum include developing competence in the design of individual buildings, understanding the relationship between individual buildings and their physical and cultural contexts, and recognizing the ethical dimensions of the professional practice of architecture. Architects play a primary role in shaping the built environment and have a professional responsibility to do so in a manner that contributes to the civil life of society. Their work must also help to renew and sustain the integrity of the natural world and promote social welfare.

In addition to the first professional degree of Bachelor of Architecture (B.Arch.), the School of Architecture offers multiple paths of study leading to one of three degrees.

The two-year post-professional graduate course of study leads to the Master of Architectural Design and Urbanism (MADU) degree, and is for those who already hold a professional degree in architecture (B.Arch. or M.Arch.).

The two-year professional graduate course of study leads to the Master of Architecture (M.Arch.) degree, and is for those who hold a four-year pre-professional degree (B.S. or B.A. in Architecture).

The three-year professional graduate course of study leads to the Master of Architecture (M.Arch.) degree, and is for those who hold an accredited undergraduate degree in a field other than architecture.

All of these graduate courses of study entail one or three foundational studio courses, a one-year concentration in either classical architecture or urban design, and conclude with a one-semester terminal design project.

In their penultimate year, professional degree students may apply for an additional year of study. Acceptance into this program extends a student’s course of study by one year, allowing for participation in both concentrations, after which the student will graduate with both the professional M.Arch. degree and the post-professional Master of Architectural Design and Urbanism (MADU) degree.

The Master of Science in Historic Preservation program connects naturally to the professional
degree programs within the School of Architecture as the school seeks to not only build on the living tradition of architectural language and support the future of the community, but to care for the structures, spaces, landscapes, crafts, bodies of knowledge, and traditions that represent the best of our varied cultural heritage. The Master of Science in Historic Preservation program covers two calendar years—four semesters (including one semester in Rome), one introductory summer course, and one summer course and/or professional experience.

The Master of Science in Historic Preservation program is open to recent graduates and working professionals with professional or non-professional degrees in architecture.

Concentrations in furniture design, in historic preservation and restoration, and in architectural practice and enterprise, are also options within the first professional (undergraduate) degree program.

Required courses for the concentration in furniture design are Beginning Furniture; Advanced Furniture Design; Special Studies in Furniture Design; and Special Studies in Furniture Design 2.


Students in the concentration in practice and enterprise take four courses from the Mendoza College of Business: Accountancy I, Principles of Management, and two other courses chosen from offerings in various aspects of business.

Concentrations are declared at the end of the third year. The National Architectural Accrediting Board requires B. Arch students to take at least 45 credit hours outside of architecture. Students taking electives in architecture, either within a concentration or as random electives, may need additional credits outside of architecture to meet the minimum of 45.

Both the undergraduate and graduate programs at Notre Dame take advantage of the school’s proximity to Chicago, where the school has studio space in the historic Motorola Building (originally the Railway Exchange Building), owned by the University. In addition, all third-year undergraduate students spend the academic year in the school’s Rome Studies Center in Italy. All graduate students spend a semester there. Some limited scholarship aid is available for the additional expenses incurred in Rome.

The initial phase of undergraduate architectural study is devoted to acquiring basic design and technical skills and developing an understanding of architectural concepts by learning canonical forms of classical architecture and applying them to design problems of increasing scale and complexity. This beginning study is reinforced in the third year, spent in Rome, where 2,500 years of building tradition provide the context for contemporary design problems. Fourth-year students return to Notre Dame, where they are reintroduced to the American context. At this stage, students are encouraged to synthesize their interpretations of the historical legacy in the context of American urban centers and small cities. They are also challenged by projects that require them to engage architectural problems outside their Western focus. The undergraduate program culminates with a thesis design project completed in the fifth year.

In addition to studio instruction, students complete course work in structural, mechanical, and environmental systems and architectural history. History and theory courses in the School of Architecture include a two-semester survey of the history of architecture from the earliest times to the present and specialized upper-level course work in selected topics involving the history and theory of architecture.

Students are in contact with practicing professionals through collaboration between the School of Architecture and the Northern Indiana Chapter of the American Institute of Architects. The School of Architecture has an active chapter of the American Institute of Architecture Students.

The School of Architecture is located in Bond Hall of Architecture. This building, the former University Library, was thoroughly rebuilt from 1995 through 1996. The 60,000-square-foot building contains classrooms, an auditorium, library, computer lab, and studios that are both functional and designed in accord with the historical limestone structure. Workshops for the concentrations in Furniture Design and in Architecture and the Building Arts are in Westlake Hall, a short walk from Bond Hall. In fall 2016, construction will begin for Walsh Family Hall of Architecture. Located in the southeast portion of the main campus, Walsh Family Hall will form part of the University’s “Arts Campus.” Occupancy is scheduled for January of 2019.

Richard H. Driehaus Prize in Classical Architecture
Richard H. Driehaus, the founder and chairman of Driehaus Capital Management in Chicago, initiated the Richard H. Driehaus Prize in Classical Architecture to honor a major contributor in the field of traditional and classical architecture or historic preservation. In 2004, he initiated the Henry Hope Reed prize to recognize outstanding contributions to the welfare of the traditional city and its architecture. A third prize was developed in 2012, the Rafael Manzano Martos Prize for Classical Architecture and Monument Restoration, which is awarded annually to an architect practicing in Spain, who defends and preserves vernacular architecture, reinforcing Spain’s unique architectural heritage. The prizes were established through the University of Notre Dame’s School of Architecture because of its reputation as a national leader in incorporating the ideals of traditional and classical architecture into the task of modern urban development.

First Year
First-year students intending to major in architecture take the following courses. Courses in italics need not be taken in the semester in which they are shown.

<table>
<thead>
<tr>
<th>Course</th>
<th>First Semester Credits</th>
<th>Second Semester Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Writing and Rhetoric/ University Seminar</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>MATH 10250 and 10270</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 10111 and 10222 or PHYS 10111 and Science Elective</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Social Science</td>
<td>3</td>
<td>–</td>
</tr>
<tr>
<td>ARCH 11011. Graphics I: Drawing</td>
<td>3</td>
<td>–</td>
</tr>
<tr>
<td>ARCH 11021. Graphics II: Drafting</td>
<td>3</td>
<td>–</td>
</tr>
<tr>
<td>ARCH 10311. Architectural Writings</td>
<td>4</td>
<td>–</td>
</tr>
<tr>
<td>Moreau First Year Experience</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>16</td>
<td>17</td>
</tr>
</tbody>
</table>

The courses listed below indicate the normal sequence for sophomore, junior, senior, and fifth years majoring in architecture. Courses in italics need not be taken in the semester listed.

Sophomore Year

<table>
<thead>
<tr>
<th>First Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARCH 21111. Design I</td>
</tr>
<tr>
<td>ARCH 20411. Building Technology I</td>
</tr>
<tr>
<td>ARCH 20211. Architectural History I</td>
</tr>
<tr>
<td>Foundations of Theology</td>
</tr>
<tr>
<td>Introduction to Philosophy</td>
</tr>
<tr>
<td>Total</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Second Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARCH 21121. Design II</td>
</tr>
<tr>
<td>ARCH 20221. Architectural History II</td>
</tr>
<tr>
<td>ARCH 20511. Structural Mechanics for Architects</td>
</tr>
<tr>
<td>ROIT 10110: Beginning Italian*</td>
</tr>
<tr>
<td>Total</td>
</tr>
</tbody>
</table>

Junior Year (Rome Studies Program)

<table>
<thead>
<tr>
<th>First Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARCH 34112. Design III</td>
</tr>
<tr>
<td>ARCH 34312. Architectural History III</td>
</tr>
<tr>
<td>ARCH 34212. Roman Urbanism and Architecture I</td>
</tr>
<tr>
<td>ARCH 34012. Advanced Graphics: Freehand Drawing</td>
</tr>
<tr>
<td>Total</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Second Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARCH 34122. Design IV</td>
</tr>
<tr>
<td>ARCH 34322 Architectural History IV</td>
</tr>
<tr>
<td>ARCH 34222. Roman Urbanism and Architecture II</td>
</tr>
<tr>
<td>ARCH 34022 Advanced Graphics: Watercolor</td>
</tr>
<tr>
<td>Total</td>
</tr>
</tbody>
</table>
Student Awards and Prizes

Henry Adams Medal and Certificate. This American Institute of Architecture (AIA) award honors the graduating architecture student who has the highest grade-point average for the complete course of study.

Henry Adams Certificate. This AIA award is given to the graduating architecture student with the second-highest grade-point average for the complete course of study.

Tau Sigma Delta Bronze Medal Winner. The Tau Sigma Delta medal is awarded to a graduating student selected by his or her peers in recognition of design excellence.

Andrew F. Kervick Award for Design and Drawing. Founded by Prof. Francis W. Kervick, former head of the School of Architecture in memory of his father, this award, selected by the fourth- and fifth-year faculty, honors the student whose work in freehand drawing in the fourth or fifth year has been of the highest merit.

Alpha Rho Chi. Selected by faculty, the Alpha Rho Chi Medal goes to the graduating student who has shown exceptional ability for leadership and has performed willing service for the School.

Ralph Thomas Sollitt Award. Founded in 1931 by Ralph Sollitt and Sons Construction Co., this award, selected by the School’s jury, goes to the student who submits the best work as a solution to a special problem in design and construction.

Ralph Thomas Sollitt Award. Founded in 1931 by Ralph Sollitt and Sons Construction Co., this award, selected by the School’s jury, goes to the student who submits the best work as a solution to a special problem in design and construction.

Alice Wesoloski Scholarship. For her decades of service to the School of Architecture, this award was established in honor of Ms. Wesoloski. Selected by the faculty and the Office of Financial Aid to provide tuition assistance to a student of particular ability, character and need.

Alliance Architects Scholarship. Selected by the faculty and the Office of Financial Aid to provide tuition assistance to minority students of particular ability and character.

David M. Schwartz/Architectural Services, Inc. Internship and Traveling Fellowship Award. A two-month paid internship for a fourth-year student and a graduate student entering the final year of his or her program with David M. Schwartz/Architectural Services, Inc. and a one-month travel fellowship involving independent research and study.

Ray Stuermer Memorial Award for Excellence in Design. Given in memory of former Professor Ray Stuermer, this award, selected by faculty, is given on the basis of design work through the fourth year for overall improvement and design excellence.

Frank Montana Rome Scholarship Award. Recipients are selected by the dean, second-year design faculty and the office of financial aid. The Montana scholarships were endowed by Prof. Frank Montana, chair of the Department of Architecture for 25 years and founder of the Rome program. The scholarships are for tuition assistance in connection with the Notre Dame Rome Studies Program.
Brian Cramlish Scholarship. Selected by the faculty, the Brian Cramlish Scholarship is awarded to the student who has displayed outstanding academic achievement in Building Technology and Structural Mechanics during the second year of study, and the Building Technology II and Structural Design during the fourth year of study.

Ricardo and Cristina Alvarez-Diaz Award in Architecture. Selected by a committee of students, this award is given to an undergraduate architecture student at the end of their fourth year in the program.

Robert Amico Studio Award. Selected by the dean and faculty for design excellence in the fourth or fifth year of study.

Jane Jacobs Award. Selected by the thesis faculty and the dean, this award is for demonstrated commitment to community and urban planning.

Liang Sun-Cheng Award. Selected by the fifth-year thesis jurors and the dean, this award recognizes excellence in non-Western architecture.

Michael and Julie Hanahan Architecture Prize. Selected by the students, this prize recognizes overall excellence in the study of architecture.

Rambush Prize in Religious Architecture. Selected by the fifth-year thesis jury and faculty, the Rambush Prize is given for the best solution to a problem related to a religious architecture project.

Leon Battista Alberti Award. For the graduate student with the highest grade-point average for the complete course of study in the post-professional degree program.

Ferguson & Shamamian Graduate Prize. The prize is selected by the jury to recognize superior achievement in classical design for a thesis project and the related investigation of an architectural idea that may serve as an enduring source of architectural inspiration.

Dean’s Graduate Award for Design Excellence in Architecture. Selected by the graduate thesis jurors and the dean, this award goes to overall excellence in a graduate thesis project.

Alvarez-Diaz & Villalon Internship. A two-month internship for a fourth-year student or a graduate student entering the final year of his or her program with Alvarez-Diaz & Villalon in Puerto Rico, and a stipend to cover airfare and housing.

Alvarez-Diaz & Villalon Award for Architectural Excellence in Sustainability. Selected by the faculty, the Cristina Villalon Diaz Award is given to a graduate student during their terminal year in the program.

Student Organizations

American Institute of Architecture Students (AIAS). Students begin to engage in the professional activities of the national AIAS by attending meetings and conventions and structuring activities within the School of Architecture. The AIAS sponsors educational, professional, and social events in the school.

Students for New Urbanism (SNU). SNU is a community of students from all majors that present, explore, discuss, and apply the ideals of New Urbanism and other “good urbanism” theories. Ideas especially focus on walkable neighborhoods, public transportation, affordable housing, new technology, sustainable architecture, and community participation in the context of creating healthy communities. SNU looks at the vitality of urban places and how to maintain and design great urban environments. SNU is composed of three main parts: Education (to teach others and our selves about urban design); Service (to help the communities in our area and be a part of the urban design process) and Connection (act as a facilitator between professionals and students among many disciplines that participate in the planning process).

Student Association for Women in Architecture (SAWA). SAWA is designed to encourage gender equality and diversity throughout the School of Architecture, the architecture profession, and our communities by providing a more diverse educational experience. Through collaboration with the AIAS and the SNU, we hold discussion groups with students and faculty, host guest lecturers and exhibits, create community outreach programs where architecture students educate local youth about the architecture school and the architectural profession, and support our local community through service projects.

Tou Sigma Delta. In 1961 the Sigma Chapter of Tau Sigma Delta, the national architectural honor society, was established at Notre Dame. The constitution of Tau Sigma Delta stresses as its sole function the encouragement of high scholastic standing. Election to membership is limited to the top 20 percent of the students in the School of Architecture who have completed 60 percent of their requirements for the professional degree.

Students for Classical Architecture promotes discussion regarding how best to incorporate architectural fundamentals into a contemporary curriculum. Students for Classical Architecture also supports local chapters of this organization at other institutions. We seek collaboration between these chapters and encourage dialogue between academic programs, to foster a gradual rebirth of tradition in education. Goals include: support of students around the world interested in traditions of architecture; supplementation of university curricula relevant to classical design through salons, lectures, and tours; lobbying NAAB and universities to offer classical studios, reinstate required history courses and promote an architectural curriculum based in tradition; educating public about the current state of architectural education.

Advisory Council

RON B. BLITCH
New Orleans, LA

JOHN H. BURGEE
Santa Barbara, California

RICHARD H. DRIEHAUS
Chicago, Illinois

HOLLY L. MIZELLE JOHNSON
Atlanta, Georgia

MARTIN G. KNOTT
Easton, Maryland

THERESA SMITH KORTH
Westfield, New Jersey

JAMES M. McMANUS
Glastonbury, Connecticut

KEVIN J. MULHALL
Glenview, Illinois

JULIAN D. MURPHY
Washington, D.C.

SEAN P. NOHELTY
Washington, D.C.

TIMOTHY I. PANZICA
Chagrin Falls, Ohio

MICHAEL G. RYAN
Minneapolis, Minnesota

MARIA SÁNCHEZ
Ciudad de Guatemala, Guatemala

JOHN FRANCIS TORTI
Washington, D.C.

ROBERT E. TURNER
Bensalem, Pennsylvania

MATTHEW M. WALSH
Burr Ridge, Illinois

MARK T. WRIGHT
Chicago, Illinois
The College of Arts and Letters is the oldest, and traditionally the largest, of the four undergraduate colleges of the University of Notre Dame. It houses 21 departments and several programs through which students at both undergraduate and graduate levels pursue the study of the fine arts, the humanities and the social sciences.

**Liberal Education.** The College of Arts and Letters provides a contemporary version of a traditional liberal arts educational program. In the college, students have the opportunity to understand themselves as heirs of a rich intellectual and spiritual tradition and as members of a complex national and international society. The faculty of the college are committed to the life of the mind, to the critical and constructive engagement with the whole of human experience. On the basis of a firm yet broad foundation, graduates of the college are equipped for a lifetime of learning in an ever-changing world. The overall curriculum and the specific major programs encourage students to approach issues reflectively, to analyze them carefully and to express their reasoned conclusions with clarity.

The intellectual quest conducted in the College of Arts and Letters takes place in an explicitly Catholic environment. Here ultimate questions of the meaning and value of human life before God are welcome, and efforts to deal with such questions utilize the immense resources of the Catholic tradition. Inquiry and faith are seen not as opposing forces but as complementary elements of the fully human pursuit of truth.

**Organization.** The college’s administrative center is the Office for Undergraduate Studies, located in 104 O’Shaughnessy Hall. All undergraduates in arts and letters are invited to consult with the assistant deans regarding questions about their academic progress, educational and career goals, and any other concerns of an academic or administrative nature. Pre-law, pre-med, and pre-graduate school advising are available in this office. In particular, sophomores in the college who have not yet declared a major should begin their pursuit for academic advising in this office.

Because education is not limited to the classroom, the college also sponsors or helps to subsidize events which are intended to enrich the undergraduate experience and facilitate faculty-student interaction both on and off campus.

**Curricula and Degrees.** The College of Arts and Letters offers curricula leading to the degree of bachelor of fine arts in Art (Studio and Design) and of bachelor of arts in:

- Africana Studies
- American Studies
- Anthropology
- Art:
  - Art History
  - Art Studio
  - Design
- Classics:
  - Arabic
  - Classics
  - Greek
  - Latin
  - Greek and Roman Civilization
- East Asian Languages & Cultures:
  - Chinese
  - Japanese
- Economics
- International Economics—Arabic
- International Economics—Chinese
- International Economics—German
- International Economics—Japanese
- International Economics—Roman Languages
- International Economics—Russian
- English
- Film, Television, and Theatre
- Gender Studies
- German and Russian Languages and Literatures:
  - German
  - Russian
- History
- Irish Language and Literature
- Mathematics (honors only)
- Medieval Studies
- Music
- Neuroscience and Behavior
- Philosophy
- Philosophy/Theology (joint major)
- Political Science
- Program of Liberal Studies
- Psychology
- Romance Languages and Literatures:
  - French and Francophone Studies
  - Italian
  - Romance Languages and Literatures
- Spanish
- Sociology
- Theology
- The college also offers supplementary majors, but not stand-alone first or degree-yielding majors, in:
  - Africana Studies (24 hours)
  - Arts and Letters Pre-health Studies (49 hours)
  - Art History (24 hours)
  - Asian Studies (24 hours)
  - Chinese (24 hours)
  - Classics (24 hours)
  - Computer Applications (CAPP) (24 hours)
  - French (24 hours)
  - Gender Studies (24 hours)
  - German (24 hours)
  - Greek and Roman Civilization (24 hours)

A prerequisite for admission of sophomores into the College of Arts and Letters is good standing at the end of the student’s first year.

The student must have completed at least 24 credit hours and must have satisfied all of the specified course requirements of the First Year of Studies Program: University Seminar; Writing and Rhetoric; two semester courses in mathematics; two courses in science or a foreign language, and two semester courses for the Moreau First Year Experience. (The University seminar will satisfy the relevant requirement in fine arts, literature, history, social science, philosophy or theology.) A student who does not meet these conditions is retained in the First Year of Studies until the conditions are met. The deficiencies must be removed at the Notre Dame Summer Session or in the student’s third semester at Notre Dame.

**Description of General College Requirements.**

Every student graduating from the College of Arts and Letters must have a minimum of 122 credit hours and must have fulfilled all University, college and major requirements. Unless special permission has been obtained in advance from the Office for Undergraduate Studies, special studies and directed readings courses do not satisfy university or college or major requirements.

<table>
<thead>
<tr>
<th>University Requirements Courses</th>
<th>Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Writing and Rhetoric</td>
<td>1</td>
</tr>
<tr>
<td>Mathematics</td>
<td>2</td>
</tr>
<tr>
<td>Natural Science</td>
<td>2</td>
</tr>
<tr>
<td>*History</td>
<td>1</td>
</tr>
<tr>
<td>*Social Science</td>
<td>1</td>
</tr>
<tr>
<td>*Theology</td>
<td>2</td>
</tr>
<tr>
<td>*Philosophy</td>
<td>2</td>
</tr>
<tr>
<td>*Fine Arts or Literature</td>
<td>1</td>
</tr>
<tr>
<td>Moreau First Year Experience</td>
<td>2</td>
</tr>
</tbody>
</table>

* One of these requirements must be a University Seminar.
**Student Awards and Prizes**

**Arts and Letters Requirements**

<table>
<thead>
<tr>
<th>Courses</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>College Seminar</td>
<td>1</td>
</tr>
<tr>
<td>Language</td>
<td>1–3</td>
</tr>
<tr>
<td><em>History/Social Science</em></td>
<td>1</td>
</tr>
<tr>
<td><em>Literature or Fine Arts</em> (whichever is not taken above)</td>
<td>1</td>
</tr>
<tr>
<td>Major</td>
<td>8–12</td>
</tr>
</tbody>
</table>

* The arts and letters student is required to complete both one fine arts and one literature course.

University requirements are described under “University Requirements,” in the front section of this Bulletin.

**Course Load.** The normal course load in the College of Arts and Letters is five courses. The maximum number of credit hours per semester is 17. Overloads for juniors and seniors are allowed only with the permission of the deans in the Office for Undergraduate Studies.

**Writing Requirement.** Students in arts and letters are required to complete one course in their major at the 30xxx or 40xxx level designated as a writing-intensive course. This course may satisfy other distributional requirements within the major.

Writing intensive courses require the student to work closely with a professor throughout the semester on a significant written project.

**Activity and Experiential Learning Courses.** Three elective credits of the required 122 hours can be derived/obtained from the following activity courses:

- Band (Marching and Concert)
- Orchestra
- Chorale
- Glee Club
- Liturgical Choir
- Folk Choir
- Music Lessons and Ensembles
- Ballet
- Debate
- Social Concerns Seminars

Exceptions will be made for music majors for music lessons and ensembles. If students complete more than three of these courses, these will appear on a student's transcript, but the extra credits will be subtracted from the student's total number of hours at the time the graduation check is made; hence, these will not count toward the 122 hours needed to graduate.

**Pass-Fail.** With permission from the academic dean, juniors and seniors may take one non-major, non-required elective course each semester on a pass-fail grading basis. Only the first course in a student's minor track may be taken on a pass-fail basis. These declarations must be made during the enrollment period of each semester, and once made, these declarations are irreversible. No Mendoza College of Business (MCOB) course may be taken pass-fail.

**Arts and Letters Degree Credit.** Students may not count both examination and degree credit for the same course toward graduation hours. For example, a student who has advanced placement credit for ROSP 20201 may not take ROSP 20201 and count both toward the 122 hours required in arts and letters. Students also may not count for degree credit both of two equivalent courses taught at Notre Dame. For example, PHIL 10101 and 20201 are considered to be equivalent courses, as are ECON 10015 and 20015. Students should take only one of each pair but not both. In cases where a student has double credit for the same course, the credits for only one course will be counted toward the student’s degree credit, despite the fact that credits for both will appear on the student's transcript. A list of equivalent math and science courses can be found at the end of the College of Science section of the Bulletin. The same rules about double credit apply to them.

No courses in logic will satisfy the University philosophy requirement. After matriculation into the college, it is the expectation that arts and letters students will complete any outstanding science requirements at Notre Dame by their second semester in the college.

**ROTC.** Credits received for 10xxx- and 20xxx-level ROTC courses do not count toward a student's 122 required credit hours, despite being recorded on the transcript. They will be manually subtracted from the student’s total number of hours in the graduation check and/or electronically in the Graduation Progress System (GPS) software. The College of Arts and Letters accepts a maximum of 12 free elective credits only for ROTC students from the 30xxx- and 40xxx-level military sciences only. Non-ROTC students may not take ROTC courses for credit toward graduation except by special permission obtained in advance of registering for the course from the deans in the Office for Undergraduate Studies. If a non-ROTC student registers in ROTC classes without first acquiring permission, these credits will appear on the student’s transcript, but the credits will be subtracted manually from the student’s total hours at the time the graduation check is made.

**Combination Five-Year Program with the College of Engineering.** In 1952, in cooperation with the College of Engineering of the University, the College of Arts and Letters instituted a five-year program that combines a liberal arts program with the requirements of the various engineering programs. Students who complete the combination program will earn two degrees: the degree of bachelor of arts and the degree of bachelor of science in the engineering major pursued. Dual degree students are eligible to join the Reilly Program in Engineering and Arts and Letters described at [http://reilly.nd.edu/reilly-dual-degree-in-arts-and-letters-and-engineering/](http://reilly.nd.edu/reilly-dual-degree-in-arts-and-letters-and-engineering/).

**Study Abroad.** In light of the expansion of Notre Dame's education abroad opportunities, students are encouraged to participate in University programs whenever possible. For students whose academic or programmatic needs cannot be met through existing Notre Dame programs, limited exceptions to allow a student to attend non-Notre Dame programs abroad will be made on an individual basis after extensive consultation among the students, their faculty advisors, and the deans.

**Student Awards and Prizes**

**COLLEGIATE AWARD IN MODERN AND CLASSICAL LANGUAGES**

The Robert D. Nuner Modern and Classical Language Award—presented to the graduating senior in the College of Arts and Letters with a first or second major in any classical or modern foreign language, who has earned the highest cumulative grade point average.

**AFRICANA STUDIES**

The Wright, Flint-Hamilton & Mason Directors Award—recognizing excellence in research on a topic exploring social, political, economic and/or cultural aspects of the African and African American Diaspora.

**AMERICAN STUDIES**

The J. Sinnot Meyer Award for Outstanding Service to the Community—J. Sinnot Meyer was to have graduated from Notre Dame in the spring of 1920. Instead, he died in February of that year. Mr. and Mrs. A.R. Meyer of Paducah, Kentucky, established the J. Sinnot Meyer “Burse” in memory of their beloved son. The Meyer Award is given for outstanding service to the community here at Notre Dame and beyond (i.e., local, state, and national levels of service). This award is available to an American Studies senior major.

The James E. and Barbara Murphy Award for Exceptional Journalism—A 1947 graduate of Notre Dame, James E. Murphy entered the world of journalism while doing graduate work at the Medill School of Journalism, Northwestern University. He then joined ABC News Radio Network as a writer/editor. Murphy migrated to the field of public relations, returning to his alma mater as director of public information. From that day until his last assignment overseeing Notre Dames’ 150th birthday commemoration, Murphy’s influence was felt over the entire panoply of activities advancing the image of the University. After serving as the guiding hand of public relations for more than four decades, he retired as associate vice president for university relations. The Murphy award is given for exceptionally submitted journalism. This award is available to any American Studies major or journalism minor.
The Paul Neville Award for Excellence in Journalism—awarded to an undergraduate or graduate student for outstanding performance in writing. The award is given to an American Studies major or journalism minor.

The Professor James Withey Award for Notable Achievement in Writing—awarded to a senior for excellence in writing. The award is given to an American Studies major or journalism minor.

The Robert DaMattia Excellence in Anthropology Award—awarded to an American Studies major or anthropology minor.

The Helen Hritzu and Jewell Erickson Award—awarded for excellence in the study of Greek, Latin or Arabic.

The Liu Family Distinguished Achievement Award in Asian Studies—awarded to a senior for excellence in the study of Chinese.

The Mabel L. Mountain Memorial Art Award—awarded for excellence in studio art.

The Radwan and Allan Riley Prize in Design—awarded to a senior design major for excellence in his or her respective field.

The Radwan and Allan Riley Prize in Studio Art—awarded to a senior studio art major for excellence in his or her respective field.

The Paul Farmer Applied Anthropology Award—awarded to an outstanding senior majoring in anthropology.

The Dr. Robert Joseph Barnet Award—awarded to an outstanding Arts and Letters preprofessional senior.

The Reginald Bain Award—awarded to an outstanding graduating senior in theatre.

The Weber Award—awarded to the student who has achieved the highest academic average.

The John Joyce Award on the American Worker—awarded to a senior for excellence in the study of economics.

The John Joyce Award on the American Worker—awarded to a senior for excellence in the study of economics.

The Joseph P. O'Toole Jr. Award—awarded to the undergraduate who submits the best original poetry.

The Billy Maich Academy of American Poets Award—awarded to the undergraduate who submits the best original poetry.

The John Joyce Award on the American Worker—awarded to the graduating senior in film studies.

The Richard T. Sullivan Award for Fiction Writing—awarded to the undergraduate who submits the best original fiction manuscript.

The John Joyce Award on the American Worker—awarded to the undergraduate who submits the best original fiction manuscript.

The Robert DaMattia Excellence in Anthropology Award—awarded to an American Studies major or anthropology minor.

The Helen Hritzu and Jewell Erickson Award—awarded for excellence in the study of Greek, Latin or Arabic.

The Liu Family Distinguished Achievement Award in Asian Studies—awarded to a senior for excellence in the study of Chinese.

The Mabel L. Mountain Memorial Art Award—awarded for excellence in studio art.

The Radwan and Allan Riley Prize in Design—awarded to a senior design major for excellence in his or her respective field.

The Radwan and Allan Riley Prize in Studio Art—awarded to a senior studio art major for excellence in his or her respective field.

The Paul Farmer Applied Anthropology Award—awarded to an outstanding senior majoring in anthropology.

The Dr. Robert Joseph Barnet Award—awarded to an outstanding Arts and Letters preprofessional senior.

The Reginald Bain Award—awarded to an outstanding graduating senior in theatre.

The Weber Award—awarded to the student who has achieved the highest academic average.

The John Joyce Award on the American Worker—awarded to a senior for excellence in the study of economics.

The John Joyce Award on the American Worker—awarded to a senior for excellence in the study of economics.

The Joseph P. O'Toole Jr. Award—awarded to the undergraduate who submits the best original poetry.

The Billy Maich Academy of American Poets Award—awarded to the undergraduate who submits the best original poetry.

The John Joyce Award on the American Worker—awarded to the graduating senior in film studies.

The Richard T. Sullivan Award for Fiction Writing—awarded to the undergraduate who submits the best original fiction manuscript.

The Robert DaMattia Excellence in Anthropology Award—awarded to an American Studies major or anthropology minor.

The Helen Hritzu and Jewell Erickson Award—awarded for excellence in the study of Greek, Latin or Arabic.

The Liu Family Distinguished Achievement Award in Asian Studies—awarded to a senior for excellence in the study of Chinese.

The Mabel L. Mountain Memorial Art Award—awarded for excellence in studio art.

The Radwan and Allan Riley Prize in Design—awarded to a senior design major for excellence in his or her respective field.

The Radwan and Allan Riley Prize in Studio Art—awarded to a senior studio art major for excellence in his or her respective field.

The Paul Farmer Applied Anthropology Award—awarded to an outstanding senior majoring in anthropology.

The Dr. Robert Joseph Barnet Award—awarded to an outstanding Arts and Letters preprofessional senior.

The Reginald Bain Award—awarded to an outstanding graduating senior in theatre.

The Weber Award—awarded to the student who has achieved the highest academic average.

The John Joyce Award on the American Worker—awarded to a senior for excellence in the study of economics.

The John Joyce Award on the American Worker—awarded to a senior for excellence in the study of economics.

The Joseph P. O'Toole Jr. Award—awarded to the undergraduate who submits the best original poetry.

The Billy Maich Academy of American Poets Award—awarded to the undergraduate who submits the best original poetry.
Student Awards and Prizes

**LATIN AMERICAN STUDIES**

The Rev. John Considine, MM Award—awarded for outstanding student contributions to the study of, or service to, the Catholic Church in Latin America.

John J. Kennedy Prize for Latin American Studies—awarded to the senior who has written an outstanding essay on Latin America. (Occasionally there is a runner-up award).

The George Monteiro Prize—awarded to the senior who has written an outstanding essay in Portuguese.

**PHILOSOPHY**

The Dockweiler Medal for Philosophy—presented to the senior submitting the best essay on a philosophical subject.

The John A. Oesterle Award in Philosophy—awards given when merited to graduating philosophy majors for excellence in philosophy.

**POLITICAL SCIENCE**

The Gary F. Barnabo Political Science Writing Award—awarded for the best paper contributing to nonviolent solutions to world conflicts.

Paul Bartholomew Essay Prize—awarded to the senior major submitting the best senior honors essay in the fields of American politics or political theory.

The Guillermo O'Donnell Prize—for the best senior thesis in the field of comparative politics.

The Stephen Kertesz Prize—awarded to a senior major submitting the best senior honors essay in the field of international relations or comparative politics.

The Rooney Center for the Study of American Democracy Award—awarded to the student who submits the best senior honors thesis in the field of American politics.

**PROGRAM OF LIBERAL STUDIES**

The Otto A. Bird Award—awarded to the Program of Liberal Studies student who submits the best senior essay.

The Susan Marie Clements Award—awarded to a woman among the Program of Liberal Studies graduating seniors who exemplifies outstanding qualities of scholarly achievement, industry, compassion, and service.

The Edward J. Cronin Award—awarded annually to a student who submits the best essay in a Program of Liberal Studies course.

The Willis D. Nutting Award—given to the senior major who best embodies the department's high teaching and learning ideals.

The Stephen Rogers Award—presented to an outstanding Program of Liberal Studies senior pursuing graduate study.

**PSYCHOLOGY**

The John F. Santos Award for Distinctive Achievement in Psychology—to a senior psychology major in recognition of outstanding achievement in research, academic performance, and student-life activities.

Senior Recognition Award in Psychology—given in recognition of outstanding achievement in research, academic performance, and student-life activities, while pursuing a major course of study in psychology.

**ROMANCE LANGUAGES AND LITERATURES**

Robert D. Nuner Award—presented to the graduating senior in the College of Arts and Letters with a first or second major in any classical or modern foreign language who has earned the highest cumulative grade point average.

Eudoreanum for Excellence Award in Romance Languages and Literatures—presented to a graduating senior for excellence in Romance languages and literatures.

Walter Langford Awards for Excellence in Spanish Literature and Excellence in French Literature—two awards—to the graduating senior majors in French and Spanish literature whose work was deemed most outstanding by the Romance languages and literatures faculty.

The Joseph Italo Bosco Senior Award—awarded to a graduating senior for excellence in Italian Studies.

**THEOLOGY**

The Gertrude Austin Marti Award in Theology—presented to a graduating senior who has evidenced qualities of personal character and academic achievement in theological studies.

The Sociology Major Essay Award—presented to the senior sociology major who has written the best essay.

**THEOLOGY**

The Rev. Joseph H. Cavanaugh, C.S.C., Award—awarded to the senior who has evidenced high qualities of personal character and academic achievement, particularly in theological studies.
Service Awards

**AMERICAN STUDIES**

*J. Sinnott Meyers Award*—awarded to a senior in American Studies for outstanding service to the academic community.

**ECONOMICS**

*Lawrence J. Lewis Award*—awarded to the senior in the Department of Economics who has best distinguished himself or herself in community service.

**MUSIC**

*Band Vice President Prize*—annual award to the elected vice president of the band.

*Terry Baum Secretary Prize*—awarded to the secretary of the band and presented by the University of Notre Dame.

*Halland President’s Prize*—annual award for the outgoing president of the band.

*Thomas J. Kirschner Band Treasurer Prize*—annual award to the elected band treasurer.

*The Kobuk Memorial Scholarship*—for outstanding instrument achievement for band.

*Robert F. O’Brien Award*—for outstanding service and dedication to the band.

*Outstanding Band Member Award*—for loyalty, dedication, and leadership.

*Outstanding Marching Band Award*—awarded for dedication, ability, and leadership during marching band season.

*The Daniel H. Pektke Memorial Award*—presented to two underclassmen in the Notre Dame Glee Club in recognition of musical leadership, exemplary personal character and overall contribution to the success of the group.

*Gerald J. Smith Memorial Award*—awarded for citizenship and loyalty to band.

*Social Chairperson Award*—plaque given annually to the social chairperson in appreciation for dedication and service to the Notre Dame bands.

**PEACE STUDIES**

*The Peter Yarrow Award in Peace Studies*—awarded to an outstanding student in Peace Studies with a commitment to justice and service work.

**POLITICAL SCIENCE**

*George Brinkley Service Award*—awarded to the student who best exemplifies the Political Science Department’s ideal of public service through service to the department, the University, or the wider community.

**ROMANCE LANGUAGES AND LITERATURES**

*Carlos Aballi Award in Hispanic Cultural Awareness*—given to a graduating Hispanic student who has taken Spanish at Notre Dame and has been active in promoting Hispanic cultural awareness at Notre Dame.

*The Mara Fox Award for Service to the Hispanic Community*—awarded to a graduating senior who has performed outstanding service benefiting the Hispanic community.

*William Richardson Award in Hispanic Culture for an African American Student*—given to a graduating African American student who has shown an unusually strong interest in Hispanic culture through his or her active participation in campus and/or community projects or activities.

*Jose Tito Sigenza Award for Service to Hispanic Youth*—awarded to the senior who has studied Spanish at Notre Dame and contributed outstanding service to Hispanic youth.

**Special Arts and Letters Requirements**

**Language Requirement.** Students in arts and letters are required to reach intermediate proficiency in a foreign language, but “intermediate proficiency” is defined differently in each of the languages, depending on the complexity of the language itself and the intensity of the course. Check with the specific language department or the assistant deans in 104 O’Shaughnessy to determine which courses fulfill the requirements. Students without Advanced Placement or SAT II credit, but who come with some background in the language they elect will be placed by examinations given during first-year orientation and prior to spring preregistration. Departmental placement exams will not be credit-bearing. Students may receive up to eight hours of credit based on their scores on the AP and SAT II tests. If, for some reason, more than eight hours of credit appear on the transcript, the credits beyond eight will be non-counted and will be manually subtracted from the total number of degree credits counting for graduation. Regardless of the scores on these exams, it is impossible for a student to test out of the language requirement in the College of Arts and Letters. Every student in arts and letters must take at least one course at the appropriate level that deals with texts in the original language. For the specific details of a given language offering or program, check with the relevant department.

**College Seminar.** The College Seminar is a unique one-semester course shared by all students majoring in the College of Arts and Letters. Typically taken in the sophomore year, the course offers students an introduction to the diversity and distinctive focus of arts and letters at the University of Notre Dame. Specific sections of the College Seminars vary in their topics and texts, but all feature an interdisciplinary approach, commitment to engaging important questions, employment of major works, and emphasis on the development of oral skills. Every College Seminar syllabus will include works that approach the topic from the perspective of each of the three divisions of the college: the arts, humanities, and social sciences.

For descriptions of the University requirements, see “University Requirements” in the front section of this Bulletin.

**Arts and Letters Programs**

The programs offered by the College of Arts and Letters include majors, supplementary majors, and minors, which may be either departmental or interdisciplinary. Every student in the college must complete one major sequence. Supplementary majors and minors are optional and may be taken to supplement or enhance a student’s major but do not lead to graduation in and of themselves.

**Double-Counting**

In the College of Arts and Letters one course may be double-counted one time to fulfill a second major, supplementary major, or minor requirement and a University or college requirement. No course may be double-counted between majors and/or minors or between a first major and University or college requirements. University Seminar, by definition, fulfills a University or college requirement and is not considered a double count under this rule.

**Majors**

A major sequence is a carefully chosen combination of courses from an individual department or program that stands alone in qualifying students for an undergraduate degree. It usually consists of between 8 and 12 courses. In contrast to the University and college requirements that provide students with broad exposure to a variety of the liberal arts and sciences, the major affords the student an opportunity to gain more specialized knowledge of a particular field or discipline.

The major in liberal arts programs is normally declared during the sophomore year and is completed during the junior and senior years. Arts and Letters students must declare at least one major no later than the sixth class day of first semester of senior year. Each spring before preregistration, the college holds a series of programs and meetings to inform the students about the various majors so that they may make intelligent choices. Students pursue their majors under the direction of the departmental or program chair and its advising staff.

Supplementary majors are those that cannot stand alone in qualifying a student for an undergraduate degree but must be taken in conjunction with a
Minors

Minors are five-course sequences that can either be departmental or interdisciplinary. The college has three categories of minors: Departmental, Interdisciplinary, and Area Studies.

Departmental:
- Africana Studies
- Anthropology
- Art History
- Asian Studies
- Art Studio
- Chinese
- Classical Literature
- Collaborative Innovation
- French and Francophone Studies
- German
- Greek
- Greek and Roman Civilization
- Irish Language and Literature
- Italian
- Japanese
- Korean
- Latin
- Philosophy
- Portuguese and Brazilian Studies
- Russian
- Sociology
- Theology

For details, see the departmental descriptions in the section "Programs of Study."

Interdisciplinary:
- Business Economics
- Catholic Social Tradition
- Constitutional Studies
- Education, Schooling, and Society
- Gender Studies
- Hesburgh Program in Public Service
- International Development Studies
- Journalism, Ethics, and Democracy
- Liturgical Music Ministry

Electives

In addition to the University and college requirements and the major requirements, the balance of a student's usual five-course-per-semester program consists of elective courses, which can be drawn from the offerings of any department or college that are open to non-majors who have met the necessary prerequisites.

Medieval Studies
- Peace Studies
- Philosophy, Politics, and Economics
- Philosophy, Religion, and Literature
- Philosophy, Science, and Mathematics
- Philosophy Within the Catholic Tradition
- Poverty Studies
- Science, Technology, and Values
- Teaching English to Speakers of Other Languages
- Technology, Business, and Society

Area Studies:
- Africana Studies
- Asian Studies
- European Studies
- Irish Studies
- Latin American Studies
- Latino Studies
- Mediterranean/Middle Eastern Studies
- Russian and Eastern European Studies

Table of Contents
Africana Studies

Chair:
Dianne Pinderhughes, Professor, Political Science and Africana Studies

Joint Faculty:
Stuart Greene, Associate Professor, Department of English and Africana Studies
Paulinus Odioro, Associate Professor, Department of Theology and Africana Studies
(The Rev.) Hugh R. Page Jr., Dean, First Year of Studies; Vice President and Associate Provost for Undergraduate Studies; Associate Professor, Department of Theology and Africana Studies
Richard B. Pierce, John Cardinal O’Hara, C.S.C., Associate Professor of History and Africana Studies

Dianne Pinderhughes, Professor, Department of Africana Studies and Political Science
Maria McKenna, Associate Professor for the Practice, Department of Africana Studies and Education, Schooling, and Society

Affiliated, Concurrent, and Adjunct Faculty:
Jaimie Bleck, Assistant Professor, Political Science
Catherine Bolten, Associate Professor, Fellow of the Kellogg Institute for International Studies
Darren Davis, Professor, Department of Political Science
Robert A. Dowd C.S.C., Associate Professor, Political Science
Cyrainna Johnson-Roullier, Associate Professor, Department of English
Paul V. Kollman C.S.C., Associate Professor, Theology; Fellow, Kroc Institute for International Peace Studies; Director, Center for Social Concerns
Erin McDonnell, Assistant Professor, Sociology
Rory M. McVeigh, Department Chair; Professor, Sociology
Rahul Oka, Assistant Professor, Anthropology; Fellow of the Kellogg Institute for International Studies; Fellow of the Joan B. Kroc Institute for International Peace
Jacquetta Page, Adjunct Assistant Professor, Department of Africana Studies
Jason M. Ruiz, Associate Professor, American Studies; Fellow, Institute for Latino Studies
Todd David Whitmore, Associate Professor, Theology; Concurrent Instructor, Fellow of the Joan B. Kroc Institute for International Peace Studies

Office Coordinator:
Gayle Wilson, Department of Africana Studies

Please contact the Department of Africana Studies at 631-0397 or astudies@nd.edu, or contact Maria McKenna at mmckenn9@nd.edu.

The Department of Africana Studies at the University of Notre Dame is dedicated to the holistic and integrative study of Africans and people of African descent in the Americas and the global diaspora. Building on the legacy of the former African and African American Studies Program (1967–2005), the department emphasizes a cross-regional, cross-cultural perspective, a comparative analysis of and between different diasporan groups and the national and global contexts they inhabit. This multidisciplinary department seeks to explore the history, society, politics, economic development, philosophical, theological and theoretical perspectives, literature, arts, religions, and cultures of the peoples of Africa and the African diaspora. Its comparative and relational foci highlight the connections between culture, race, gender, class, nationality, and other categories of identity and experience.

The Department of Africana Studies aspires to become a center for academic and community activity, an innovative centerpiece for the University of Notre Dame. Undergraduates draw on a range of academic and community activities designed to stimulate intellectual inquiry, excellence in scholarship, and creative engagement.

Program of Studies. The major and minor in Africana Studies offer: (1) a disciplined and rigorous intellectual environment to study the histories, literatures, languages, and cultures of African and Afrodisporan peoples; and (2) an intellectual appreciation of the richness, diversity, and complexity of the African American experience—particularly when it is viewed within national and global contexts.

The department also has opportunities for dialogue, reflection, and social engagement within and beyond the classroom. Upon completion of all requirements, students will have received both a solid introduction to the discipline of Africana Studies and an appreciation of how it interfaces with other areas in the humanities, arts, social sciences, and theological disciplines.

Africana Studies degree options for Notre Dame undergraduates consist of a major (30 credit hours), including a “capstone” experience consisting of a senior project or thesis, an interdisciplinary minor (15 credit hours) and a supplementary major (24 credit hours).

Please note: The Introduction to Africana Studies course is often only offered in the fall of each academic year. While it is not an official pre-requisite for many Africana Studies courses, we recommend students take it prior to other coursework in the department.

Major (30 credit hours)
Introduction to Africana Studies (3 credit hours)
Interdisciplinary Requirement (9 credit hours)
Students will choose one AFST course from each of the following disciplines: literature/fine arts, history, and social science.

Senior Project or Senior Thesis (6 credit hours)
Four elective AFST courses (12 credit hours)

Supplementary Major (24 credit hours)
Introduction to Africana Studies (3 credit hours)
Interdisciplinary Requirement (9 credit hours)
Students will choose one AFST course from each of the following disciplines: literature/fine arts, history, and social science.

Four elective AFST courses (12 credit hours)

Minor (15 credit hours)
Introduction to Africana Studies (3 credit hours)
Interdisciplinary Requirement (9 credit hours)
Students will choose one course from each of the following disciplines: literature/fine arts, history, and social science.

One elective AFST course (3 credit hours)

COURSE DESCRIPTIONS

All of the courses associated with this academic program can be found online at registrar.nd.edu/students/class_search.php. The scheduled classes for a given semester may be found by clicking on “Class Search” and selecting the subject Africana Studies. Course descriptions can be found by clicking on the subject code and course number in the search results.
American Studies

Chair:
Thomas A. Tweed

Director of Undergraduate Studies:
Jason Ruiz

Interim Director Native American Initiatives:
Brian Collier

Assistant Director Native American Initiatives:
Robert Walls

W. Harold and Martha Welch Professor American Studies

Concurrent Faculty:

Adjunct Associate Professor:

Assistant Professional Specialist:

Professor Emeritus:

W. Harold and Martha Welch Professor America Studies

Professor:
Erika Doss; Thomas Tweed; Robert Schmuhl

Professor Emeritus:
Thomas J. Schlereth; Ronald Weber

Associate Professors:
Annie Gilbert Coleman; Jason Ruiz; Kathleen Sprows Cummings; Benedict Giamo; Sophie White

Assistant Professors:
Perin Gurel; Korey Garibaldi

Assistant Professional Specialist:
Robert Walls

Adjunct Associate Professor:
Jack Colwell

Concurrent Faculty:
Gail Bederman (History); Catherine Cangany (History); Gilberto Cardenas (Sociology); Jon Coleman(History); Brian Collier (ACE); James Collins (Film, Television and Theatre); Dennis Doordan (Architecture); Stephen Fredman (English); Patrick Griffin (History); Sandra Gustafson (English); Eugene Halton (Sociology); Darlene Hampton (CUSE); Cyra Johnson-Roullier (English); Michael Kackman (FTT); Mar Lyn Keary (FTT); Mary Ellen Konieczny (Sociology); Jose Limon (English); Kate Marshall (English); Timothy Matovina (Theology); Terry McDonnell (Sociology); John McGreevy (History); Rebecca McKenna (History); Susan Ohmer (Film, Television, and Theatre); Richard Pierce (History); Diane Pinderhughes (History); Valerie Sayers (English); Kerry Temple (Notre Dame Magazine); Laura Dasso Walls (English); Matthew Wilkins (English); Pamela Wojcik (Film, Television and Theatre).

The Discipline. Since its inception in the late 1930s, the discipline of American Studies has aimed to foster new understandings of America and its multiple peoples and cultures in a rapidly changing world. Its focus on the historical and intellectual underpinnings of the cultures, societies, religions, and politics of colonial America and the United States has continually returned to one central question: What does it mean to be an American? As the answers to this question have changed in response to demographic, economic, and political transformations, the discipline of American Studies has continually re-examined its methods and central questions. Shifting from an earlier emphasis on American uniqueness, or exceptionalism, American Studies has been for the past several decades the most creatively and rigorously engaged in analyzing the complex and multi-layered expressions of American pluralism and diversity.

Program of Studies. American Studies offers interdisciplinary perspectives on American cultures and societies, American identities, and American political cultures and institutions. The curriculum introduces students to the major ideas and methods of the discipline, hones critical understandings of these methods in advanced courses, and ends with senior level seminars aimed at the highest level of research. To add stature and credibility to the major, a 6-credit Senior Thesis is offered, allowing exceptional students the opportunity to sharpen their critical abilities and improve their research techniques by developing a year-long project. Students are introduced to the themes and issues dominant in American Studies (AMST) in Introduction to American Studies, taken at the freshman or sophomore level and intended as a gateway to the major. This required course, which explores key concepts, texts, and methods in American Studies and familiarizes students with the discipline’s working vocabulary and practices, is offered in the fall semester, and should be taken before students take AMST courses at the 30000 level. It may be taken concurrently with a 30000-level course in AMST, pending approval of a faculty advisor in American Studies.

The introductory course is followed by eight different upper-level courses in AMST, each of which continues to explore concepts, texts, and methods particular to the discipline of American Studies. Of the eight upper-level courses, up to two “outside” courses may be taken from different departments, either on campus or through an off-campus Notre Dame program, as long as they are cross-listed with American Studies or otherwise approved by the Director of Undergraduate Studies.

Finally, AMST majors complete their coursework with the Senior Seminar in American Studies, a required 40000-level course which serves as a capstone to the major. Requirements include seminar-style discussions and a significant research project.

American Studies Major Requirements:

Students must complete the general requirements of the College of Arts and Letters and 30 credit hours in American Studies, including the introduction to American Studies, eight upper-level courses, and a senior seminar.

Internships. Students are encouraged to pursue internships over the summer and during the semester that enhance and apply their coursework in American Studies. If the internship is not paid and relates to American Studies, students may earn elective credit for that experience, upon approval from the Director of Undergraduate Studies. For further details, please review the description for the course AMST 25001 “Internship in American Studies.”

Study Abroad. Upon approval of the Director of Undergraduate Studies, students may take up to 6 credit hours of course work abroad towards the major.

American Studies Senior Thesis. A senior thesis is a year-long research project developed with a faculty advisor that attempts to make a contribution to the field of American Studies. The final project may take on a variety of forms, including a scholarly paper, narrative nonfiction essay, journalistic article or series of articles, documentary film, or museum exhibition. The opportunity to write a Senior Thesis in American Studies is open to any major with a GPA of 3.5 or higher within the major as of January of their junior year. In exceptional circumstances students with a GPA below 3.5 may apply. Writing a thesis is a chance to do original research and explore a topic of your choice, to develop a deeper relationship with a faculty member, and to put what you’ve learned as an American Studies major into practice. It is also a significant commitment. Students need one if they want to earn departmental honors in American Studies, but they do not need one to satisfy the requirements for the major. Students writing a senior thesis must register for 6 credit hours in addition to the 30 required for the major, distributed as noted below.

Students choosing to write a senior thesis will submit a formal application to the department by April 1 of their junior year, which requires: 1) An idea for the project, including central research questions, sources and research that will answer those questions, the student's method or approach, and the shape of the final project; 2) A primary advisor who has agreed to help with the project. The primary advisor must be a full-time tenured or tenure-track faculty member in AMST and will be the instructor of record for the thesis project; 3) Information on grants applied for and won. Application forms and additional information are available through the departmental website.

Once accepted, students should confirm their plans with their primary advisor and be sure to register in the fall for the Senior Thesis AMST 43909 (3 credit hours). This course is limited to thesis writers, will meet during a regular class time, and is required. It is designed to help students develop their thesis projects, conduct research, and think about how their work relates to the field of American Studies. Students will work closely with the instructor and their primary advisor, and less formally with a secondary advisor of their choice. Students writing a thesis and thus enrolled in The Senior Thesis AMST 43909 have the option to take, as their tenth class required for the major, either a senior seminar or an additional “inside” 30000-level class.

In the spring students will register for Senior Thesis...
Writing AMST 47910 (3 credit hours). This course is independent work with the primary advisor; students will complete their research and writing, as well as plan and give presentations of their work. The final senior thesis project is due in early April.

Thesis writers are expected to fulfill all the requirements for the major and remain in good academic standing. Those who fail to show good progress or maintain a satisfactory GPA will be asked to abandon their thesis project. Theses will be evaluated by both the primary and secondary advisors. Students will present their projects to students and faculty in April at the departmental celebration of research; presentation at the Notre Dame Undergraduate Scholar's Conference is encouraged. Every thesis will be honored at the departmental commencement event and recognized on the departmental website.

**Departmental Honors.** Completion of a senior thesis is a central requirement for earning departmental honors, but not the only one. Honors in American Studies will be conferred upon graduating seniors in three levels: highest honors, high honors, and honors, based on 1) the originality and significance of the student's senior thesis; 2) the excellence of the student's GPA in the major as of January senior year; and 3) the student's degree of engagement with the field of American Studies, as demonstrated by participation in relevant lectures, conferences, internships, grants and fellowships, conversations with scholars, and completion of additional advanced courses. Students seeking departmental honors must submit a one page statement describing their engagement with the field to the department by April 15 of their senior year. All students receiving honors will be recognized at the departmental commencement ceremony. For more information see the departmental website or contact the Director of Undergraduate Studies.

**COURSE DESCRIPTIONS**

All of the courses associated with this academic program can be found online at registrar.nd.edu/students/class_search.php. The scheduled classes for a given semester may be found by clicking on “Class Search” and selecting one or more of the following subjects:
- American Studies
- Journalism, Ethics & Democracy

Course descriptions can be found by clicking on the subject code and course number in the search results.

---

**Anthropology**

**Chair:**
Agustín Fuentes

**Edmund P. Joyce Professors of Anthropology:**
- Roberto A. DaMatta (emeritus); James J. McKenna

**Professors:**
- Susan Blum; Leo A. Despres (emeritus); Agustín Fuentes; Ian Kuijt; Carolyn Nordstrom (emeritus); Irwin Press (emeritus); Mark R. Schurr; Lawrence Sullivan (concurrent)

**Associate Professors:**
- Maurizio Albahari; James O. Bellis (emeritus); Catherine Bolten; Meredith S. Chessel; Rev. Patrick D. Gaffney, C.S.C.; Donna Glowacki; Joanne M. Mack (emeritus); Kenneth E. Moore (emeritus); Susan S. Sheridan; Vania Smith-Oka

**Assistant Professors:**
- Christopher Ball; Alex Chávez; Lee T. Gettler; Rahul Oka; Natalie Porter

**Director of Graduate Studies:**
Vania Smith-Oka

**Director of Undergraduate Studies:**
Eric Haanstad

**Affiliated Faculty:**
- Ann-Marie Conrado, Concurrent Assistant Professor, Art, Art History and Design; Paulette Curtis, Associate Professional Specialist; Diarmuid Ó Giolláin, Professor, Department of Irish Language and Literature; David Hernandez, Assistant Professor, Department of Classics; Carlos Jáuregui, Associate Professor, Romance Languages; Peter Jeffery, Professor, Department of Music; José Limón, Professor, Department of English, Fellow, Institute for Latino Studies; Matthew Ravosa, Professor, Department of Biological Sciences; Karen Richman, Director, Associate, Professional Specialist, Border and Interamerican Affairs; Deborah Rotman, Associate Professional Specialist, Director, Center for Undergraduate Scholarly Engagement; John Sherry, Professor, Department Chair Marketing; Lawrence Sullivan, Professor, Department of Theology; Robert Walls, Concurrent Assistant Professor, Department of American Studies; Todd Whitmore, Associate Professor, Department of Theology

**Program of Studies.** The undergraduate program in anthropology is designed to provide each student with a broad, holistic, integrated and species-wide perspective on contemporary human behavior. Anthropology may be the only major that provides significant intellectual and professional links with the humanities and other social science fields, while also providing separate bridges into both the natural sciences and the field of business. In so doing, the anthropology major prepares students for successful entry into any number of fields and disciplines and their appropriate professional graduate schools, including medical schools, public health, and law. Human evolutionary models, critical comparative analyses, ethnographic methods, and a variety of developmental approaches are taught and applied in our classes to such diverse topics and research areas as: health; illness; addiction; human communication (verbal and non-verbal); human origins; the nature of social groups; the family; worldwide political and socio-economic systems; religion; warfare; infancy and childhood; non-human primate ecology and behavior; archaeology; prehistory, and ethnology; sexuality; museum studies; evolutionary medicine; transnationalism; sex and gender; food; and medical anthropology. Geographic specialties of the faculty include China, Southeast Asia, North America, Latin America, Russia, Italy, Ireland, Egypt, Central and Southern Africa, and the Middle East.

In moving toward our goal to achieve national prominence as one of the top undergraduate research and teaching departments in the nation, our faculty stress the importance of innovative and significant undergraduate research. We aim to provide as many majors as is possible with hands-on research experiences in both the field and laboratory. Smithsonian and Chicago Field Museum summer research internships created by the department are available to majors. The department also administers a paid summer internship with J.F. New Environmental Consultants. It is common throughout the school year and summer that the faculty pair up with students to conceptualize and work together on research projects both here and abroad. Often this collaborative research leads to joint publications. Our undergraduate students receive many undergraduate research awards from the University and regularly attend national professional meetings to stand alongside graduate students and professors from around the nation to present the results of their research. Our anthropology minors also participate to a high degree.

Aside from its applicability and relevance across different disciplines, professions, and careers, one of the truly unique aspects of anthropology is that it changes in a most profound and insightful way the manner in which our students experience and come to interpret their own lives. The subject of anthropology is humankind as viewed not through a local lens limited by the biases or world view of one's own culture, but by a view that attempts to reconcile and understand the intersecting and sometimes conflicting, yet, often logical alternative ways by which our fellow human beings live and think.

Perhaps it is the result of this very personal encounter, experienced alongside exposure to the very best scholarship, that permits our anthropology students to connect so easily and successfully with diverse professional communities. This relative fluidity by which our graduates make the transition into so many varied fields, the knowledge and skills gained by studying anthropology, in addition to providing keen insights into others, enriches one's understanding of one's self. In this way anthropology maximizes the chances of personal achievement and self-fulfillment, and proves a surprisingly powerful beginning point for just about any career.
Art, Art History, and Design

Chair: Richard Gray

Professors: Rev. Austin Collins, C.S.C.; Jean Dibble; Dennis Doordan; William Kremer; Martina Lopez; Scott Shim; Maria Tomasula

Associate Professors: Richard Gray; Heather Hyde Minor; Rev. Martin Lam Nguyen, C.S.C.; Robin Rhodes; Michael Schreffler

Assistant Professors: Ann-Marie Conrado; Jason Lahr; André Murneika; Nicole Woods

Assistant Professional Specialists: Emily Beck; Michael Elwell; Elyse Speaks

Website: http://artdept.nd.edu/

The Department. The Department of Art, Art History, and Design at the University of Notre Dame, is a multidisciplinary department offering programs of study in studio art, art history, and design. The mission of the department is to provide students with intellectually informed, hands-on instruction in creative studies within the context of a liberal arts university. An active lecture and visiting artist series and the extensive collections of the Snite Museum of Art strengthen and broaden the work in the classroom and studio. The South Bend and Chicago areas provide additional cultural activities and experiences.

The department has fifteen studio art and design faculty, and seven art history faculty. Undergraduate students may pursue coursework leading to one of two degrees: the bachelor of arts (BA) in studio art, art history or design; or the bachelor of fine arts (BFA) in studio art or design. A minor in studio art is also offered to those students who wish to add experience in visual art to their undergraduate studies.

The departmental office is located in Riley Hall along with all studio art facilities, classrooms, and studio faculty offices. The art history classrooms are on the first floor of O’Shaughnessy Hall and the art history faculty offices are in Decio Faculty Hall. The design classrooms, studios, and design faculty offices are located in West Lake Hall. Skilled technical staff and support facilities are available as appropriate for each medium that is offered. The Center for Creative Computing operates five specialized computing labs for studio and design work including a professional digital printing studio in Riley Hall.

Students with a degree in creative studies are uniquely competitive among job-seeking graduates today. It is well recognized that creative study fosters methods of scholarship and production that employers and research institutions alike find compelling. A creative person draws on innovative approaches to solve problems; is willing to take initiatives in the face of ambiguity and uncertainty; is able to accept critical feedback to revise or expand an idea; can successfully communicate the value of their approach to others; and has the ability to mobilize resources to realize their ideas in an original form. In short, creative study is essential to the educational preparation needed to compete in the complex world culture we work and live in today.

Writing-Intensive Requirement: The Department of Art, Art History, and Design fulfills the College of Arts and Letters writing-intensive requirement by requiring all majors in each of the three departmental areas (ARST, DESN, and ARHI) to enroll in at least one upper-level (3xxxx or 4xxxx) art history course. All upper-level ARHI courses include a writing component that satisfies the College of Arts and Letters writing-intensive requirement.

THE STUDIO ART AND DESIGN MAJOR AND MINOR IN STUDIO ART

Bachelor of Arts Degree in Studio Art and Design

The Bachelor of Arts degree program in art and design is defined as a general liberal arts degree. The BA degree is ideal for the student who desires a liberal education with a strong emphasis in art. Students enrolling in the BA degree program are required to complete a five-course core curriculum during their first three semesters. These courses are Drawing 1, 2-D Foundations, 3-D Foundations, one course treating material from before 1600 taught by a regular full-time art historian in the department, and one course that treats material from after 1600 taught by a regular full-time art historian in the department. Students are not required to select a major concentration for the BA degree, but some focus of study is encouraged. The BA degree consists of 36 hours in art and design, of which 27 are in major concentration for the BA degree, but some focus of study is encouraged. The BA degree consists of 36 hours in art and design, of which 27 are in

Bachelor of Arts Senior Thesis

The BA Senior Thesis is comprised of two 3-credit independent study courses taken in sequence, fall/spring of the senior year. It is a special two-semester course sequence designed for the most talented and motivated department majors who wish to develop a capstone project during their senior year.

These two BA Thesis courses count toward two general studio electives for the 36-credit BA degree.

Bachelor of Fine Arts Degree in Studio Art and Design

The Bachelor of Fine Arts degree program in art and design is intended for the student who wishes to pursue a professional career in the visual arts. The program is organized into a four-year sequence of study that provides a solid understanding of art and art history. The student has an opportunity to explore a variety of curricular options and then chooses an intensive and professional major concentration. In addition to a primary concentration, BFA students are encouraged to select a secondary area of interest to broaden their thinking and to enrich their creative study. BFA candidates share a close working relationship with professional artists and researchers through a variety of experiences, including studio courses, workshops, internships, artist residencies, and independent study. The program culminates in a final senior exhibition, a portfolio submission, and a comprehensive thesis project. The Bachelor of Fine Arts degree prepares students for careers in the visual arts, including teaching, design, curating, arts administration, and art criticism.
STUDIO ART AND DESIGN CONCENTRATIONS

Studio Art Concentration
The Studio Art major is designed both for the student artist and the student interested in art as a second major or minor. Courses are offered in painting and drawing, ceramics, photography and video, printmaking, and sculpture. The Studio Art major provides an excellent basis for continuing work in graduate school and pursuing art-related fields such as design, art criticism, teaching, museum and auction house work, art therapy, media and publishing, commercial photography, exhibition design, and advertising.

The Studio Art major provides students with an opportunity to develop the techniques, visual sensibility, and historical understanding necessary for working with various materials. The mission of the major is to provide students with intellectually informed, hands-on instruction in creative studies within the context of a liberal arts university. One of the inherent values of visual art is that by giving tangible form to the social, political, and private aspects of human existence, it makes visible the invisible; it provokes the expansion of intellectual boundaries, gives form to complex ideas, reveals deep but abstract emotions and extends our capacity to comprehend the lives of others. Each of the programs in our department offers a distinct means of confronting and understanding the important visual aspects of our wider engagement with and construction of the world.

Ceramics Concentration
Ceramics is a concentration emphasizing clay and glaze as the primary vehicles for expression. Traditional pottery, vessel making, and sculpture may be addressed through a variety of processes that include hand building, throwing, and casting. Students are encouraged to develop technical skills and a direction of their own choosing. In addition to traditional ceramic materials and processes, students will be encouraged to study and utilize other sculptural media, as well as become familiar with contemporary and historical source material that will inform their own directions in ceramics.

Painting Concentration
Painting, with its many traditions, is a medium put to an extraordinary diversity of contemporary uses. Capable of representing everything from the material to the intangible, painting continues to be a means for artists of vastly different interests to address their subjects in highly individual ways. The painting concentration at Notre Dame fosters the aesthetic, critical, and technical development of each student through a program of course work, independent study, and regular critiques. Emphasis is placed on being well versed in contemporary critical issues, on arturilizing individual themes, and on developing the technical means to give visual form to thematic concerns.

Photography Concentration
Photography is arguably the most important documents of the 21st century, operating at the intersection of communication, commerce and culture. The photography program educates students to be technically skilled, visually literate and creatively prepared for a world where photography, video and streaming media permeate our everyday experiences. Beginning with foundation work through senior thesis, courses are designed to inform students about photograhic traditions while engaging them in the critical issues and methodologies of contemporary practice. The photography major prepares students for a career in visual media (including fine art, media communications or advertising), education or institutional professions at galleries, museums or auction houses.

Printmaking Concentration
Printmaking is a vital, visual, graphic process by which one may engage in a conversation with the world. In fact printmakers all over the world are in constant contact, exchanging exciting information and keeping current with the ever-shifting flow of ideas.

Printmakers’ work encompasses a wide range of practice: from stenciled art spray painted on a sidewalk to very fine prints made on paper, from a one-inch square print to wrapping an entire building in a print. Printmakers are involved with a very dynamic form of art.

At Notre Dame, students learn about current cultural and critical issues and how printmaking addresses them. As students learn about the various matrices, techniques and technologies of a wide range of printmaking (including relief, photolithography, intaglio, screen-printing, digital processes, papermaking and the making of books), they will develop their aesthetic, critical and technical skills.

Sculpture Concentration
Sculpture today encompasses diverse materials and contexts for the expression of ideas in space. Within this broad description, students are encouraged to develop the technical skills that will help them expand their ideas into thoughtful individual expression. We embrace a breadth of vision and experience, which will challenge the student to investigate and respond to contemporary issues through problem-solving. A full range of traditional and non-traditional media are available in specific courses and through individual mentoring. By blending required and elective courses and independent study, students can experience a curriculum that responds to their particular needs and direction.

Design
Design is the order of form and the control of function; it is what designers do. Humans are conditioned to make decisions on the basis of appearance and contextual input, accepting or rejecting information and material goods in response to a variety of visual cues. Effective, user-centered design can do more than attract interest or manipulate
perception: it can enable people. Good design and careful planning can promote understanding, simplify use, improve safety, instill confidence, add value, and create community.

At Notre Dame, undergraduate design education begins with immersion into the liberal arts curriculum. This social, philosophical, critical, ethical, and historical experience helps build a foundation of cultural understanding that naturally informs the creative and problem-solving methods. Responsible designers, consequently, approach the development process with sensitivity for human need, human aspiration, and the functional requirements for both production and implementation. At its best, design serves the spectrum of needs from individuals to constituencies in industry, society and the global environment.

Though design has been part of the Notre Dame curriculum since the early 1950s, students enjoy the advantages of a campus that provides access to current technologies. Technically advanced collaborative teaching spaces and digital labs support all student design activities, including an on-site 20-station 2D computer studio, a 16-station 3D computer studio, and a high performance digital imaging studio, all maintained by the services from Notre Dame’s Center for Creative Computing. In addition, a model shop provides rapid prototyping capabilities ranging from traditional hand tools to precision computer controlled fabrication and 3D printing. Intermediate and advanced level undergraduate students share an energized design community with defined studio spaces located in close proximity to all design-related resources and facilities in the Design Center at West Lake Hall.

Visual Communication Design Concentration
At its most basic level, visual communication design is a creative process that combines the visual arts and technology to communicate ideas. In the hands of a talented designer, these ideas are transformed into visual communication that transcends mere words and pictures. By controlling color, type, movement, symbols, and images, the designer creates and manages the production of visuals designed to inform and persuade a specific audience. By combining aesthetic judgment with project management skills, designers develop visual solutions and communication strategies. The professional designer works with writers, editors, illustrators, photographers, codewriters, and printers to complete compelling designs that effectively communicate a message.

At Notre Dame, the undergraduate graphic design curriculum begins with a foundation in the liberal arts. Such a basis is a design student’s best path to meet and solve the varied communication challenges inherent in today’s complex world. Because a design solution may emerge from the humanities, an algorithm, or a scientific discovery, the curriculum provides a student with the opportunity to be firmly grounded in the fundamentals of design and the visual arts, while also taking courses in science, math, history, philosophy, and theology. As students progress through the tiered design program, they develop as a designer, as an intellectual, and as a moral person, prepared to address the social, ethical, and political circumstances influenced by the design profession.

At its core, the Notre Dame visual communication design program asserts that the designer can make a difference not only in the strategic plan of a business but also in the world. During their time on campus, students develop projects that aspire to positively influence the lives of culturally diverse people, critique the ethical dimensions of contemporary culture, and give visual form to complex social issues. As design professionals, Notre Dame graduates will be responsible for the future of our visual culture.

Industrial Design Concentration
Industrial designers give form to virtually all mass-manufactured products in our culture. They seek opportunity and advantage through identifying and solving problems. Their creative contributions impact the utility, appearance, and value of our tools and environment. Their most innovative solutions lie at an intersection of what is knowable and what is possible.

The industrial design profession demands excellent organizational skills, an awareness of visual and tactile aesthetics, human behavior, human proportion, material, process, and the responsible appropriation of resource, during and after use. Designers express conceptual proposals through a combination of well-developed drawing, physical modeling, computer modeling, writing, and verbal skills. Designers best serve the consumer through sensitive and innovative collaboration with art, science, engineering, anthropology, marketing, manufacturing, and ecology. Properly implemented, industrial design affords greater benefit, safety, and economy to all participants and recipients impacted by the product development cycle.

Notre Dame’s Industrial Design Program (NDID) is accredited by the National Association of Schools of Art and Design (NASAD) and maintains student chapter affiliation with the Industrial Designers Society of America (IDSA). NDID interacts with regional, national, and international corporate design and consulting offices in the form of annual conferences, sponsored projects, field trips, and internships.

THE ART HISTORY MAJOR
Notre Dame’s art history major is designed to equip our students with a broad overview of the development of Western art and to provide them with an in-depth knowledge of particular periods, problems, and research methods. The diversity and scholarly strength of our faculty and the research facilities of the Hesburgh Library, including the Medieval Institute, are supplemented by the rich resource of the Snite Museum of Art. With a permanent collection of over 21,000 works, the Snite Museum not only gives our students an invaluable firsthand acquaintance with important examples from all periods and many cultures—including distinguished collections of old master drawings, 19th- and early-20th-century photographs, and Pre-Columbian art—but also provides a wide range of opportunities for our students to gain practical museum experience in both volunteer and paid positions.

The University of Notre Dame offers a 33-hour Honors Program (11 courses), a 30-hour first major (10 courses), a 24-hour (8 courses) supplementary major in art history, and a 15-hour minor (5 courses). These degrees are intended not only for students who are already intent upon pursuing a career in an art museum or gallery or as a college or university professor, but also for those individuals who simply wish to learn more about Western civilization through the examination of some of its most beautiful, provocative, and informative objects.

MINOR IN COLLABORATIVE INNOVATION
The Minor in Collaborative Innovation offers students a dynamic catalyst for process-based, cross-disciplinary collaboration and learning between various academic departments in Arts & Letters, and wider disciplinary interests across the university. The minor seeks to build a strong core competency in design thinking and collaborative innovation to meet the growing demand for this skill among these various communities, attracting broad and diverse student enrollment and re-establishing the primacy of a humanistic, collaborative approach to the complex problems and integrated challenges facing a rapidly changing world.

The minor offers a five-course sequence starting with Design Matters, a large, introductory, lecture-based design-thinking. Declared minors will then cycle through a series of four additional courses introducing students to the various skillsets implicated in design thinking including research methods, visualization, and entrepreneurship. The minor culminates in the capstone course Collaborative Product Development, bringing the minor’s various disciplines (1st majors) together in fruitful collaboration with design majors to address industry sponsored projects addressing real world questions.

Fifteen credit hours are required for completion of this minor:

• 3 credits—DESN 20203 “Design Matters—Introduction to Design Thinking” (Students may not declare the minor until they are enrolled in or have completed this course.)
• 3 credits—DESN 41201/41202 “Collaborative Product Development” (capstone course required for all minors)
• 9 credits—Designated Collaborative Innovation courses.

THE UNIVERSITY OF NOTRE DAME
DEPARTMENTAL HONORS IN ART HISTORY AND THE SENIOR THESIS

The Honors Program will consist of 33 hours, as compared to 30 hours in the regular first major. First majors with a grade point average of 3.667 or above in Art History courses may petition the faculty for permission to enter the Art History Honors Program contingent upon maintaining this GPA level and the successful completion of an Honors Thesis. The student who wishes to be considered for departmental honors must select a thesis advisor with whom the student has taken courses in the area of specialization for the thesis. The student must petition the faculty with a one-page letter by the 10th week of the spring semester of the student’s junior year. The letter should be addressed to the Director of Undergraduate Studies for Art History. In the letter the student should give a brief indication of what and on which they are proposing to write her/his thesis and a brief account of her/his future plans. If the faculty approves, then in place of one of the elective art history courses or seminars the student will sign up for six credit hours of Honors Thesis credit, taking three hours in the fall semester of their senior year and three hours in the spring semester of their senior year.

Students who maintain the required 3.667 or higher GPA and successfully complete a senior thesis with a grade of A– or higher will earn Honors in Art History.

The Honors Track in Art History (by approval)
33 Total Hours
- One course or seminar in Ancient Art
- One course or seminar in Medieval Art
- One course or seminar in Renaissance or Baroque Art
- One course or seminar in Modern, American or Contemporary Art
- Theories of Art (ARHI 43576) (Taught only in the fall. To be taken during junior or senior year)
- Elective art history seminar
- Elective art history seminar
- Elective art history course or seminar
- Senior thesis (3 credit hours in the fall and 3 credit hours in the spring of senior year.)

Art History First Major
Art history first majors are required to take the Theories of Art seminar. In addition, the department offers courses in four areas of Western art: ancient, medieval, Renaissance and baroque, and modern (19th through 21st centuries). An art history major must take at least one course in each of these areas. It is strongly recommended that the four-course distribution requirement be fulfilled with 20xxx or 30xxx-level introductory courses taught by regular art history faculty on campus. Students must also have taken a minimum of two seminars in addition to Theories of Art. The Theories of Art seminar should be taken in either the junior or senior year.

Art History Supplemental Major
Students wishing to complete a second major in art history should take one course in each of the four departmental areas, two art history seminars, and two electives in art history. It is strongly recommended that the four-course distribution requirement be fulfilled with 20xxx- or 30xxx-level introductory courses taught by regular art history faculty on campus.

Art History Minor
Students wishing to minor in art history can do so by taking five art history courses (15 credit hours total). At least one of these courses must treat material prior to 1600, and at least one must treat material from 1600 to the present.

Courses taken for the second major or the minor cannot be counted in more than one university program.

Over the last 10 years, our undergraduate majors have presented scholarly papers at conferences throughout the Midwest; held prestigious summer internships in museums in New York, Washington, Chicago, and Baltimore; found employment in galleries and museums; and pursued graduate work at Columbia, Berkeley, Cornell University, Yale University, the University of North Carolina-Chapel Hill, the University of Virginia, the University of Texas, and the University of Michigan, among other institutions.

COURSE DESCRIPTIONS
All of the courses associated with this academic program can be found online at registrar.nd.edu/students/class_search.php. The scheduled classes for a given semester may be found by clicking on “Class Search” and selecting one or more of the following subjects:
- Art History
- Art Studio
- Design

Course descriptions can be found by clicking on the subject code and course number in the search results.

To Table of Contents
credit hours) in one of two areas of concentration: Classics or Greek and Roman Civilization.

Classics Major
5 courses in Greek or Latin language/literature: 20003 and above* 15
2 courses in non-primary language (Greek or Latin) 6
1 course in Greek or Roman History 3
2 Classics courses in English translation (CLAS) 6

*Students will typically choose one of the two classical languages, ancient Greek or Latin, in which to fulfill the language requirement at the advanced level. They will be required to take at least two semesters in the other language at the appropriate level. If students have sufficient background in both languages, it should be possible for them to complete the requirements of the major through a combination of intermediate and advanced courses in both languages, as long as the total number of language courses equals seven (21 credit hours) for the first major and five (15 credit hours) for the supplementary major.

Supplementary majors in Classics will be exempt from the two courses in the second classical language.

Greek and Roman Civilization Major
The History of Ancient Greece 3
The History of Ancient Rome 3
1 course in ancient archaeology 3
1 course in ancient literature 3
6 Classics courses in English translation (CLAS) or Greek and Latin language offerings* 18

*Students will be strongly encouraged, but not required, to include some language study in their six elective courses.

Supplementary majors in Greek and Roman Civilization are required to take only four elective classics (CLAS) courses in English translation or in Greek/Latin language.

MINORS IN CLASSICS

Minors provide students majoring in other areas with structure and certification for a variety of approaches to the study of Greek and Latin language, literature, and civilization.

Latin Minor
The Latin Minor provides a solid grounding in the philological and literary study of Latin texts of the classical period, or, for those who prefer, of Christian Latin literature. It consists ordinarily of five courses (15 hours) in intermediate or advanced Latin (CLLA 20003 and above). Students interested in later Latin texts are directed to the joint offerings of the department and the Medieval Institute.

Greek Minor
The Greek Minor provides a solid grounding in the philological and literary study of Greek texts of the classical and Hellenistic periods. It consists ordinarily of five courses (15 hours) in intermediate or advanced Greek (CLGR 20003 and above).

Greek and Roman Civilization Minor
The Classical Civilization Minor provides a broadly based orientation to the history and civilization of the classical world. It consists of five courses, three of which are required: The History of Ancient Greece, The History of Ancient Rome, and one course in ancient archaeology. The remaining two courses may be chosen either from CLAS courses, whether offered by the department or cross-listed by other programs, or from Greek and Latin language courses.

Greek and Roman Literature (in Translation) Minor
The Classical Literature in Translation Minor provides a broad experience of Greek and Latin literature studied in English translation. It consists of five courses, three of which are required: one course in Greek literature, one course in Roman literature, and Greek and Roman Mythology. The remaining two courses may be chosen either from CLAS courses, whether offered by the department or cross-listed by other programs, or from Greek and Latin language courses.

SENIOR THESIS/HONORS TRACK
Classics majors are admitted into the honors track by approval of the Director of Undergraduate Studies. To receive honors, a student must (1) complete all requirements for the major; (2) maintain a GPA of at least 3.65 in the major; (3) complete the Honors Seminar for the senior year; (4) and receive a grade of A– or higher for a 5,000–6,000 word honors thesis. Honors students work closely with a member of the Classics faculty, who guides their research project. For more information see http://classics.nd.edu/undergraduates/honors-and-research/.

MAJOR IN INTERNATIONAL ECONOMICS IN ARABIC
The new undergraduate major in International Economics in Arabic is a collaborative effort between the Department of Economics and the Classics Department. In pursuing this major, students take a minimum of eight economics courses and are also required to enroll in a one-credit “Exploring International Economics” course, preferably in their sophomore year, designed to foster the integration of the study of culture with the study of economics. Details about the requirements for this major can be found online at economics.nd.edu/undergraduate-program/academic-programs/majors/ie/.

MINOR IN MEDITERRANEAN/MIDDLE EAST STUDIES
An interdisciplinary focus defines this broad-based program that encourages a multidimensional approach to the Mediterranean world. This is achieved through a wide variety of courses and activities offered by departments that study southern Europe, North Africa, or the Middle East.

While language courses may serve as a component of the minor, students are offered opportunities to view the region in its full historical, cultural, and political context. In this way, students are given the opportunity to assemble a course of studies that best reflects their own interests.

Typical areas of focus might include the rich culture that developed in southern Spain as a result of the Christian, Muslim, and Jewish interactions there; the impact of the French language and culture on North Africa and the Middle East; or the contemporary Israeli-Palestinian conflict.

Requirements: (1) Intermediate Arabic (MEAR 20003); (2) the student’s choice of three courses that relate to the region of southern Europe, North Africa, or the Middle East; and (3) a final research thesis in consultation with the Arabic faculty that integrates coursework related to the student’s area of interest.

SYRIAC STUDIES
Syriac is a form of Aramaic that was the literary language of Jews and pagans in western Asia before expanding to become the common dialect of Aramaic-speaking Christians throughout the region. Early literature in Syriac preserves sustained evidence of the distinctive character of Aramaic-speaking Christianity that is largely unhellenized and that reflects the linguistic and cultural milieu of first-century Palestine.

Syriac literary culture reveals mutual and parallel dynamics in the development of Syriac Christianity and the emergence of Rabbinic Judaism. The study of Syriac is likewise of pivotal importance to an understanding of the thought-world of the pre-Islamic Middle East, the established Christian and Arab populations of the region, and the emergence of Islam in the seventh century.

STUDY ABROAD
Our students are encouraged to study abroad for a semester, especially in the Mediterranean basin at Notre Dame’s Rome Global Gateway. The Department also supports programs offered by the Intercollegiate Center for Classical Studies in Rome, College Year in Athens, and the American University in Cairo or in an Arab-speaking country. Credits earned for course work taken in approved programs can be used to fulfill our major and minor requirements. Studying abroad during the summer is also possible. Grants are available on a competitive...
East Asian Languages & Cultures

COURSE DESCRIPTIONS
All of the courses associated with this academic program can be found online at registrar.nd.edu/students/class_search.php. The scheduled classes for a given semester may be found by clicking on “Class Search” and selecting one or more of the following subjects:
• Classics in Translation
• Greek Language and Literature
• Latin Language and Literature
• Arabic Language and Literature
• Hebrew Language and Literature
• Middle East Literature in Translation & History

Course descriptions can be found by clicking on the subject code and course number in the search results.

East Asian Languages & Cultures

Chair:
Yongping Zhu (on leave)

Research Professor:
Robert M. Gimello

Professor:
Liangyan Ge (acting chair); Michael Hockx

Associate Professors:
Michael C. Brownstein; Lionel M. Jensen;
Xiaoshan Yang; Yongping Zhu

Professional Specialist:
Noriko Hanabusa

Associate Professional Specialist:
Hana Kang; Chengxu Yin; Yeonhee Yoon

Assistant Professional Specialist:
Congcong Ma; Sayuri Oguchi; Wei Wang; Weibing Ye

Mission Statement: The peoples of East Asia comprise one quarter of the world’s population and account for a similar proportion of the world’s production and consumption. This, along with the contemporary fusion of Asia and the West politically and economically, makes knowledge of the diverse languages and cultures of East Asia vital to an understanding of our global community and indispensable for the preparation of careers in the Pacific Rim. The Department of East Asian Languages & Cultures provides the resources and instruction necessary for success in these areas. The department is dedicated to providing rigorous language training in Chinese, Japanese, and Korean, as well as courses taught in English on Chinese, Japanese, and Korean philosophy, religion, literature, and culture. Complementary courses in other disciplines are listed in this Bulletin under departments such as history, philosophy, theology, political science, economics, and anthropology.

Completion of First-Year Chinese, Korean, or Japanese (10 credits) will satisfy the language requirement for both the College of Arts and Letters and the College of Science. Although the College of Business does not have a language requirement, it strongly supports integration of language courses into its curriculum and encourages students to participate in the study abroad programs (See “Study Abroad” under Mendoza College of Business).

Placement and Language Requirement. Students who wish to enroll in a Chinese, Japanese, or Korean language course beyond the 10xxx or 10112 level must take a placement examination administered by the Department. Students testing out of 10xxx-level language courses must complete at least one course at the 20xxx level or higher to satisfy the language requirement.

Program in Chinese and Classical Chinese

The program in Chinese offers language classes in Mandarin Chinese at the first-, second-, third-, and fourth-year and advanced levels and classical Chinese, as well as classes in English on classical and modern Chinese literature and culture. Qualified students also have the opportunity to attend East China Normal University in Shanghai; Peking University in Beijing, People’s Republic of China; and Fu Jen University in Taipei, Taiwan.

The Chinese program offers first and supplementary majors and a minor.

Basic requirements: For the major, students must complete 30 credit hours, including third-year Chinese. For the supplementary major, students must complete 24 credit hours, including third-year Chinese. For the minor, students must complete 15 credit hours, including two semesters of language classes beyond the first-year. 10xxx-level language courses and University seminars on China-related topics do not count toward the major, supplementary major, or minor.

Other requirements: In addition to the language course requirements described above, all majors must take three upper-division courses in residence in Chinese literature and culture, including one course in Chinese literature, which must be taught by a department faculty member. Remaining credit hours may be satisfied by taking additional Chinese language and culture courses, or other East Asia-related courses approved by the Director of Undergraduate Studies.

The Honors Track in Chinese

Majors in Chinese are strongly encouraged to pursue the honors track. Those who are interested must meet the following criteria:
1. Fulfillment of all the requirements for a first major of 30 credit hours in Chinese;
2. A cumulative GPA of at least 3.3 and a GPA of at least 3.7 in the major, or permission from the department chair;
3. Completion of fourth-year Chinese.

Program Requirements: In addition to the 30 hours required for a major, the honors track requires the completion of a senior honors thesis that demonstrates the student’s originality and ability to do research in the target field. For this endeavor, the student will receive 3 hours of graded credit. This means to graduate with departmental honors, the student must earn 33 hours of credit in the major.

Students are admitted into the honors track in the spring semester of their junior year. The senior honors thesis is a year-long, one-on-one experience with a faculty mentor that comprises two semester courses of 3 credit hours each.
The program in Japanese offers language classes in modern Japanese at the first-, second-, third-, and fourth-year and advanced levels, as well as courses in English on classical and modern Japanese literature and culture. Qualified students also have the opportunity to attend Nanzan University in Nagoya, and Sophia University in Tokyo, Japan.

The Japanese program offers first and supplementary majors and a minor.

**Basic requirements:** For the major, students must complete 30 credit hours, including two semesters of third-year Japanese. For the supplementary major, students must complete 24 credit hours, including third-year Japanese. For the minor, students must complete 15 credit hours, including two semesters of language classes beyond the first year. 10xxx-level language courses and University seminars on Japan-related topics do not count toward the major, supplementary major, or minor.

**Other requirements:** In addition to the language course requirements described above, all majors and minors must take three upper-division courses in residence in Japanese literature and culture, including one course in Japanese literature, which must be taught by a department faculty member. Remaining credit hours may be satisfied by taking additional Japanese language and literature courses, or other East Asia-related courses approved by the Director of Undergraduate Studies.

**The Honors Track in Japanese**

Majors in Japanese are strongly encouraged to pursue the honors track. Those who are interested must meet the following criteria:

1. Fulfillment of all the requirements for a first major of 30 credit hours in Japanese;
2. A cumulative GPA of at least 3.3 and a GPA of at least 3.7 in the major, or permission from the department chair;
3. Completion of fourth-year Japanese.

**Program Requirements:** In addition to the 30 hours required for a major, the honors track requires the completion of a senior honors thesis that demonstrates the student’s originality and ability to do research in the target field. For this endeavor, the student will receive 3 hours of graded credit. This means to graduate with departmental honors, the student must earn 33 hours of credit in the major.

Students are admitted into the honors track in the spring semester of their junior year. The senior honors thesis is a year-long, one-on-one experience with a faculty mentor that comprises two semester courses of 3 credit hours each.

**Major in International Economics in Chinese**

The newly-created undergraduate major in International Economics is a collaborative effort between the Department of Economics and affiliated departments of languages and literature. In pursuing this major, students take a minimum of eight economics courses and are also required to enroll in a one-credit “Exploring International Economics”, preferably their sophomore year, designed to foster the integration of the study of culture with the study of economics. Students must complete a minimum of four semesters of Chinese language courses through the fourth-year level, including the one-credit fourth year supplements in Business Chinese.

Students must also take a minimum of three upper-division courses in Chinese literature and culture, including at least one literature course taught by EALC faculty.

In their senior year, students have the option of writing a senior capstone essay that integrates their economic and language and culture study or taking the two-semester sequence in advanced Chinese. The senior capstone project may be a senior thesis under the guidance of a faculty member from Economics or East Asian Languages and Cultures or a research seminar paper that focuses on a topic or topics related to the economic, linguistic, and cultural characteristics of a country or countries where Chinese is spoken.

Refer to the Department of Economics for the relevant course requirements in economics, which include satisfying a mathematics requirement of Calculus I and II and successful completion of ECON 10010/20010; ECON 10020/20020; ECON 30010; ECON 30020; ECON 30331; and two of the following: ECON 40700, ECON 40800, ECON 40710 and ECON 40720.

**Program in Korean**

The University offers three years of Korean language instruction and a number of courses relating to Korean culture. Students who finish the sequence at Notre Dame are encouraged to continue their language study abroad. For the minor in Korean, students must complete 15 credit hours, including at least two semesters of Korean language beyond the first year, and one course in Korean culture. The remaining credit hours may be filled by additional courses in Korean language or culture courses offered by the department, or by courses approved by the Director of Undergraduate Studies.

**Asian Studies Minor**

See “Area Studies Minors,” later in this section of the Bulletin. This minor provides opportunities for students to develop an interdisciplinary understanding of Asia.

**East Asian Languages & Cultures Study-Abroad Programs**

Students have opportunities to study abroad for a summer, a semester, or a year in the People’s Republic of China and Japan at the following locations:

**Beijing, China:** The program at Peking University affords students an opportunity to improve their fluency in spoken and written Mandarin Chinese through intensive training. Participants must have completed at least two semesters of college-level Mandarin or the equivalent. The summer language program is run by Notre Dame.

**Shanghai, China:** The program at East China Normal University is generally designed for a semester (but it may be extended) that affords students courses in Chinese language, literature, and culture.

**Nagoya, Japan:** The program at the Catholic Nanzan University offers mandatory courses in...
intensive Japanese, as well as related courses in literature, religion, business, economics, history, art, and politics. The program is designed for sophomores who have taken a minimum of first-year, intensive Japanese (at the University of Notre Dame) or its equivalent.

Tokyo, Japan: The program at the Catholic Sophia University enables language majors to focus on their language courses while, at the same time, affording a wide-ranging selection of English-language offerings in Asian Studies, international business, economics, history, political science, art history, literature, religion, philosophy, anthropology, and sociology. Sophomores and juniors may participate.

COURSE DESCRIPTIONS

All of the courses associated with this academic program can be found online at registrar.nd.edu/students/class_search.php. The scheduled classes for a given semester may be found by clicking on “Class Search” and selecting one or more of the

- East Asian Languages & Literature
- Chinese
- Japanese
- Korean

Course descriptions can be found by clicking on the subject code and course number in the search results.

Economics

Chair:
William Evans
David R. and Erin M. Seng Jr. Chair:
Joseph Kaboski
DeCone Professor of International Economics:
Nelson C. Mark
Gilbert E. Schaffer Professor of Economics:
Richard A. Jensen
Keough-Hesburgh Professor:
William Evans
Notre Dame Endowed Chair in Economics:
Christopher Woodruff
William and Dorothy O'Neil Professor of Economics:
Timothy Fuerst
Stepan Family Associate Professor of Economics:
Daniel Hungerman
Brian and Joannelle Brady Associate Professor:
Kasey Buckles
Michael P. Grace II Associate Professor of Economics:
Eric R. Sims

Professors:
William Evans; Timothy Fuerst; Thomas Gresik; Richard Jensen; William Leahy; Nelson C. Mark; Christopher Woodruff

Associate Professors:
Ruediger Bachmann; Kasey Buckles; Kirk Doran; Daniel Hungerman; Lakshmi Iyer; Joseph Kaboski; Byung-Joo Lee; Michael Pries; Kali P. Rath; Eric R. Sims; James Sullivan; Abigail Wozniak

Assistant Professors:
Simeon Alder; Christiane Baumeister; Marinho Bertanha; Wyatt Brooks; Christopher Cronin; Kevin Donovan; Felix Feng; A. Nilesh Fernando; Antoine Gervais; Chloe R. Gibbs; Terence Johnson; Ethan Lieber; Zachary Stangebye; Jeff Thurk

Professional Specialist:
Mary Flannery

Assistant Professional Specialists:
Eva Dziadula; Forrest Spence

Director of Undergraduate Studies:
Mary Flannery

Undergraduate Advisors:
Eva Dziadula; Mary Flannery; William Leahy; Forrest Spence

Program of Studies. The major is designed to make a unique contribution to the student’s liberal education. The program provides students with the insights of scientific analysis and social perspective to deepen their understanding of the complex economic forces at work in society. Such an understanding is an essential ingredient in the development of an educated person. The program is also designed to prepare the student for a variety of options after graduation, including graduate programs and managerial programs in business and finance.

Requirements for the Economics Major

(i) Total Course Requirement

Students must complete the two-semester Principles of Economics sequence (10010/10011/20010/20011 and 10020/20020 or equivalent). Beyond the Principles courses, the major requires a minimum of eight (8) additional course (24 credits) in economics at the junior/senior level (numbered 3xxxx or 4xxxx).

(ii) Math Requirement

A course in Calculus (MATH 10260 or equivalent ) is a prerequisite for both of the intermediate theory courses. (See core requirement below). Simultaneous enrollment in Calculus II is permitted but not recommended.

Recommendation: It is strongly recommended that students, especially prospective economic majors, who have not had a course in Calculus I (MATH 10250 or equivalent) enroll in the calculus course during their first year of study.

(iii) Core Requirement

Students must include the following four courses among their minimum of eight courses in economics beyond the Principles course.

- 30010 Intermediate Economic Theory Micro
- 30020 Intermediate Economic Theory Macro
- 30330 Statistics for Economists
- 30331 Econometrics

(iv) Advanced Course Requirement

Students must include a minimum of two courses (6 credits) at the senior level (numbered 4xxxx) that have either of the intermediate theory courses (30010, 30020) and/or Econometrics (30331) as a prerequisite.

(v) Writing-Intensive Requirement

In completing the minimum of 24 credits at the junior/senior 3xxx/4xxx level, the student must fulfill a writing-intensive requirement. This requirement can be satisfied in one of the following three ways: by taking a junior or senior 3xxx/4xxx-level economics seminar course; by taking a three credit special studies course consistent with the college’s writing-intensive guidelines under the direction of an economic faculty member; or by writing a senior honors essay under the direction of an economic faculty member.

Departmental advisors will assist students in designing a program of study that meets their educational and career goals. Students are also encouraged to pursue related courses in other departments of the College of Arts and Letters, the Mendoza College of Business and the College of Science. Materials relating to professional work or graduate study in economics, law, business, public policy, foreign service are available from the director of undergraduate studies.

Undergraduate Economics Honors Program

Entry Gate.

To be eligible for admission to the Undergraduate Economic Honors Program, the student must:
Economics

(i) Complete Intermediate Economic Theory-Micro (ECON 30010), Intermediate Macroe Theory (ECON 30020), and Econometrics (ECON 30331) with minimum grade point average in these courses of A– (3.667).

or

(ii) Have a minimum cumulative GPA of 3.4 and minimum GPA of A– (3.667) in Principles of Microeconomics (ECON 10010/10011/20010/20011), Principles of Macroeconomics (ECON 10020/20021) Intermediate Economic Theory-Micro (ECON 30010), Intermediate Macroe Theory (ECON 30020), Statistics for Economists (30330), and Econometrics (ECON 30331).

To apply for admission, the student must complete an application form, available from the director of undergraduate studies in Economics, between the end of the sophomore year and the end of the junior year. The application will include: (1) a paragraph explaining why the student wishes to enroll in the honors program, and (2) a signature by a member of the economics faculty who endorses this student’s application. The application will be returned to the director of undergraduate studies in Economics who will make recommendations for admission to the Undergraduate Studies Committee, which is responsible for the final decisions.

Enriching Experience.
The Undergraduate Economics Honors Program requires that the student complete an enriching experience. The following qualify as an enriching experience:

(i) Completion of a one-credit honors seminar (ECON 47961) in each semester of the senior year. The seminar not only provides instructional support for these students, but also requires each student to present progress reports to their peers at regular intervals. These seminar credits do not count as regular major (i.e., do not substitute for 3xxxx or 4xxxx-level elective economics courses) and are graded on a Satisfactory/Unsatisfactory basis. These seminars are open to juniors in the honors program who want advanced insight to what the honors essay entails.

(ii) Completion of a six credit senior honors essay (with a grade of B+ or higher). The essay is directed by an economics faculty member and represents a significant research effort. The writing of the essay is accomplished over the two semesters of the student’s senior year with three credits awarded each semester (ECON 47960). These credits can be counted as economics electives toward the major and can be used to satisfy the major’s writing-intensive requirement. The results of the essay must be presented at the economics seminar open to the public during the end of the second semester of each academic year.

(ii) Participation in all College of Arts and Letters events for departmental honors students.

MAJOR IN INTERNATIONAL ECONOMICS

The undergraduate major in International Economics is a collaborative effort between the Department of Economics and the departments of languages and literatures affiliated with the International Economics major. In pursuing this major, students take a minimum of eight economics courses and seven to ten intermediate and advanced courses in one of the following languages: Arabic, Chinese, French, German, Italian, Japanese, Russian and Spanish. Students are also required to enroll in a one-credit course “Exploring International Economics” designed to foster the integration of the study of culture with the study of economics. Students must also complete a senior research project or equivalent designed to integrate their economic and language study and culture study. The senior research project is intended to provide an experience that integrates the analytical aspects of economics with the linguistic and cultural aspects of a language. Details about the thesis/capstone project are determined by the relevant language department.

Students must satisfy a mathematics requirement of Calculus I and II and successfully complete ECON 10010/20010; ECON 10020/20020; ECON 30010; ECON 30020; ECON 30330; ECON 30331; and two of the following: ECON 40760, ECON 40800, ECON 40710 and ECON 40720 or other international economics courses as approved by the Director of Undergraduate Studies. Students should refer to their language department for specific language, literature and culture requirements.

Through the major, the collaborating departments seek to blend the programs of study to ensure that students will achieve advanced linguistic and cultural competency in a foreign language as well as excellent preparation in Economics. The balance of economics with languages and culture courses should attract motivated students and inspire them to undertake a challenging course of study that will prepare them for post-graduate studies and/or professional career opportunities in the international arena. International Economics majors will learn how aesthetic and cultural categories and value judgments are shaped by economic trends and political conditions and how political conditions and economic trends are influenced by aesthetic and cultural trends.

CONCENTRATIONS IN FINANCIAL ECONOMICS AND ECONOMETRICS

The Economics department also offers a concentration in Financial Economics and Econometrics. This selective program fills a need for additional training in applied quantitative economic reasoning. The coursework for the concentration will provide a fast-paced and rigorous training in financial economics that will prepare students for careers in investment management, banking, research, and policy-making.

Admission to the concentration will be selective, and Economics and International Economics majors in the College of Arts and Letters may apply. Applications for admission to the concentration should be submitted to the Economics Department by February 15 of a student’s sophomore year. The department will evaluate all applicants and will make admission decisions by March 15. Admission decisions will be based on factors including overall GPA, performance in prior economics courses, and mathematical background. Students should have completed intermediate microeconomic theory by the end of their sophomore year.

Students pursuing this concentration will be required to fulfill the core requirements of the Economics or International Economics majors, along with the additional requirement of the five classes—three core classes and two electives. These classes would jointly satisfy the electives requirements within the Economics or International Economics majors.

Core Classes
All students must take the following three courses:

- Financial Economics (ECON 40354, first offering in fall 2014)
- Asset Pricing (first offering in spring 2015)
- Financial Econometrics (first offering in fall 2015)

Upper level electives
All students are required to take two of the following electives:

- International Money (ECON 40720)
- Monetary Policy (ECON 40362)
- Monetary Theory and Policy (ECON 40364)
- Fixed Income Markets (future course)
- Forecasting for Economics and Business (ECON 43330)
Course descriptions can be found by clicking on the subject code and course number in the minor but may qualify a student for a higher level study. AP credit will be accepted as a substitute for courses applied to satisfy the requirements of the minor. No requirement, but no more than two may count toward the major. Creative writing courses may satisfy the genre requirement, but would not count for both poetry and drama (two genre categories). 

2 courses predominantly concerned with a genre (genre), but would not count for both poetry and drama (two genre categories). 

Renaissance literature might count for 1500–1700 theory from the following list: fiction, drama or film, critical theory. A single course can fulfill the requirement in more than one distribution category, but it may not satisfy the requirements of their major—but Psychology or Sociology majors can use their respective departmental statistics course to fulfill the statistics requirement of the minor. No more than one course in the minor maybe taken at another institution. Prior approval is required for this and for transfer credit that is applied to satisfy the requirements of the minor. No AP credit will be accepted as a substitute for courses in the minor but may qualify a student for a higher level course. The minor is not open to students majoring in Economics.

**THE MINOR IN BUSINESS ECONOMICS**

The minor in Business Economics comprises 15 credits. It is open to students in the College of Arts and Letters. All students are required to take Principles of Microeconomics; Principles of Macroeconomics; Statistics; Introductory Accounting and Introductory Finance. Students may count one of the above courses to fulfill a University requirement. Students may not double-count any of the above courses to fulfill the requirements of their major—but Psychology or Sociology majors can use their respective departmental statistics course to fulfill the statistics requirement of the minor. No more than one course in the minor maybe taken at another institution. Prior approval is required for this and for transfer credit that is applied to satisfy the requirements of the minor. No AP credit will be accepted as a substitute for courses in the minor but may qualify a student for a higher level course. The minor is not open to students majoring in Economics.

**COURSE DESCRIPTIONS**

All of the courses associated with this academic program can be found online at registrar.nd.edu/students/class_search.php. The scheduled classes for a given semester may be found by clicking on “Class Search” and selecting the subject Economics. Course descriptions can be found by clicking on the subject code and course number in the search results.

**English**

**Department Chair:**
Jesse Lander

**Director of Undergraduate Studies:**
Greg Kuczich

**Director of Graduate Studies:**
Sara Maurer

**Director of Creative Writing:**
Joyelle McSweeney

**William R. Kenan Jr., Professor of English:**
Joseph A. Burtigieg

**John and Barbara Glynn Family Professor of Literature:**
Margaret Anne Doody

**Reverend John J. Cavanaugh, C.S.C. Professor of the Humanities:**
Stephen M. Fallon

**Notre Dame Professor of English:**
Kathryn Kerby-Fulton

**Donald and Marilyn Keough Professor of Irish Studies:**
Declan Kiberd

**Donald R. Keough Family Professor of Irish Studies:**
Barry McCrea

**Mary Lee Duda Professor of Literature:**
John Sitter

**William E. and Hazel B. White Professor of English:**
Laura Dassow Walls

**Professors:**
Jacqueline Vaughn Brogan (emeritus); James M. Collins (concurrent); Christopher B. Fox; Stephen A. Fredman; Dolores W. Frese (emeritus); Sandra Gustafson; Peter Holland (concurrent); Laura Knoppers; Greg P. Kuczich; Tim Machan; John E. Mathias (emeritus); Joyelle McSweeney; Orlando Mena; William O'Rourke (emeritus); Valerie Sayers; Steve Tomasula; Henry Weinfield (concurrent)

**Associate Professors:**
Christopher Abram; John Duffy; Barbara J. Green; Stuart Greene; Susan Harris; Romana Huk; Cyraína Johnson-Rouiller; William J. Krier (emeritus); Jesse Lander; Kate Marshall; Sara Maurer; Susannah Monta; David Thomas; Elliott Visconsi

**Assistant Professors:**
José Costa; Nan D'ASTE; Johannes Göransson; Zétoile Imma; Jarvis McInnis; Ian Newman; Roy Scanton; Yasmin Solomonecu; Azareen Van der Vleit; Oloomi; Matthew Wilkins

**Professional Specialists:**
Noreen Deane-Moran

**Program of Studies.** The English major features small classes in which students read, analyze, and discuss literary works, studying issues of literacy and rhetoric, investigating the symbolic systems that shape cultural meaning, and exploring the broad range of human experience. Majors enjoy an atmosphere of immediate contact with the department's regular teaching and research faculty, who advise students on their course of study. English courses give close attention to student writing, and nearly every majors-level English course is writing-intensive.

English majors choose careers in any field valuing the ability to read, write, and analyze with intelligence and subtlety. Many of our majors find careers in law, business, education, publishing, journalism, marketing, politics, and medicine, as well as myriad other fields. An increasing number of English majors go into service projects and programs such as Teach for America.

**Major Requirements.** The English major requires a minimum of 10 courses (30 credit hours) in addition to the literature course required of all students in the College of Arts and Letters. In completing the 10 courses, students must satisfy the following requirements:

**Introduction to Literary Studies (ENGL 30101).** This course, which introduces students to college-level study of literature, is a concurrent prerequisite for the major (i.e., students cannot take a major elective unless they have completed this course or are currently enrolled in it).

**Research Seminar.** In the research seminar (numbered ENGL 43xxx), students complete an original and substantial research project. With the approval of the director of undergraduate studies and the instructor, students may take a graduate course in place of the research seminar. The research seminar does not fulfill a distribution requirement.

**Elective courses.** Eight English courses at the 30xxx or above.

**Distribution requirement.** In selecting elective courses, students must fulfill the following distribution requirements:

**History:**
1 course in the period before 1500
1 course in the period 1500–1700
2 courses in the period 1700–1900
1 course after 1900

**Culture:**
1 course in British literature
1 course in American literature
1 course in a literature in English outside of Britain and the United States or in American ethnic minority literature

**Genre:**
1 course predominately concerned with poetry
2 courses predominantly concerned with a genre from the following list: fiction, drama or film, critical theory

A single course can fulfill the requirement in more than one distribution category, but it may not satisfy more than one category. For example, a survey of Renaissance literature might count for 1500–1700 (history), British literature (culture), and drama (genre), but would not count for both poetry and drama (two genre categories).

Creative writing courses may satisfy the genre requirement, but no more than two may count toward the major.
The number of courses needed to satisfy the distribution requirement will vary, depending on the courses the student selects, but not all electives need fulfill a distribution requirement.

Research seminars do not fulfill the distribution requirement.

**Concentration in Creative Writing.** The philosophy of the Department of English is that in order to produce good literature, you must know good literature. In order to complete the concentration, therefore, the student must be an English major and complete all of the requirements for the major.

**Requirements.** In addition to completing the requirements for the major, students must take four creative writing courses from a list approved by the department, two of which, if taken at the 30xxx or 40xxx level, may count towards the ten courses required for the English major (meaning that at its completion students will have taken a minimum of twelve English courses at the 30xxx or 40xxx level). One 20xxx-level creative writing course may count toward the concentration. One of the four creative writing courses must be either Advanced Fiction Writing (40850) or Advanced Poetry Writing (40851).

**Admission to the Concentration.** Students wishing to complete the concentration must apply to the department after taking two creative writing courses in accord with the guidelines above. The Creative Writing Committee will determine whether to admit students to the concentration on the basis of the recommendations of the instructors of those two courses. In cases in which it is not possible to obtain such recommendations, a student may supplement his or her application with a portfolio of creative writing.

**Honors Concentration.** In the English Honors Concentration, select majors create programs tailored to their own particular interest. A faculty mentor guides each of these students through this intensive experience. The English Honors Concentration is particularly beneficial to students wishing to pursue graduate studies in English. The main feature of the concentration is writing an honors thesis consisting of a work of literary scholarship.

**Eligibility.** During the junior year, students are invited to apply to the Honors Concentration after being identified in one of two ways: achieving a GPA of 3.78 or higher in three or more English courses, or 3.6 or higher with a faculty nomination. Invited students declare their interest by completing a 300-word Statement of Purpose describing the project the student intends to complete. Students may also self-nominate for Creative Writing Honors by contacting the Director of Creative Writing and/or using the online application form.

**Requirements.** Students must complete all of the requirements for the Honors Concentration. In the fall of their senior year, students will meet regularly with their thesis advisor and other faculty to develop their thesis project; in the spring of the senior year, the student enrolls in ENGL 52999 (Honors Thesis) to complete the writing of the thesis. The latter is in addition to the 30 hours required for the major.

**English Major Honors Concentration in Creative Writing.** Students in Creative Writing Honors complete a thesis consisting of a work of creative writing and a reflection on the process of producing it.

**Eligibility.** During the junior year, students are invited to apply to the Honors Concentration after being identified in one of two ways: achieving a GPA of 3.78 or higher in three or more English courses, or 3.6 or higher with a faculty nomination. Invited students declare their interest by completing a 300-word Statement of Purpose describing the project the student intends to complete. Students may also self-nominate for Creative Writing Honors by contacting the Director of Creative Writing and/or using the online application form.

**Requirements.** Students must complete all of the requirements for the Honors Concentration. In the spring of senior year, the student enrolls in ENGL 52999, Honors Thesis to complete the writing of the thesis. The latter is in addition to the 30 hours required for the major.

**Course Descriptions**

All of the courses associated with this academic program can be found online at registrar.nd.edu/students/class_search.php. The scheduled classes for a given semester may be found by clicking on "Class Search" and selecting the subject **English**. Course descriptions can be found by clicking on the subject code and course number in the search results.
Students graduating from this department have numerous postgraduate choices. Many of our graduates seek careers in law, medicine, business, education, public service, or other professions. Others will pursue careers in theatre, film, or television. However, we are not a professional training program. Rather, we seek to provide the creative and technological tools for student scholar/artists to build a basis for advanced study and professional careers in the arts should they so desire. It is our hope that those whose work and determination lead them to seek careers in these fields will be challenged and assisted by their liberal arts curriculum. Our courses provide tools to understand the analytical, technical and imaginative processes of the field, whether pursued as future work, study, or as an enhancement of intellectual life.

All 40xx-level critical studies electives in film and television, and selected theatre electives, will fulfill the writing-intensive requirement.

Many FTT courses fulfill the University fine arts requirement.

For more information and up-to-date listings of courses and FTT events, visit the Web at ftt.nd.edu.

**Program of Studies.** Students interested in the major are encouraged to visit the departmental office (230 Marie P. DeBartolo Performing Arts Center) for information about the programs and department faculty. You also may visit our website at ftt.nd.edu. Step-by-step instructions for becoming a major are available on our website. Students may elect to major in the department as either a first or second major in accordance with college guidelines.

Students concentrate in either film, television or in theatre. Ten courses are needed to complete the major. The film concentration requires one elective on an international subject and three courses at the 40000 level. The television concentration requires seven electives, three at the 40000 level. The theatre concentration requires six electives, one each from Groups A, B, and C. The remaining electives may be from any Group.

The Department of Film, Television, and Theatre participates in several international programs by cross-listing courses and sponsoring internships. For more information, see the Bulletin descriptions for the international programs.

Several courses are offered in the summer session, including Introduction to Film and Video Production. See the Summer Session Bulletin for availability and further information.

**FTT Honors Program**

Starting with the Fall 2012 semester, the Department of Film, Television, and Theatre will transform its Honors program by combining it with a new Senior Thesis Program. The changes are intended to better serve those students who aspire to complete a major research project in their senior year and to reward the most outstanding work.

FTT majors are invited to apply during their junior year to complete a two-semester Senior Thesis project during their senior year. Upon completion of the project, as well as a one-credit writing workshop in the fall of their senior year, students will be eligible to receive the Honors designation upon graduation, provided their project is approved for that designation by the department Honors Committee.

**FILM CONCENTRATION**

10 courses

4 required core courses:
- Basics of Film and Television
- Global Cinema I
- Global Cinema II
- Critical Approaches to Screen Cultures

6 electives (3 at the 40000 level, including 1 international elective at either the 30000 or 40000 level)

**General Electives**

Introduction to Film and Television Production
- The Art and Science of Filmmaking
- Film and Digital Culture
- History of Documentary Film
- Topics in Media Theory: Film and Popular Music
- The Art and Science of Screenwriting
- Media Internship

**International Electives (30xxx and 40xxx Level)**

- Italian National Cinema
- Comedy Italian Style
- French Cinema
- New Iranian Cinema
- Irish Cinema and Culture
- Australian Cinema
- Hong Kong: Action Cinema

**Upper-Level Electives**

- Shakespeare and Film
- Intermediate Filmmaking
- Advanced Filmmaking
- Sex and Gender in Cinema
- Walt Disney in Film and Culture
- Contemporary Hollywood
- Postmodern Narrative
- Documentary Video Production
- Sinatra

**TELEVISION STUDIES CONCENTRATION**

10 courses

3 required core courses:
- Basics of Film and Television
- History of Television
- Critical Approaches to Television

7 electives (3 at the 40000 level)
- Broadcast Journalism
- History of Film I & II
- Writing for Screen and Stage I and II
- Introduction to Film and Television Production
- Film and Digital Culture
- Topics in Media Theory, History, and Research
- Broadcasting and Cable

**THEATRE CONCENTRATION**

10 courses:

4 required core courses
- Theatrical Production
- Script Analysis
- Theatre, History, and Society (either section)
- Performance Analysis

6 elective (1 from each groups A, B, and C)

**Group A**
- Science Play
- Latin American Theatre
- History of Costume
- Advanced Dramaturgy
- Early English Theatre
- Shakespeare and Film
- Dramatic Text, Production & Social Concerns

**Group B**
- Scene Design
- Lighting Design
- Costume Design

**Group C**
- Acting: Process
- Viewpoints for Actors and Directors
- Voice and Movement

**Additional Electives**

- Introduction to Theatre
- Stage Management
- Playwriting
- Make-up for the Stage
- Scenic Painting
- Draping and Flat Patterning
- Acting: Character
- Acting: Text and Technique
- Directing: Process
- Classical Texts and Techniques
- CAD for the Stage
- Advanced Technical Production

**Complementary Nature of Departmental Concentrations.** There is a strong creative and scholarly relationship in the mix of courses and activities of the department of which students should be aware. The concentrations offered by this department can provide many complementary areas of creative and technical study for students involved in film and television production, as well as overlapping...
historical, theoretical and critical concerns. Similarly, those concentrating in theatre are urged to avail themselves of the many opportunities for production experience and critical, cultural and theoretical studies offered by the theatre faculty.

**Cocurricular Activities.** The department encourages non-majors to elect courses, participate as audience in our extensive film and theatre series, and involve themselves in film, television, and theatre production as a means of informing and complementing their liberal arts education at Notre Dame. Occasional guest artists and lecturers are also sponsored by the department. Information on all department-sponsored activities is available in the department office and on the department’s website.

**COURSE DESCRIPTIONS**

All of the courses associated with this academic program can be found online at registrar.nd.edu/students/class_search.php. The scheduled classes for a given semester may be found by clicking on “Class Search” and selecting the subject Film, Television, and Theatre. Course descriptions can be found by clicking on the subject code and course number in the search results.

Gender Studies

**Director:** Mary Celeste Kearney  
**Associate Director:** Abigail Falco  
**Program Coordinator:** Linnie Caye

**Concurrent Faculty:**  
Gail Bederman, Associate Professor, Department of History; Kasey Buckles, Associate Professor, Department of Economics; Meredith Chessen, Associate Professor, Department of Anthropology; Jessica L. Collert, Associate Professor, Department of Sociology; Kathleen Cummings, Associate Professor, Department of American Studies; Barbara Green, Associate Professor, Department of English; Perin Gurel, Assistant Professor, Department of American Studies; Susan Harris, Associate Professor, Department of English; Z’etoile Imma, Assistant Professor, Department of English; Cyraina Johnson-Rouldier, Associate Professor, Department of English; Mary Celeste Kearney, Associate Professor, Department of Film, Television and Theatre; Janet Kourany, Associate Professor, Department of Philosophy; Sarah McKibben, Associate Professor, Department of Irish Language and Literature; Paul Oocock, Assistant Professor, Department of History; Alison Rice, Associate Professor of French, Department of Romance Languages and Literatures; Jason Ruiz, Associate Professor, Department of American Studies; Sophie White, Associate Professor, Department of American Studies; Pamela Wojcik, Professor, Department of Film, Television and Theatre; Nicole Woods, Assistant Professor, Department of Art, Art History and Design

**Gender Studies Major, Supplementary Major and Minor**

**Objectives.** Gender Studies is an interdisciplinary academic program in the College of Arts and Letters at Notre Dame. Gender Studies analyzes the significance of gender—and the cognate subjects of sex, sexuality, race, ethnicity, class, religion, and nationality—in all areas of human life, especially in the social formation of human identities, practices, and institutions. Gender Studies gives scholars the methodological and theoretical tools to analyze gender and its cognates in their chosen disciplines in the arts, humanities, social sciences, and natural sciences. Gender Studies also provides its students and alumni with an intellectual framework in which the analysis of gender and its cognates can be creatively and critically applied to their personal, familial, professional, and civic roles. In the context of the Catholic identity of Notre Dame, Gender Studies facilitates the study of the intersection of gender and religion in the shaping of ethics, culture, and politics. Alongside our diverse array of courses drawn from across the University, our summer internship and academic-credit internship programs emphasize the holistic and practical life applications of a Gender Studies education at Notre Dame.

Gender Studies offers students a major, a supplementary major and a minor. In the major and supplementary major, students choose a concentration in Arts and Culture, Religion and Family, or Gender and Society. These concentrations allow students to focus their study of gender to prepare them for their senior capstone project.

**Requirements for Primary Major:** 10 courses, 30 credit hours

- 2 required courses: Introduction to Gender Studies Perspectives on Gender: Theory and Practice
- 4 courses in one of the following concentrations: Arts and Culture Religion and Family Gender and Society
- 2–3 electives
- 1 senior capstone project: regular track: interdisciplinary seminar thesis track: senior thesis (6 credits—must be in student’s area of concentration)

**Requirements for Supplementary Major:** 8 Courses, 24 credit hours

- 2 required courses: Introduction to Gender Studies Perspectives on Gender: Theory and Practice
- 3 courses in one of the following concentrations: Arts and Culture Religion and Family Gender and Society
- 2 electives
- 1 senior capstone project: interdisciplinary seminar capstone essay (must be in student’s area of concentration)

**Requirements for Primary Major:** 10 courses, 30 credit hours

- 2 required courses: Introduction to Gender Studies Perspectives on Gender: Theory and Practice
- 4 courses in one of the following concentrations: Arts and Culture Religion and Family Gender and Society
- 2–3 electives
- 1 senior capstone project: regular track: interdisciplinary seminar thesis track: senior thesis (6 credits—must be in student’s area of concentration)

**Course Descriptions**

All of the courses associated with this academic program can be found online at registrar.nd.edu/students/class_search.php. The scheduled classes for a given semester may be found by clicking on “Class Search” and selecting the subject Gender Studies. Course descriptions can be found by clicking on the subject code and course number in the search results.
German and Russian Languages and Literatures

Chair:
William C. Donahue
Rev. Edmund P. Joyce, C.S.C., Professor of German Language and Literature:
Mark W. Roche
Paul G. Kishnoff Professor of Arts and Letters:
Vittorio Hösle
John J. Cavanaugh, C.S.C., Professor of Humanities:
William C. Donahue

Professors:
William C. Donahue; Vittorio Hösle; Randolph J. Klawiter (emeritus); Klaus Lanzerger (emeritus); Thomas G. Marullo; Robert E. Norton; Vera B. Profit (emeritus); Mark W. Roche; Konrad Schaum (emeritus)

Associate Professors:
Tobias Boes; David W. Gasperetti; Albert K. Wimmer (emeritus)

Assistant Professors:
Carsten Dutt; Claire Taylor Jones

Teaching Professors:
Denise M. Della Rossa; Hannelore Weber

Program of Studies. The study of German and Russian languages and literatures provides educational opportunities relevant to an increasingly interdependent world. The acquisition of foreign language skills in general is an important component of liberal education because it enhances students’ powers of communication and serves to introduce them to enduring cultural achievements of other peoples. In this sense, the study of German and Russian widens students’ intellectual horizons, stimulates the understanding of several significant cultural traditions, and facilitates the examination of these traditions in a more sophisticated and cosmopolitan manner.

The goal of all levels of language courses are oral and reading competence and linguistic and stylistic mastery. Courses in advanced German or Russian language, literature, culture and civilization expose the student to a wealth of literary, cultural and humanistic traditions as well as foster a better understanding of the rich national cultures of the German- and Russian-speaking countries.

The Department. The Department of German and Russian Languages and Literatures offers instruction in German and Russian at all levels of competence, from beginning language courses at the 10000 level to literature and civilization courses on the 30000 and 40000 levels.

THE GERMAN PROGRAM

Director of Undergraduate Studies:
Denise M. Della Rossa

REQUIREMENTS: FIRST MAJOR, SUPPLEMENTARY MAJOR, AND MINOR

Major in German Language and Literature
Successful completion of 10 courses (30 credit hours) beyond the three-semester language requirement.

These 10 courses must include successful completion of 20202, 30104, and 30204 and an additional 7 electives at the 30000 or 40000 level. 20202 is a prerequisite to 30104 and 30204, which may be taken in any order. At least one of these courses, preferably both, must be completed before taking an elective.

Of these 10 courses, 4 must be upper-division courses at the home institution from departmental offerings; 2 must be at the 40000 level; and 2 may be in English.

Supplementary Major in German Language and Literature
Successful completion of 8 courses (24 credit hours) beyond the three-semester language requirement.

These 8 courses must include successful completion of 20202, 30104, and 30204 and an additional 5 electives at the 30000 or 40000 level. 20202 is a prerequisite to 30104 and 30204, which may be taken in any order. At least one of these courses, preferably both, must be completed before taking an elective.

Of these 8 courses, 3 must be upper-division courses at the home institution from departmental offerings; 1 must be at the 40000 level; and 2 may be in English.

Minor in German Language and Literature
Successful completion of 5 courses (15 credit hours) beyond the three-semester language requirement.

These 5 courses must include successful completion of 20202, 30104, and 30204 and an additional 2 electives at the 30000 or 40000 level. 20202 is a prerequisite to 30104 and 30204, which may be taken in any order. At least one of these courses, preferably both, must be completed before taking an elective.

Of these 5 courses, 2 must be upper-division courses at the home institution from departmental offerings; and 1 may be in English.

Major in International Economics in German

The undergraduate major in International Economics is a collaborative effort between the Department of Economics and affiliated departments of languages and literature. In pursuing this major, students take a minimum of eight economics courses and six courses in German beyond the language requirement. Students are also required to enroll in a one-credit “Exploring International Economics” course, preferably their sophomore year, designed to foster the integration of the study of culture with the study of economics. Under the guidance of a faculty mentor, international economics majors in German integrate their economic and language and culture study into a senior research project or senior thesis. This project or thesis is intended to provide an experience that integrates the analytical aspects of economics with the linguistic and cultural aspects of German studies.

German Requirements: Successful completion of 6 courses (18 credit hours) beyond the three-semester language requirement. All students are required to take GE 33000: Exploring International Economics (one credit).

Of these 6 courses, 2 must be upper-division courses at the home institution from departmental offerings.

To Table of Contents
Of these 8 courses, 3 must be upper-division courses at the home institution; 2 must be in German and up to 3 may be in English; 1 must be at the 40000 level.

**Study Abroad:** Students who participate in a study abroad program during the academic year must take at least 1 course from departmental offerings after their return to the home campus. Only one intensive language course taken abroad, whether completed during a summer program or the academic year, will count as an elective toward the first major, supplementary major, or minor.

**Senior Thesis and Departmental Honors**

German first majors who elect to write a **Senior Thesis** must meet the following requirements:

1. The student must have a GPA of 3.0 or higher in the major.
2. Should be nominated by two members of the German faculty during the spring semester of his or her junior year and no later than the first week of classes fall semester of the senior year, and
3. The thesis may be written in either German or English with a length of between 25–35 pages, including notes and references. (Exceptions beyond 35 pages require advisor approval.) Two bound copies of the final document are to be submitted to the Department of German.

For the fall semester the student will receive a satisfactory/unsatisfactory grade (3 credits) for GE 48499. At the completion of the thesis in the spring semester, the student will be given a letter grade (3 credits) for GE 48499. These credits do not count toward the 30-credit hour requirement for the first major.

German first majors who wish to receive **Departmental Honors** must meet the above criteria as well as the following:

1. The student will present his or her thesis work in a public forum, such as Notre Dame's Undergraduate Scholar's Conference held each May or at a similar conference, and
2. The student must maintain a departmental GPA of 3.5 and receive no lower than an A– on the Senior Thesis.

**THE RUSSIAN PROGRAM**

**Director of Undergraduate Studies:**

David Gasperetti

**The Major in Russian**

Majors in Russian must complete ten courses (thirty credit hours) beyond the three-semester language requirement, including at least six courses taught by departmental faculty. Intermediate Russian II and Advanced Russian I and II are required courses. However, participants in an approved semester-long program in Russia are automatically exempted from the language course that is offered concurrently with their semester abroad. In addition, students are required to take four three-credit literature or culture courses offered by the department at the 30000 level or above, including at least one course each at the 30000 and 40000 levels. With the permission of the Director of Undergraduate Studies, one course on a Russian subject taught in another department, such as Anthropology, History, Political Science, or Theology, may be counted toward the Russian major.

**The Supplementary Major in Russian**

Supplementary majors in Russian must complete eight courses (twenty-four credit hours) beyond the three-semester language requirement, including at least four courses taught by departmental faculty. Intermediate Russian II and Advanced Russian I and II are required courses. However, participants in an approved semester-long program in Russia are automatically exempted from the language course that is offered concurrently with their semester abroad. In addition, students are required to take two three-credit literature or culture courses offered by the department, one at the 30000 level and one at the 40000 level. With the permission of the Director of Undergraduate Studies, one course on a Russian subject taught in another department, such as Anthropology, History, Political Science, or Theology, may be counted toward the Russian supplementary major.

**The Major in International Economics in Russian**

Combining the study of economics with the knowledge of another country's language and culture can be a powerful advantage in business. The Major in International Economics in Russian is designed to provide this edge by preparing students for the challenges of an ever more interconnected global economy. The requirements for the major include the following: RU 33000 “Exploring International Economics” (one credit, preferably taken in the sophomore year), which fosters an integrated approach to the study of culture and economics; six courses (18 credits) from Russian departmental offerings beyond the three-semester language requirement, including RU 20102 “Intermediate Russian II,” RU 40101 “Advanced Russian I,” RU 40102 “Advanced Russian II,” one literature/culture elective at each of the 30000 or 40000 levels, and one additional three-credit literature or Russian history elective at the 30000 or 40000 level; and eight courses in economics. In addition, all international economics majors combine their study of economics and language, literature, and culture in a senior research project or senior thesis written under the guidance of a faculty mentor.

Refer to the Department of Economics for the relevant course requirements in economics, which include satisfying a mathematics requirement of Calculus I and II and successful completion of ECON 10011/20011; ECON 10020/20020; ECON 30010; ECON 30020; ECON 30350; ECON 30331; and two of the following: ECON 40700, ECON 40800, ECON 40710 and ECON 40720.

**The Minor in Russian**

The Russian minor consists of five courses (fifteen credits) at the 20000 level or above taught by departmental faculty. Course selection must include at least two language courses at the student's appropriate level and three additional three-credit courses at either the 30000 or the 40000 level.

**The Supplementary Major in Russian and East European Studies**

The supplementary major in Russian and East European Studies is designed to give students with an interest in Russia and Eastern Europe an interdisciplinary introduction to the region that supplements their primary disciplinary major. The supplementary major requires:

1. Three semesters (11 credits) of college-level Russian language (or another East European language, with the approval of the DUS); and
2. Two additional courses (6 credits), one or both of which may be EITHER (a) a Russian and East European area studies at the 30000 or 40000 level, taken in residence at Notre Dame and distributed across at least three academic disciplines (literature, film, history, political science, theology, music, anthropology, etc.); or
3. Two additional courses (6 credits), one or both of which may be EITHER (a) and (b) in Russian and East European area studies at the 30000 or 40000 level, OR (b) Russian language at the Intermediate II level or above. (Students who place higher than Beginning Russian II upon entering Notre Dame will be required to choose option b and take two Russian language courses toward the REES supplementary major); and
4. EITHER (c) an additional course (3 credits) in Russian language or in Russian and East European area studies at the 30000 or 40000 level, or the Intermediate II level or above. (Students who place higher than Beginning Russian II upon entering Notre Dame will be required to choose option b and take two Russian language courses toward the REES supplementary major); and

**The Minor in Russian and East European Studies**

The Minor in Russian and East European Studies is designed to give students with an interest in Russia and Eastern Europe an interdisciplinary introduction to the region. The minor requires:

1. Completion of Beginning Russian I and II (or another East European language, with the approval of the DUS); and
II exam. This includes students who have taken an AP or SAT higher before fulfilling the language requirement. Students testing out of three semesters must complete an additional course at the 20000 level or above. (Students who place higher than Beginning Russian II upon entering Notre Dame will be required to choose option b.)

Study Abroad
Our students are encouraged to experience firsthand the excitement of being immersed in Russian culture through participation in a study program in Russia. Programs are available during the summer (five to nine weeks) or for an entire semester or academic year. Credits earned for course work taken in approved programs may be applied toward the Russian major or minor at Notre Dame. Grants are available on a competitive basis for summer language study through the Center for the Study of Languages and Cultures and the Nanovic Institute for European Studies.

Senior Thesis/Honors Track
Russian majors are admitted into the honors track by application. To receive honors, a student must (1) complete all requirements for the major; (2) maintain a GPA of at least 3.5 in the major; (3) register for two 1-credit enrichment courses (RU 47100) in the senior year; (4) register for two 40000-level literature courses in the senior year; and (5) receive a grade of A- or higher for a substantial honors thesis written in English. Closely supervised by one of the Russian faculty in the Department of German and Russian Languages and Literatures, the Russian honors thesis is to be the product of a 6-credit honors track directed readings course taken in the senior year. The student will receive 3 credits in the fall semester for preparation of the thesis and 3 credits in the spring semester for writing the thesis. For more information, see germanandrussian.nd.edu.

Placement and Language Requirement
At the beginning of each semester, placement tests in German and Russian will be administered that will allow students to enroll in a course commensurate with their language proficiency. The placement test is mandatory for students who had German or Russian in high school. Students testing out of three semesters must complete an additional course at the 20000 level or higher before fulfilling the language requirement. This includes students who have taken an AP or SAT II exam.

COURSE DESCRIPTIONS
All of the courses associated with this academic program can be found online at registrar.nd.edu/students/class_search.php. The scheduled classes in German or Russian for a given semester may be found by clicking on “Class Search” and selecting either German or Russian from the Subject menu. The scheduled classes in Russian and East European Studies for a given semester may be found by clicking on “Class Search” and selecting REES from the Attribute menu. Course descriptions can be found by clicking on the subject code and course number in the search results.

History
Chair:
Patrick Griffin
Director of Graduate Studies:
Jon Coleman
Ignatius A. O’Shaugnessy Dean of the College of Arts and Letters:
John T. McGreevy
Francis A. McAnaney Professor of History:
Mark Noll
Andrew V. Tacket Professor of History:
John H. Van Engen
Madden-Hennebry Professor of Irish American History:
Patrick Griffin
Dorothy S. Griffin Professor of History:
Brad Gregory
Marilyn Keough Dean of the Donald R. Keough School of Global Affairs:
R. Scott Appleby

Professors:
R. Scott Appleby; Ted Beaty; Jon Coleman; Felipe Fernandez-Armesto; Brad Gregory; Patrick Griffin; Christopher S. Hamlin; Asher Kaufman; Thomas A. Keilman; Semion Lyandres; Alexander Martin; John T. McGreevy; Rev. Wilson D. Miscamble, C.S.C.; Dian H. Murray; Thomas Noble; Mark Noll; James Smyth; Rev. Robert Sullivan; Tom Tweed; John H. Van Engen

Professors Emeriti:
Rev. Thomas Blantz, C.S.C.; Jay P. Dolan; J. Philip Gleason; Rev. Robert L. Kerby; George Marsden; Walter Nugent; Rev. Marvin R. O’Connell; James Turner; Andrzei Walicki

Associate Professors:
Gail Bederman; Alexander Beihammer; Mariana Candido; Catherine Cangany; Kathleen Cummings; John Deak; Karen Graubart; Daniel Hobbins; Elisabeth Köll; Margaret Meserve; Jaime Pensado; Richard Pierce; Linda Prybylszewski; Rory Rapple; Julia Adeney Thomas; Deborah Tor

Assistant Professors:
Mike Amezcua; Liang Cai; Yacine Daddi Addain; Rebecca McKenna; Paul OXofock; Emily Remu; Lauren Rossii

Professional Specialist:
Daniel A. Graff

Concurrent Faculty:
Francesca Bordogna (Program of Liberal Studies); D’Arcy Jonathan Boulton (Medieval Institute); Keith R. Bradley (Classics); Steven Brady (First Year of Studies); Kathleen Sprows Cummings (American Studies and Cushwa Center); Barry Cushman (Law School); Erika Doss (American Studies); Melinda Gormley (John J. Reilly Center); Robert Goulding (Program of Liberal Studies); Lionel Jensen (East Asian Languages & Cultures); Robert (Jay) Malone (History of Science Society); Phillip Sloan (Program of Liberal Studies); John Soares; Thomas A. Stapleford (History and Philosophy of Science); Kevin Whelan (Keough Institute for Irish Studies); Sophie White (American Studies)
Program of Studies. The Department of History offers courses for undergraduates designed to expose them to life in the past as it was experienced and understood in the Americas, Europe, Asia, Africa, and Australia. Courses offered consist of lectures and seminars that require students to develop both a critical appreciation of primary and secondary texts and skills in historical thinking and writing.

For students interested in pursuing a history major, the department offers a rigorous program consisting of ten 3-credit courses. The sequence begins with an exciting introductory seminar (HIST 33000—History Workshop), which plunges students into the work of writing history from the moment they join the major through intensive interpretation of primary source documents. To encourage breadth of historical knowledge, standard majors also take a variety of courses emphasizing different chronological periods and geographical areas. More specifically, they must take one course from four of six primary fields: Africa/Asia/Middle East: Ancient/Medieval Europe (to 1500); Modern Europe (from 1500); United States; Latin America; Special (for courses focusing on other geographical areas or courses primarily comparative or global in approach). In addition, to encourage depth in a particular field of interest, standard majors also declare a concentration consisting of three courses. (These concentrations must be approved by the major’s advisor by the beginning of the senior year.) Standard majors also take an elective in any field they choose. To complete their course work, standard majors take a departmental seminar (HIST 43xxx), which offers the opportunity to conduct primary research and produce a substantial paper.

Majors above may count up to two lower-level courses toward the major program (courses beginning with a 1 or a 2). All others must be “major-level” courses that begin with a 3 or higher. These lower-level courses may be counted toward breadth requirements, electives, or concentration area courses.

Majors must take at least one writing-intensive course in the form of the departmental seminar (HIST 43xxx). In addition to prioritizing research in primary sources, these courses also emphasize writing as a process, with students encouraged to perform continual revisions and share their writing with their peers.

History Honors Program. The History Department offers a special program of study, the History Honors Program, for the most talented and motivated history majors. Students are invited to apply in the fall semester of the junior year; the program begins in the spring of the junior year. A student in the History Honors Program will take 11 three-credit history courses to satisfy both the Honors Program and standard history major requirements. In addition to taking the introductory gateway course (HIST 33000, History Workshop) and a variety of courses emphasizing geographical and chronological breadth, the student will also take two special honors seminars. Instead of completing a departmental seminar, the student will research and write a yearlong senior thesis, receiving three credits in each semester of the senior year. Each history honors student will select an area of concentration tailored to his or her thesis topic and will take two additional courses in this field to complete the program.

In the spring of the junior year, the student will enroll in an Honors Program Methodology Seminar (HIST 53001), designed to introduce the student to the various methods historians utilize to analyze and write about the past. [Students admitted to the Honors Program, but studying abroad during the spring semester junior year, will be exempt from HIST 53001. They must, however, register for an Honors Program Seminar with the director of Undergraduate Studies by the end of that semester.]

In the fall of the senior year, the student will enroll in the Honors Program Historiography Colloquium (HIST 53002), intended to introduce the student to basic issues of critical interpretation and historiography through a specific field. In the fall and spring of the senior year, the student will work on a thesis (40 to 80 pages) under the supervision of a particular faculty member. The student will register for HIST 58003 (three senior thesis credits) in the fall and HIST 58004 (three senior thesis credits) in the spring of the senior year.

Phi Theta Alpha. Students who have completed at least four major courses in history, earning a grade point average of 3.65 or above are eligible for the Notre Dame chapter of Phi Alpha Theta, a national history honor society. The History Department initiates new members once per year in the spring.

COURSE DESCRIPTIONS

All of the courses associated with this academic program can be found online at registrar.nd.edu/ students/class_search.php. The scheduled classes for a given semester may be found by clicking on “Class Search” and selecting the subject History. Course descriptions can be found by clicking on the subject code and course number in the search results.

Irish Language and Literature

Chair
Sarah McKibben
The only one of its kind in North America, the Department of Irish Language and Literature began offering a major and a supplemental major in Irish Language and Literature in the fall 2012 semester. The department also gives undergraduates the opportunity to complete a minor in the field. These programs teach students Irish, the indigenous language of Ireland and the voice of the oldest vernacular literature in Europe. It also allows them to engage Irish culture in its native language.

Officially launched on October 1, 2004, by His Excellency Noel Fahey, Irish Ambassador to the United States of America, the Department of Irish Language and Literature recognizes Notre Dame’s commitment to the Irish language and the centrality of Irish to the academic discipline of Irish Studies.

Requirements for a Major in Irish Language and Literature (with a language-intensive concentration) In addition to Intermediate Irish I, a student must take
- Intermediate Irish II
- Advanced Irish I & II
- 2 survey courses—covering medieval to 18th-century, and 19th- to 21st-century literature, respectively
- 4 electives taken at a 30000/40000 level
- 1 elective taken at a 40000 level and taught in the Irish language

Supplemental Major (with a language-intensive concentration) Requirements are the same as those for the major except only 2 elective courses at the 30000/40000 level are required.

Requirements for a Major in Irish Language and Literature (with a literature-intensive concentration) In addition to Intermediate Irish I, a student must take
- Intermediate Irish II
- 2 survey courses—covering medieval to 18th-century, and 19th- to 21st-century literature, respectively
- 7 electives taken at a 30000/40000 level

Supplemental Major (with a literature-intensive concentration) Requirements same as those for the major except only 5 elective courses at 30000/40000 level are required.

Students pursuing a minor in Irish language and literature are required to complete the following courses:
- 1. Take and pass the following Irish language courses: Beginning Irish I & II, Intermediate Irish and Advanced Readings in Irish Culture.
2. Take and pass three Irish literature courses offered by the Department of Irish Language and Literature, two of which must be a 300 level or above.

**COURSE DESCRIPTIONS**
All of the courses associated with this academic program can be found online at registrar.nd.edu/students/class_search.php. The scheduled classes for a given semester may be found by clicking on “Class Search” and selecting the subject Irish Language and Literature. Course descriptions can be found by clicking on the subject code and course number in the search results.

---

**Mathematics**

Chair:
- Jeffrey Diller

Associate Chair:
- Richard Hind

Director of Graduate Studies:
- Julia Knight

Director of Undergraduate Studies:
- Sonja Mapes

Charles L. Huisking Professor of Mathematics:
- Julia F. Knight

John and Margaret McAndrews Professors of Mathematics:
- Mark Behrens; Francois Ledrappier

John A. Zahm, C.S.C., Professor of Mathematics
- Stephen A. Stolz

Rev. Howard J. Kenna, C.S.C., Professor of Mathematics
- Karsten Grove

Professors:
- Peter A. Cholak; Francis X. Connolly; Jeffrey A. Diller; William G. Dwyer (emeritus); Leonid Faybusovitch; Michael Gekhtman; Matthew Gursky; Alexander J. Hahn; Brian C. Hall; Qing Han; Alexander A. Himonas; Alan Howard (emeritus); Xiabo Liu; Juan Migliore; Gerard K. Misiolek; Liviu Nicolaescu; Timothy O’Meara (Kenna Professor of Mathematics, emeritus, and provost emeritus); Richard R. Otter (emeritus); Claudia Polini; Barh Pollak (emeritus); Mei-Chi Shaw; Brian Smyth; Dennis M. Snow; Nancy K. Stanton; Sergei Starchenko; Laurence R. Taylor; E. Bruce Williams; Warren J. Wong (emeritus); Frederico Xavier

Associate Professors:
- Katrina Barron; Mario Borelli (emeritus); Nero Budur; John E. Derwent (emeritus); Matthew J. Dyer; Samuel R. Evans; David Galvin; Abraham Goetz (emeritus); Richard Hind; Gabor Székelyhidi; Vlada Vuckovic (emeritus)

Assistant Professors:
- Andrei Jorza; Cladiu Raicu

Associate Special Professional Faculty:
- Arthur Lim; Annette Pilkington

**Program of Studies.** Students in the College of Arts and Letters may pursue a major in mathematics with a concentration in honors. (Note that this program should not be confused with the Arts and Letters/Science Honors program and that several concentrations, including Honors, are available with a major in mathematics in the College of Science.) The mathematics major in arts and letters aims to give the student a thorough liberal intellectual discipline and to furnish an adequate background for other fields of study. At the same time it prepares the student for graduate work in mathematics, and many of those who have taken the program have entered graduate schools in that field. Others have entered philosophy, medicine, law, economics and industrial management.

---

**THE PROGRAM OF COURSES**

**First Year**

**First Semester**
- English 3
- History or Social Science 3
- MATH 10850. Honors Calculus I 4
- Natural Science 3
- Language: French, German or Russian recommended 3
- Moreau First Year Experience 1

**Second Semester**
- Language: French, German or Russian 3
- University Seminar 3
- MATH 10860. Honors Calculus II 4
- Natural Science 3
- Electives 3
- Moreau First Year Experience 1

**Sophomore Year**

**First Semester**
- Core Course 3
- Language: French, German or Russian 3
- Fine Arts Elective 3
- MATH 20810. Honors Algebra I 3
- MATH 20850. Honors Calculus III 4

**Second Semester**
- Introduction to Philosophy 3
- Core Course 3
- Theology 3
- MATH 20820. Honors Algebra II 3
- MATH 20860. Honors Calculus IV 4

**Junior Year**

**First Semester**
- Theology 3
- MATH 30810. Honors Algebra III 3
- MATH 30850. Honors Analysis I 3
- Elective 5
- History or Social Science 3

---

Students intending to follow this major in the College of Arts and Letters must declare their intention to the advisor indicated by the mathematics department and the dean of arts and letters at advance registration in the spring of their freshman year. Students must have completed or be completing satisfactory work in MATH 10850 and 10860. The program of their studies is subject in its entirety to approval by the advisor.

Students whose first major is in the College of Arts and Letters may also pursue a second major in mathematics. See “Mathematics as a Second Major” in the College of Science section of this Bulletin.
Second Semester  
Philosophy  3  
MATH 30820, Honors Algebra IV  3  
MATH 30860, Honors Analysis II  3  
English/American Literature  3  
Elective  3  

Senior Year  
First Semester  
Mathematics Electives  6  
Electives  9  

Second Semester  
Mathematics Electives  6  
Electives  9  

(At least six credits of mathematics electives must be at the 40xxx level.)

The Senior Thesis for Mathematics Majors  
Students in the mathematics program have the option of writing a thesis on a subject in mathematics, or in an interdisciplinary area connected to mathematics. Such a thesis is strongly encouraged for math honors students and required of students in the SUMR program. This project is intended to give the student a better sense of how mathematics is done and used, and to develop in the student the habit of learning mathematics and its applications in an independent setting. In most cases, this work would be expected to be expository, but based on advanced-level readings. It should represent an effort that goes beyond what is found in an undergraduate course. It is especially desirable for a student to present a somewhat novel approach to an established subject, or to explore one of the many interesting connections that mathematics has with other disciplines.

During the second semester of the junior year and the first semester of the senior year, the student will work closely with a faculty advisor on a program of readings in preparation for the thesis, receiving 2 credits for each of these two semesters of work, under MATH 48800.

The thesis is to be crafted during the second semester of the senior year. The thesis must be submitted to the director of undergraduate studies by April 15 of the senior year. If the thesis is approved, the student will receive 2 credits under MATH 48900 and the citation of "Graduation with Senior Thesis" will appear on the transcript.

Students interested in writing a senior thesis should contact the director of undergraduate studies in the Department of Mathematics.

COURSE DESCRIPTIONS  
All of the courses associated with this academic program can be found online at registrar.nd.edu/students/class_search.php. The scheduled classes for a given semester may be found by clicking on “Class Search” and selecting the subject Mathematics. Course descriptions can be found by clicking on the subject code and course number in the search results.

Medieval Studies  
Robert M. Conway Director of the Medieval Institute:  
John Van Engen (History)  
Director of Undergraduate Studies:  
Linda Major  
Fellows of the Medieval Institute:  
Christopher Abram (English); Rev. Joseph P. Amar (Classics: Arabic); Ann Astell (Theology); Rev. Yuriy Avvakumov (Theology); Zygmunt G. Baranski (Romance Languages: Italian); Alexander Blachly (Music); W. Martin Bloomer (Classics: Latin); Maureen B. McCann Boulton (Romance Languages: French); Theodore J. Cachey (Romance Languages: Italian); Peter Casarella (Theology); John C. Cavadini (Theology); Robert R. Coleman (Art History); Richard Cross (Philosophy); Rev. Brian E. Daley, S.J. (Theology); JoAnn DellaNeva (Romance Languages: French); Rev. Michael S. Driscoll (Theology); Stephen D. Dumont (Philosophy); Kent Emery, Jr. (Liberal Studies; Philosophy); Margot Fassler (Music, Theology); Felipe Fernández-Armesto (History); Alfred Freddoso (Philosophy); Stephen E. Gersh (Philosophy); Robert Goulding (History and Philosophy of Science); Karen Graubart (History); Brad S. Gregory (History); Li Guo (Classics: Arabic); Daniel Hobbins (History); Peter Holland (Theater); Tala Jajour (Music); Peter Jeffery (Music); Rev. John L. Jenkins, C.S.C. (Philosophy); Claire Taylor Jones (German); Encarnación Juárez-Almendros (Romance Languages: Spanish); Kathryn Kerby-Fulton (English); Mary M. Keys (Political Science); Brian Kroustenko (Classics: Latin); Ian Kuijt (Anthropology); Blake Leyerle (Theology); Tim Machan (English); Julia Marvin (Liberal Studies); Peter McQuillan (Irish Language and Literature); Margaret Meserve (History); Christian R. Mooes (Romance Languages: Italian); Vittorio Montemaggi (Romance Languages: Italian); Hildegund Müller (Classics: Latin); Amy Mulligan (Irish Language and Literature); David O’Connor (Philosophy; Classics); Mark C. Pilkinton (Theatre); Jean Porter (Theology); Rory Rapple (History); Gretchen Reydams-Schils (Liberal Studies; Philosophy); Gabriel Said Reynolds (Theology); Denis Robichaud (Liberal Studies); Dayle Seidenspinner-Núñez (Romance Languages; Spanish); Susan Guise Sheridan (Anthropology); Deborah Tor (History); Joseph P. Wawrykow (Theology)

Program of Studies. The Medieval Institute is one of Notre Dame’s oldest and most renowned centers of learning. Established in 1946, it was envisaged from the start to be a premier locus for the study of the European Middle Ages. Over the decades its scope has broadened to where it now includes Islamic, Jewish, Eastern, and Western Christian studies. The academic strength and stature of the Institute are due not only to its faculty, students, and
library, but also to its ongoing commitment to the original liberal arts ideal.

Medieval Studies prepares students to enter graduate school, law school, medical school, or various careers such as business, government, education, publishing, ministry, curatorship, and research. With an emphasis on close reading, precise textual analysis, careful writing, and rigorous discussion, the program is designed to foster critical thinking, oral and written communication skills, and a heightened appreciation for history, religion, and culture.

Far from being the “dark ages,” medieval civilization witnessed the dawn of many of today’s institutions including universities, hospitals, legal and economic systems, religious communities and doctrine, architecture, engineering, science, art, and literature. Contemporary society is indebted to the Middle Ages not only for its inheritance, but also for its relevance.

The Medieval Studies program offers four undergraduate tracks, each based on an interdisciplinary model. It draws courses from Anthropology; Art, Art History, and Design; Classics; English; German and Russian Languages and Literature; History; Irish Language and Literature; Music; Philosophy; Political Science; Romance Languages and Literatures; and Theology. From these 12 disciplines, students are encouraged to build a unique program of study, in consultation with a faculty advisor, around an area of concentration that captures an interest, prepares for a field, or contributes to an academic pursuit.

Students interested in Medieval Studies may elect one of the following four options:

1. Major in Medieval Studies
2. Honors Major in Medieval Studies
3. Supplementary Major in Medieval Studies
4. Minor in Medieval Studies

All three major tracks include two common components. Each student’s curriculum is built around a concentration chosen by the individual (from the 12 participating departments), in conjunction with a faculty advisor. The concentration requires a minimum of four interrelated courses reflecting an intellectual and curricular coherence. An advanced seminar (3 credits) is the second common element in each of the major tracks. Students in the seminar are expected to read widely and discuss vigorously a set of sources that present a particular issue from several points of view. In addition, they are also expected to write a substantial research paper. The goal of the seminar is to engage students in thinking critically and knowledgeably across the boundaries of traditional disciplines while maintaining a focus on a particular time, place, or issue.

The three major tracks and the minor track also have an introductory required course (3 credits), MI 20001, The World of the Middle Ages.

Following are brief outlines of the basic requirements for the three major tracks and the minor track. Further details can be obtained from the director of undergraduate studies in the Medieval Institute.

**Medieval Studies Major** (30 credits)
- The World of the Middle Ages course
- Four courses drawn from two or more departments representing a concentration
- Four electives in Medieval Studies drawn from at least two departments
- One advanced seminar (4xxxx-level or above) in Medieval Studies

**Medieval Studies Honors Major** (36 credits)
- Same requirements as major in Medieval Studies (see above)
- EXCEPT one intermediate Latin course and one advanced Latin course are required in lieu of two medieval electives
- PLUS an honors thesis for 6 credits

**Medieval Studies Supp. Major** (24 credits)
- The World of the Middle Ages course
- Four courses drawn from two or more departments representing a concentration
- Two or three electives in Medieval Studies
- Medieval Studies seminar (on a space-available basis and in conjunction with MI electives option)

**Medieval Studies Minor** (15 credits)
- The World of the Middle Ages course
- Three or four electives in Medieval Studies drawn from at least two departments
- Medieval Studies seminar (on a space-available basis and in conjunction with MI electives option)

**COURSE DESCRIPTIONS**

All of the courses associated with this academic program can be found online at registrar.nd.edu/students/class_search.php. The scheduled classes for a given semester may be found by clicking on “Class Search” and selecting the subject Medieval Institute. Course descriptions can be found by clicking on the subject code and course number in the search results.

**Music**

**Chair:**
Peter H. Smith
Kough-Hesburgh Professor of Music History and Liturgy:
Margot Fassler
Michael P. Grace Chair in Medieval Studies:
Peter Jeffery
J.W. Van Gorkom Professor of Music:
Susan L. Youens

**Professors:**
Alexander Blachly; Calvin M. Bower (emeritus);
William Cerny (emeritus); Craig J. Cramer;
Kenneth W. Dye; Ethan T. Haimo (emeritus);
Georgine Resick (emeritus); Carmen Tellez

**Associate Professors:**
John Blacklow; Karen L. Buranskas (emeritus);
Mary E. Frandsen; Paul G. Johnson (emeritus);
Rev. Patrick Maloney, C.S.C. (emeritus); Carolyn
R. Plummer (emeritus)

**Assistant Professors:**
John Liberatore; Tala Jarjour

**Professional Specialist:**
Mark Beudert

**Associate Professional Specialists:**
Lawrence H. Dwyer, Stephen Lancaster; Tricia
Park; Daniel C. Stowe

**Assistant Professional Specialist:**
Daniel Schlosberg

**Concurrent Faculty:**
Christopher Chowrimootoo; Mark Doerries;
Pierpaolo Polzonetti

**Band Staff:**
Justin McManus; Matthew Merten; Sam
Sanchez; Alison Thigpen

**Program of Studies.** The Department of Music offers students a variety of musical experiences in accordance with its two objectives: (1) to provide all students, regardless of their major, knowledge and training in music through introductory, historical and theoretical courses, through participation in large and small ensembles, and through applied instrumental or vocal study; and (2) to provide intense curriculum and training for the student who chooses music as a major. Students majoring in music will choose a concentration in Theory and History or in Performance. Each concentration offers an honors option for students intending to pursue professional study in the field after graduation. These students should also continue to study at least one non-native language beyond the college’s language requirement. All the concentrations have requirements beyond the course work. These may include recitals, ensembles, juries, and so forth.

Students considering these programs should contact the department as early as possible, preferably in the first year of study. This is especially important if study abroad is anticipated.
Advising. Each major will be assigned a faculty advisor who must be consulted in person to discuss the program of study before a student may register for classes.

Lessons. Music majors in the Performance concentration qualify for a 100 percent discount on weekly one-hour applied music lessons on their primary instrument and a 50 percent discount on a secondary instrument. Students in the Theory and History concentration qualify for a 50 percent discount on lessons on a primary instrument and no discount for lessons on a secondary instrument. Applied music lessons are also available for non-majors for a fee. Lessons may count as "activity" elective credits. (The College of Arts and Letters accepts up to three activity credits toward graduation.) The fee is charged to the students' accounts, and no refunds are made after the second lesson. Lessons do not count toward the University fine arts requirement.

Interdisciplinary Minor in Liturgical Music. This 18-credit minor consists of three 3-credit courses in theology and two 3-credit courses in music, plus three credits of music lessons or approved ensembles, to be selected in consultation with the student's music advisor. Contact the director of undergraduate studies in the Department of Theology.

Master of Sacred Music degree. The Master of Sacred Music (MSM) is a degree program situated in the Department of Theology at the University of Notre Dame with major participation from the College of Arts and Letters at the University of Notre Dame. For information, contact Janet Rudasics at (574) 631-5349.

Doctor of Musical Arts degree. The Doctor of Musical Arts (DMA) is a degree program situated in the College of Arts and Letters at the University of Notre Dame with major participation from the Department of Music and Theology. For more information, contact Janet Rudasics at (574) 631-5349.

HISTORY/THEORY
The requirements for a 33-credit major with a concentration in theory and history are:

<table>
<thead>
<tr>
<th>Class</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Harmony and Voice Leading (Theory I)</td>
<td>0</td>
</tr>
<tr>
<td>(Prerequisite course; 3 credits count as University elective)</td>
<td></td>
</tr>
<tr>
<td>Advanced Harmony and Voice Leading (Theory II)</td>
<td>3</td>
</tr>
<tr>
<td>Chromatic Harmony (Theory III)</td>
<td>3</td>
</tr>
<tr>
<td>Twentieth-Century Music: Structure and Style (Theory/History IV)</td>
<td>3</td>
</tr>
<tr>
<td>Musicianship I–III</td>
<td>3</td>
</tr>
<tr>
<td>History I–III</td>
<td>9</td>
</tr>
<tr>
<td>Four 3-credit courses in history and theory, 30xxx level and above</td>
<td>12</td>
</tr>
<tr>
<td>Music Total</td>
<td>33</td>
</tr>
</tbody>
</table>

College/University Requirements and Electives 87

Honors in Music (optional) 6

(One additional 3-credit course in music history or theory, 30xxx-level or above, and a senior project, to be determined with advisor)

Students who have had previous music education may place out of Harmony and Voice Leading (Theory I) and Musicianship Labs, by examination.

Students with a music GPA of 3.7 or higher may be invited to participate in the honors program at the end of their sophomore year.

Applied lessons and ensembles are encouraged, but not required. Students intending to continue the study of music after graduation should maintain a rigorous program of lessons and applied music.

PERFORMANCE
Students who wish to major in performance must have had a minimum of four years of instruction on their instrument prior to their enrollment at Notre Dame.

The requirements for a 42-credit major with a concentration in performance are:

<table>
<thead>
<tr>
<th>Class</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Harmony and Voice Leading (Theory I)</td>
<td>0</td>
</tr>
<tr>
<td>(Prerequisite course; 3 credits count as University elective)</td>
<td></td>
</tr>
<tr>
<td>Musicianship I (prerequisite course)</td>
<td>0</td>
</tr>
<tr>
<td>Advanced Harmony and Voice Leading (Theory II)</td>
<td>3</td>
</tr>
<tr>
<td>Chromatic Harmony (Theory III)</td>
<td>3</td>
</tr>
<tr>
<td>Twentieth-Century Music: Structure and Style (Theory/History IV)</td>
<td>3</td>
</tr>
<tr>
<td>History I–III</td>
<td>9</td>
</tr>
<tr>
<td>Two MUS 30xxx-level or above courses in music theory or history that carry 3 credits each</td>
<td>6</td>
</tr>
<tr>
<td>Three additional elective credits in music</td>
<td>3</td>
</tr>
<tr>
<td>Advanced Performance Studio (1 credit per semester for the first year; 2 credits for the six semesters thereafter)</td>
<td>14</td>
</tr>
<tr>
<td>1 recital</td>
<td>1</td>
</tr>
</tbody>
</table>

Total Music 42

College/University Requirements and Electives 78

Total 120

Honors in Music (optional) 6

(Additional electives at the 30xxx-level or higher and/or applied music study (5 credits total) and an additional recital (1 credit).)

Students with a music GPA of 3.7 or higher may be invited to participate in the honors program at the end of their sophomore year.

In order to remain in the performance program, students must be approved by faculty. In the spring semester of the freshman, sophomore, and junior years, all performance majors must participate in juries. Afterwards, the faculty will assess the level of their performance to determine if they are qualified to continue in the program. Students who demonstrate a high level of achievement in the sophomore juries will be candidates for the honors program.

Students in the performance concentrate may take proficiency exams to pass out of one or more of the musicianship courses; however, if they do not pass the proficiencies, they must enroll in Musicianship I–III.

Performance concentrators must present a senior recital. (Honors majors must present an additional recital.)

Participation in ensembles (e.g., chamber music class, large ensembles, chorale, opera, etc.) is required each semester. (No credit toward the major, but may be applied toward graduation as "activity" credits.)

Students who have had previous music education may place out of Harmony and Voice Leading (Theory I), by examination.

COURSE DESCRIPTIONS
All of the courses associated with this academic program can be found online at registrar.nd.edu/students/class_search.php. The scheduled classes for a given semester may be found by clicking on “Class Search” and selecting the subject Music. Course descriptions can be found by clicking on the subject code and course number in the search results.
Neuroscience and Behavior

Director of Undergraduate Studies:
Anré Venter

Program of Studies. Neuroscience is a relatively young, exciting, and fundamentally interdisciplinary field devoted to the scientific study of the nervous system. Neuroscience encompasses the study of problems from multiple disciplinary perspectives at different levels of analysis in human and non-human organisms. It includes, for example, the study of molecular mechanisms in individual neurons and the coordination of millions of neurons into neural systems. Problems range from investigation of the evolution of nervous systems in basal vertebrates to the application of neuroscience to education and law. Neuroscientists also seek to develop neurologically plausible models of human thinking, affect and behavior.

Neuroscience creates a context for scholarly conversation about the nature of mind, brain and behavior. It engages experts in collaboration across diverse fields, including biological sciences, chemistry, computer science, engineering, linguistics, mathematics, medicine, philosophy, physics and psychology. Reflecting the interdisciplinary nature of the major, the curriculum includes flexibility such that it can be customized to best prepare students for a variety of future careers. Students studying neuroscience will be prepared to pursue professional degree programs (medical, dental, veterinary, clinical sciences or psychology) and graduate programs in areas such as neuroscience, biological sciences or psychology.

The neuroscience and behavior major is an interdisciplinary program that includes both Bachelor of Science and Bachelor of Arts tracks. The requirements for the major are similar for both tracks, with a foundational requirement of an introductory neuroscience course with a laboratory in the spring of the sophomore year. The two tracks differ in how they satisfy college-level requirements. Both required courses and electives that satisfy the major credit requirements are drawn primarily from the Biological Sciences Elective Category OR the preapproved faculty advisors OR free choice from the Biological Sciences Elective Category OR the Psychology Elective Category listed above OR additional electives in other departments listed below:

- BIOS 20401. Biological Anthropology
- ANTH 20105. Human Ethology
- ANTH 30140. Primatology
- ANTH 35106. Primate Behavior
- ANTH 35110. Primate Behavior & Ecology
- PSY 43531. Psychology and Medicine
- PHIL 34353. Philosophy of Mind

SAMPLE CURRICULUM:

First Year
Fall Semester
Calculus A
General Chemistry I & Lab
Social Science**
Writing & Rhetoric
Theology*

Spring Semester
Calculus B
Organic Chemistry I & Lab
Philosophy*
Fine Art/Literature*
Elective

Sophomore Year
Fall Semester
Biological Sciences I & Lab
Statistics
CSEM
Psychology Major Elective***
Language

Spring Semester
Biological Sciences II & Lab
Neuroscience & Behavior (& Lab)
Psychology Major Elective
Language
Research Lab

To Table of Contents
Neuroscience and Behavior

Junior Year

**Fall Semester – ABROAD**
- Philosophy* 3
- Fine Art/Literature* 3
- History* 3
- Elective 3

**Spring Semester**
- Biological Sciences Major Elective 3
- Additional Major Elective 3
- Research Lab 3
- Elective 3

Senior Year

**Fall Semester**
- Psychology Major Elective 3
- Additional Major Elective 3
- Biological Sciences Major Elective 3
- Research Lab 3
- Elective 3

**Spring Semester**
- Additional Major Elective 3
- Biological Sciences Major Elective 3
- Theology* 3
- Research Lab 3
- Elective 3

Elective 3

---

* These courses also fulfill the University Seminar Requirement

** Introductory Psychology fulfills this requirement as well as the Core Neuroscience & Behavior Major requirement

*** One of the Psychology Major Elective courses also fulfills the College Social Science Requirement

• This curriculum assumes 2 semesters of language at Notre Dame

**PREMED CONCENTRATION**

In addition to the general BA undergraduates interested in attending Medical School are offered the option of completing a BA in Neuroscience & Behavior with a Premed concentration. The BA in Neuroscience and Behavior with the Premed Concentration consists 110 to 111 credits of required courses (including University Requirements: 40 credits; College Requirements: 12–15 credits depending on which level language course students place into; and Major Requirements including the Premed courses: 61–62 credits depending on the number of 3 versus 4 credit required courses elected) leaving a range of free electives (10 to 11) for a total of 120 credits. It should be noted that Pre-health (or Premed) students in the College of Arts & Letters typically graduate with approximately 134 credit hours so students completing this concentration do have the opportunity to take additional elective courses. The specific major requirements are as follows:

**Core Major Requirements:**
- 14/15 credit hours (depending on which statistics course is completed)
  - PSY 10000/20000. Introductory Psychology 3
  - PSY 30100. Experimental Psychology I: Statistics 4  *(or equivalent)*
  - BIOS 10161. Biological Sciences I & Lab (11161) 4  *(or 20201 / 21201)*
  - BIOS 20450. Neuroscience & Behavior & Lab (21450) 4 *(NOT BIOS 30338)*

**Foundational Science Category:**
- 4 credits—comprising a single required course
  - BIOS 10162. Biological Sciences II & Lab (11162) 4 *(or 20202 / 21202)*

**Medical School/MCAT Required Course Category:**
- 4 courses required (16 credits)
  - CHEM 20172. General Chemistry II & Lab (21172) 4
  - CHEM 20273. Organic Chemistry II & Lab (21273) 4 *(or 20283 / 21283)*
  - PHYS 10310. Physics I & Lab (11310) 4 *(or 30210 / 31211 or 10411 / 11411)*
  - PHYS 10320. Physics II & Lab (11320) 4 *(or 20435 / 21435 or 30220 / 31220)*

**COURSE DESCRIPTIONS**

For a list of approved courses, contact the Director of Undergraduate Studies in the College of Science for this program (Nancy Michael, nmichael@nd.edu). All of the courses associated with this academic program can be found online at registrar.nd.edu/students/class_search.php.

The scheduled classes for a given semester may be found by clicking on “Class Search” and searching within the home department of the course listing. Course descriptions can be found by clicking on the subject code and course number in the search results.

**Biological Science Elective Category:**
- 3 Courses required (9 credits)
  - BIOS 30344. Human Physiology 3
  - AND two (2) of the following courses:
    - BIOS 30339. Comparative Neurobiology 3
    - BIOS 30407. Animal Behavior 3
    - BIOS 30301. Embryology 3
    - BIOS 40339. Human Gross Anatomy 3
    - BIOS 60522. Behavioral Ecology Variable
    - BIOS 60571. Topics in Physiology Variable
    - BIOS 60572. Topics in Neuroscience Variable

**Psychology Elective Category:**
- 3 Courses required (9 credits)
  - PSY 30160. Experimental Psychology II: Research methods 4
  - PSY 30220. Adolescent Development 3
  - PSY 30253. Introduction to Cognitive Development 3
  - PSY 30310. Abnormal Psychology 3
  - PSY 30358. Behavioral Medicine 3
  - PSY 30400. Cognitive Psychology 3
  - PSY 30430. Learning & Memory 3
  - PSY 30501. Intro to Biopsychology 3
  - PSY 30440. Sensation & Perception 3
  - PSY 30520. Introduction to Cognitive Neuroscience 3
  - PSY 40126. Introduction to Quantitative Neuroscience 3
  - PSY 40675. Artificial Intelligence 3
  - PSY 43250. Cognitive Development 3
  - PSY 43557. Food and the Brain 3
  - PSY 43560. Health Psychology 3
  - PSY 43526. The Sleeping Brain 3
  - PSY 65553. Neuropharmacology of Stress 3
  - PSY 43540. Applied Hormones & Behavior 3

**Additional Elective Category:**
- 3 Courses required (9 credits)
  - CHEM 40420. Biochemistry 3

AND a maximum of 6 credits of undergrad research with preapproved faculty advisors OR free choice from the Biological Sciences Elective Category OR the Psychology Elective Category listed above OR additional electives in other departments listed below:

- BIOS 20401: Biological Anthropology 3
- ANTH 20105: Human Ethology 3
- ANTH 30140: Primatology 3
- ANTH 35106: Primate Behavior 3
- ANTH 35110: Primate Behavior & Ecology 3
- PSY 43531: Psychology and Medicine 3
- PHIL 34353: Philosophy of Mind 3

**Note:** In addition, though not required here, students intending to go to medical school are highly encouraged to complete the Experimental Psychology II: Research Methods course in preparation for the MCAT exam.

---

To Table of Contents
Philosophy

Chair:
Jeffrey Speaks
E.J. and H.M. O’Neill Professor of Science, Technology and Values:
Kristin Shrader-Frechette
Rev. Theodore M. Hesburgh Professor Emeritus of Arts and Letters:
Rev. David Burrell, C.S.C. (emeritus)
McMahon/Hark Professors of Philosophy:
Karl Ameriks (emeritus); Michael Delesele
Notre Dame Professor of Philosophy:
Gary Gutting
Rev. John A. O’Brien Professor of Philosophy:
Robert Audi; Richard Cross; Alvin Plantinga (emeritus)
John Cardinal O’Hara Professor of Philosophy:
Peter Van Inwagen
George N. Shuster Professor of Philosophy:
Michael J. Loux (emeritus); Christopher Shields
Rev. John A. O’Brien Senior Research Professor (Emeritus):
Alasdair C. MacIntyre (emeritus)
John and Jean Oesterle Professor of Thomistic Studies:
Pamela Costigan
Rev. John A. O’Brien Professor of Philosophy:
Pamela Costigan
John and Jean Oesterle Professor of Thomistic Studies:
Pamela Costigan
Associate Professor of Philosophy:
Samuel Newlands

Professors:
Patricia Blanchette; Anjan Chakravartty; Fred Dullmayr (emeritus); Cornelius F. Delaney; Michael R. DePaul; Stephen Dumont; John Finnis (concurrent); Thomas P. Flint; Stephen Gersh (concurrent); Vittorio Hooi (concurrent); Don A. Howard; Rev. John I. Jenkins, C.S.C.; Lynn Joy; Edward Manier (emeritus); Robert Norton (concurrent); Gretchen Reydams-Schils (concurrent); Jeffrey Speaks; Michael Rea; Mark Roche (concurrent); Kenneth Sayre (emeritus); James P. Sterba; Ted A. Warfield; Stephen H. Watson

Associate Professors:
Timothy Bays; Katherine Braden; Sheila Breenan (emeritus); Curtis Franks; Sean Kelsey; Janet A. Kourany; Vaughn R. McKim (emeritus); G. Felicdus Munzel (concurrent); John O’Callaghan; David O’Connor; Fred Rush; David Solomon; Leopold Stubenberg; Meghan Sullivan; Nicholas Teh

Assistant Professors:
Therese Cory; Joseph Karbowski; Blake Roeber; Nicholas The

Assistant Professional Specialist:
Alexander Jech

Program of Studies. There are two ways to major in philosophy: Regular philosophy majors are required to take eight courses in philosophy beyond the general two-course University requirement. Three specific courses must be included among the eight: a two-semester sequence of courses in the history

Spring Semester
Additional Major Elective
3
Human Physiology (Biological Sciences Major Elective)
3
Biological Sciences Major Elective
3
Theology*
3
Research Lab
3

* These courses also fulfill the University Seminar Requirement
** Introductory Psychology fulfills this requirement as well as the Core Neuroscience & Behavior Major requirement
*** One of the Psychology Major Elective courses also fulfills the College Social Science Requirement

This curriculum assumes 2 semesters of language at Notre Dame

Sophomore Year
Fall Semester
Biological Sciences I & Lab
4
Organic Chemistry II & Lab
4
CSEM
3
Psychology Major Elective***
3
Language
3–4

Spring Semester
Biological Sciences II & Lab
4
General Chemistry II & Lab
4
Psychology Major Elective
3
Language
3–4
Research Lab
3

Junior Year
Fall Semester – ABROAD
Physics I & Lab
4
Philosophy*
3
Fine Art/Literature*
3
History*
3
Elective
3

Spring Semester
Physics II & Lab
4
Neuroscience & Behavior (& Lab)
4
Additional Major Elective
3
Research Lab
3
Elective
3

Senior Year
Fall Semester
Statistics
3–4
Psychology Major Elective
3
Biochemistry (Additional Major Elective)
3
Biological Sciences Major Elective
3
Research Lab
3

15–16

Spring Semester
Additional Major Elective
3
Human Physiology (Biological Sciences Major Elective)
3
Biological Sciences Major Elective
3
Theology*
3
Research Lab
3

* These courses also fulfill the University Seminar Requirement
** Introductory Psychology fulfills this requirement as well as the Core Neuroscience & Behavior Major requirement
*** One of the Psychology Major Elective courses also fulfills the College Social Science Requirement

This curriculum assumes 2 semesters of language at Notre Dame

Table of Contents
of philosophy, Ancient and Medieval Philosophy (PHIL 30301) and Modern Philosophy (PHIL 30302), and a course in formal logic (PHIL 30313 or, for qualified students, PHIL 43907; the logic requirement can also be fulfilled by MATH 10130, though this course does not count toward the eight courses required for the major). In addition, regular majors must take at least two courses at the 40xxx level and three electives at either the 30xxx level or 40xxx level.

Honors philosophy majors complete all the requirements for the regular major and in addition write a senior thesis. Students writing the senior thesis enroll in PHIL 48499 Senior Thesis in both semesters of the senior year (the equivalent of two regular 3-hour seminars). To be eligible for the honors major, and thus for the senior thesis, students must normally maintain a GPA of 3.5 or above in the majors courses. Students considering the senior thesis are strongly encouraged to have completed two of the three core courses (the two history surveys and logic) AND three 40000-level seminars by the end of the junior year.

Students majoring in other departments may take a minor in philosophy by completing the following in addition to the two-course University requirement in Philosophy: the sequence in the history of PHIL 30301 Ancient and Medieval Philosophy and 30302 Modern Philosophy; one course at the 30000 level or 40000 level; one course at the 40000 level.

All 40000-level philosophy courses are writing-intensive requiring at least 20 pages of written work that may take various forms: reflections on readings, class presentations, or shorter or longer research papers. Students planning to go on to graduate studies in philosophy or related disciplines typically write a senior thesis as well.

PHILOSOPHY AND THEOLOGY JOINT MAJOR

Director:
Gabriel Reynolds, Theology

Faculty:
Additional faculty for the joint major are drawn from the departments of philosophy and theology.

Program of Studies. The joint major is intended for undergraduates who are intrigued by philosophical and theological ideas and who have an equal commitment to both disciplines. It seeks to equip such students to handle theology and philosophy adeptly. The major is structured, providing undergraduates with a suitable introduction to the study of both disciplines, but also flexible, granting students considerable scope for the pursuit of their own interests.

The joint major offers the opportunity for an informed investigation of religious and philosophical ideas and should appeal especially to those who intend to pursue graduate work in philosophy or theology.

The joint major incorporates the University requirements in the two departments and most of the formal requirements of the first majors in theology and philosophy. Students in the joint major will take the two-semester sequence in Christian Traditions and an upper-level course in Scripture. The joint major, however, does not require the one-credit proseminar in theology.

Other formal requirements are peculiar to the joint major. Students will study a classical language for two semesters. (For practical as well as pedagogical reasons, this will normally be Greek.) Majors will also be expected to take one joint seminar. Led by a theologian and a philosopher, the joint seminars are offered every spring and will examine an issue in which the differing approaches of philosophy and theology may prove fruitful. The topic and instructors will change from year to year. Finally, each major will submit a senior thesis prepared under the direction of two advisors, drawn from each department. At the option of the directors, this thesis may be presented and discussed in an informal colloquium consisting of the other students in the joint major.

The remaining courses in the joint major will be at the discretion of the student. Normally taken at the 40xxx level, there should be an equal distribution in the electives between theology and philosophy. However, students who wish may devote up to six hours within the joint major to additional language work. These hours may add to the classical language previously studied, or used to begin another language of significance for philosophical and theological work.

The joint major differs from a first major in one discipline and a supplementary major in the other in that the latter requires 55 credit hours, whereas the joint major requires 60. Furthermore, the joint major calls for language instruction beyond what the University requires for all undergraduates. Finally, the joint seminars should prove especially challenging, inviting students to explore important topics in an interdisciplinary way. These features should make the joint major particularly attractive to students preparing for advanced study.

Requirements in Philosophy:
The two-course University requirement.
PHIL 30301 and 30302. History of Philosophy I and II.

PHIL 30313. Formal Logic.

Requirements in Theology:
THEO 10001, 10002, 10003 or 13183 (Foundations) and a 20000 (development level) course (University-required courses).

THEO 40201 and 40202. Christian Traditions I and II.

THEO 40101 or 40108. Upper-division scripture course.

To Table of Contents
Political Science

To Table of Contents
Program of Liberal Studies

Chair:
Tom Stapleford

Rev. John J. Cavanaugh, C.S.C., Professors of Humanities:
Stephen M. Fallon; Michael J. Crowe (emeritus);
Rev. Nicholas Ayo, C.S.C. (emeritus); Kent Emery Jr.; G. Felicitas Munzel; Walter J. Nicgorski (emeritus); F. Clark Power; Gretchen Reydams-Schils; Phillip R. Sloan (emeritus); M. Katherine Tillman (emeritus); Henry M. Weinfield

Associate Professors:
Francesca Bordogna; Robert Goulding; Julia Marvin; Pierpaolo Polonetti; Thomas Stapleford

Assistant Professors:
Christopher Chowimootoo; Jennifer Newsome; Martin; Andrew Radde-Gallwitz; Denis Robichaud

Assistant Professional Specialist:
Joseph Elkanah Rosenberg

Program of Studies. The Program of Liberal Studies, Notre Dame’s Great Books program, offers an integrated three-year sequence of studies leading to the bachelor of arts degree. Students enter the Program at the end of the First Year of Studies.

Fundamental to the Program is a conception of a liberal arts education that aims to avoid the separation of the humanities into isolated disciplines. The Program seeks to provide a unified undergraduate education in all of the liberal arts, including music and the natural sciences. For this reason, the Program is not to be equated with a “general humanities” educational Program. The study of literature, philosophy, natural and social science, theology, history, and the fine arts will take place within a larger unifying conception of the liberal arts that cuts across many of the disciplinary boundaries suggested by these terms. Because the goal of the Program is to provide more than an introduction to various subject matters, none of the tutorials or seminars stands alone in the Program. The curriculum grows organically over the three years, with each course presuming all of its predecessors.

Although the Program provides education in the liberal arts, it also considers the liberal arts in themselves as insufficient for a complete education. The liberal arts are the critical tools of learning, but they are also to be related to the larger search for genuine understanding and philosophic wisdom. Philosophy, which explores the basic questions of epistemology, ethics, and politics, is also related to the claims of the Christian tradition. The Program maintains specific tutorials in the various disciplines to enable the relationships among them to develop systematically and also to foster a concern with what unifies or transcends them.

The normal method of instruction in the Program is through the reading and discussion of primary texts. The student is asked to take an active role in the learning process. Particularly in the seminar, the authors of the great books are considered to be the primary teachers.

The Program requires writing throughout the curriculum, especially in the tutorial classes. In the final year, all students are required to write a senior thesis, usually involving extensive research, under the direction of a faculty advisor. The senior thesis offers students a particularly intensive writing experience and an opportunity to investigate in depth a specialized topic of interest.

Despite the Program’s 68-credit curriculum, Program students may carry second majors, supplementary majors, minors, and concentrations, and they may participate in study abroad programs. When necessary, students may satisfy a limited number of Program requirements by taking non-departmental courses with comparable content. Such exemptions are granted only with the permission of the Program’s Director of Undergraduate Studies and are subject to strict limitations.

Students normally declare a PLS major by the beginning of April of the first year. Declaration of major forms are available by early March in the department office (215 O’Shaughnessy) and website (pls.nd.edu). Students interested in entering the Program are urged to complete the University science and mathematics requirements in the first year. Students may join the Program after the beginning of the sophomore year, although this requires one to make up one or more courses.

SEQUENCE OF COURSES

Sophomore Year

First Semester

20201. Literature I: The Lyric Poem 3
20301. Philosophical Inquiry 3
23101. Great Books Seminar I 4
Elective 3

Second Semester

20302. Bible and Its Interpretation 3
20412. Fundamental Concepts of Natural Science 3
23102. Great Books Seminar II 4
Elective 3

Junior Year

First Semester

30301. Ethics 3
30411. Scientific Inquiry: Theories and Practices 3
30501. Music as a Liberal Art 3
33101. Great Books Seminar III 4
Elective 3

Second Semester

30202. Literature II: Shakespeare and Milton 3
30502. Political and Constitutional Theory: Ancient and Modern 3
33102. Great Books Seminar IV 4
Elective 3

Senior Year

First Semester

40301. Christian Theological Traditions 3
40601. Intellectual and Cultural History 3
43101. Great Books Seminar V 4
48701. Essay Tutorial 3
Elective 3

Second Semester

40302. Metaphysics and Epistemology 3
40412. Science, Society, and the Human Person 3
43102. Great Books Seminar VI 4
48702. Essay Tutorial 2
Elective 3

COURSE DESCRIPTIONS

All of the courses associated with this academic program can be found online at registrar.nd.edu/students/class_search.php. The scheduled classes for a given semester may be found by clicking on “Class Search” and selecting the subject Program of Liberal Studies. Course descriptions can be found by clicking on the subject code and course number in the search results.

To Table of Contents
Psychology

Chair: Lee Anna Clark
Director of Graduate Studies: Kathleen M. Eberhard
Director of Undergraduate Studies: Anré Venter

Program of Studies. Psychology is the scientific study of the behavior of organisms with a primary focus on human behavior. It is concerned with the biological and environmental determinants of behavior as reflected in the study of physiological, sensory, perceptual, cognitive, motivational, learning, developmental, aging, and social processes. The undergraduate program seeks a balance between exposure to basic psychological principles and theories and their extension to the applied areas such as child education, counseling, mental retardation, and behavioral deviancy.

The undergraduate courses are intended to meet the needs of students who plan to (1) major in psychology and later attend graduate school in psychology or affiliated fields, (2) major in psychology as part of a general cultural program, (3) obtain training in psychology as a special supplement to their major interest or (4) use psychology to satisfy social science requirements or electives.

One of the department’s main features is an emphasis on opportunities for close faculty-student involvement in research projects at the undergraduate level. The research specialties in which majors may become involved range from basic research in such areas as psychophysics, human and animal learning, child development, aging, and psycholinguistics, to applied research in a community setting. Students planning to do graduate work in psychology will plan their program in close coordination with their faculty advisors.

Major Requirements. All majors are required to take the Introductory Psychology Course (3 credits from either PSY 10000 for first-year students or PSY 20000 for upper-class students). This course serves as a prerequisite or corequisite for the Psychology Major courses. Students who have achieved a 5 on the AP Psychology exam are not required to take the Introductory Psychology course. The specific major requirements are as follows:

**Required Courses:**

- **Research methods** 4
- **Statistics** 4
- **Policy** 1
- **Experimental Psychology I:**
  - Psychology of Personality 3
  - Abnormal Psychology 3
  - Introduction to Clinical Psychology 3
  - Cross Cultural Psychology 3
  - Social Psychology 3
  - Educational Psychology 3
  - Psychology of Peace 3
  - Behavioral Statistics 3
  - Cybercrime and the Law 3

- **Introduction to Cognitive Development** 3
- **Behavioral Medicine** 3
- **Cognitive Psychology** 3
- **Learning & Memory** 3
- **Sensation & Perception** 3
- **Biopsychology** 3
- **Behavioral Genetics** 3
- **Introduction to Cognitive Neuroscience** 3

**40000 Senior Seminar Courses:**

A minimum of 2 courses (6 credits) from this category. These are small, in-depth discussion-oriented seminars generally in the instructor’s specific area of expertise and the options may vary from semester to semester or year to year. All 40000 level seminars are designated writing-intensive courses, satisfying the College of Arts and Letters writing requirement. (See the introductory portion of the Arts and Letters section.)

**Note:**
- Introductory Psychology does not fulfill any of the 30-credit-hour requirements for the major.
- PSY 27800 Research Lab credits are strongly recommended for any students’ intent on pursuing a graduate career in psychology.
- In some cases, students for whom psychology is their second major may complete another statistics course (BAMG 20150; ECON 30330, ACMS 20340 or BIOS 40411) in place of the PSY 30100 course. However, these students will be required to complete an additional psychology course (from the 30000 or 40000 level categories) to complete the requisite number of psychology courses to graduate with the major.

**COURSE DESCRIPTIONS**

All of the courses associated with this academic program can be found online at registrar.nd.edu/students/class_search.php. The scheduled classes for a given semester may be found by clicking on “Class Search” and selecting the subject Psychology. Course descriptions can be found by clicking on the subject code and course number in the search results.

---

**Associate Professors:**

- James Brockmole; Ying (Alison) Cheng; Charles R. Crowell; Sidney D’Mello; Kathleen Eberhard; Dawn M. Gondoli; Gerald Haeffel; Nicole McNeil; Kristin Valentino; Lijuan (Peggy) Wang; Lira Yoon; Guangjian Zhang; Zhiyong (Johnny) Zhang

**Associate Research Professor:**

- Alexandra Corning

**Assistant Professors:**

- Jill Lany; Laura Miller; Jessica Payne; Michelle Wirh

**Professional Specialists:**

- Anré Venter; Mike Villano

**BACHELOR OF ARTS IN PSYCHOLOGY**

**Table of Contents**

To Table of Contents
Romance Languages and Literatures

Chair: Thomas F. Anderson
Director of Graduate Studies: Carla Jáuregui
Assistant Chair and Director of Undergraduate Studies: Shauna Williams
Notre Dame Professor of Dante and Italian Studies: Zygmunt G. Baranski

Professors:
Thomas F. Anderson; Maureen Boulton; Theodore J. Cachey Jr.; JoAnn DellaNeva (Associate Dean, Arts and Letters); Julia V. Douthwaite; Maria Rosa Olivera-Williams; Dayle Seidenspinner-Nuñez; Alain Toumayan; John P. Welle

Associate Professors:
Sabrina Ferri; Ben Heller; Carlos Jáuregui; Encarnacion Juárez-Almendros; Joshua Lund; Louis MacKenzie; Christian R. Moes; Vittorio Montemaggi; Mariel C. Moreno; Alison Rice; Juan Vitulli

Assistant Professors:
Fr. Gregory Haake; Diana R. Jorza; Vanessa Miseres; Olivier Morel

Professional Specialist: Alessia Blad

Associate Professional Specialists and Concurrent Lecturers:
Tatiana Botero-Jáuregui; María Coloma; Marcio de Bahia; Elena Mangione-Lora; Paul McDowell; Isis Menes; Rachel Parroquin; Andrea Topash Rios; Sandra Teseieira; Patrick Vivirito; Shauna Williams

Assistant Professional Specialists and Concurrent Lecturers:
Azeb Haileselassie; Monica Jancha; Odette Menyarah; Alisha Reaves; Loren Valterza; Kathleen Werner

Program of Studies. The Romance languages derive from Vulgar Latin spoken throughout the Roman Empire. A major course of study is offered in French, Italian, and Spanish. Minors are offered in French, Italian, and Portuguese. The study of foreign languages, literatures, and cultures provides educational opportunities relevant to an increasingly interdependent world. A crucial component of a liberal education, the acquisition of foreign-language skills enhances our powers of communication and serves to introduce us to the enduring cultural achievements of other peoples. Moreover, the study of a foreign language broadens our mental horizons, encourages us to think and act more globally, and stimulates our understanding of the traditions of other nations. Elementary and intermediate courses develop the students’ ability to understand, speak, read, and write a foreign language with facility and confidence.

Upper-division courses present a wealth of literary, historical, and cultural traditions and emphasize the nature and development of national cultures. Many courses focus on the literature and culture of certain historical periods. Others trace the development of literary genres or examine a theme across periods and genres. And still others inculcate the critical and analytical skills necessary for an informed interpretation of foreign language texts. Participation in Notre Dame’s international study programs in Brazil, Chile, France, Italy, Mexico, and Spain (see the International Study Programs section of this Bulletin) is highly recommended although not required to pursue a major in Romance languages and literatures. Majors and supplementary majors in French, Italian, and Spanish must complete 50 percent of their credit hours in the major in residency at Notre Dame and meet the following program requirements. For current information visit the department website: http://romancelanguages.nd.edu/.

PROGRAM IN FRENCH AND FRANCOPHONE STUDIES

The Major in French and Francophone Studies

The requirements for a major in French and Francophone Studies consist of successful completion of 30 credit hours or 10 courses above ROFR 20201. Of these 10 courses, no more than three may be at the 20xxx level (20202 and above), six must be in literature/culture studies, and at least half must be taken in residence at Notre Dame. Required among these 10 courses are ROFR 30310 (The Art of Interpretation), ROFR 30710 and ROFR 30720 (French Literature and Culture I & II), at least two courses at the 40xxx level, and the Senior Seminar (ROFR 53000). ROFR 30310 (The Art of Interpretation) is the recommended prerequisite for the survey courses (ROFR 30710 and ROFR 30720) and must be completed by the end of junior year.

The requirement of ROFR 30720 (French Literature and Culture II) may be waived if students take both ROFR 373AF and ROFR 374AF in Angers—that is, two advanced courses on 19th- and 20th-century French literature. Preapproved courses at the Université Catholique de l’Ouest in Angers (IALH 1.1, 1.2, 4.2, and 6.1) may also fulfill the required courses ROFR 30310, ROFR 30710, and/or ROFR 30720 (see the Angers pages in this Bulletin for a description of those courses and their equivalents at Notre Dame). Any other substitution will require the approval of the Undergraduate Coordinator in French. ROFR 30320 (Advanced Composition: The Art of Writing) is strongly encouraged. AP credit may not be applied to the major.

Language and Culture Track

Requirements for the “Language and Culture” track consist of successful completion of 24 credit hours or eight courses above ROFR 20202. Of these eight courses, no more than two may be at the 20xxx level (20202 or above), one must be ROFR 206xx or above, and six must be in literature/culture studies, and at least half must be taken in residence at Notre Dame. Required among the eight courses are: ROFR 30310 (The Art of Interpretation) or ROFR 30710 and ROFR 30720 (French Literature and Culture II) may be waived if students take both ROFR 373AF and ROFR 374AF in Angers—that is, two advanced courses on 19th- and 20th-century French literature. The survey class of French literature may be waived if students take both ROFR 373AF and ROFR 374AF in Angers—that is, two advanced courses on 19th- and 20th-century French literature. The survey class of French literature may be waived if students take both ROFR 373AF and ROFR 374AF in Angers—that is, two advanced courses on 19th- and 20th-century French literature. Some courses at the Université Catholique de l’Ouest in Angers may also fulfill the required courses, as in the “Language and Literature” track (see above). Any other substitutions will require the approval of the Undergraduate Coordinator in French. AP credit may not be applied to the major.

The Supplementary Major in French and Francophone Studies: Two Tracks

There are two tracks available for students seeking a supplementary major: The “Language and Literature” track and the “Language and Culture” track.

Language and Literature Track

Requirements for the “Language and Literature” track consist of successful completion of 24 credit hours or eight courses above ROFR 20202. Of these eight courses, no more than two may be at the 20xxx level (20202 or above), one must be ROFR 206xx or above, and six must be in literature/culture studies, and at least half must be taken in residence at Notre Dame. Required among these eight courses are ROFR 30310 (The Art of Interpretation), ROFR 30710 and ROFR 30720 (French Literature and Culture I & II), and at least two courses at the 40xxx level or above, one of which may be the Senior Seminar (ROFR 53000). ROFR 30310 (The Art of Interpretation) is the recommended prerequisite for the survey courses (ROFR 30710 and ROFR 30720) and must be completed by the end of junior year.

The requirement of ROFR 30720 (French Literature and Culture II) may be waived if students take both ROFR 373AF and ROFR 374AF in Angers—that is, two advanced courses on 19th- and 20th-century French literature. Preapproved courses at the Université Catholique de l’Ouest in Angers (IALH 1.1, 1.2, 4.2, and 6.1) may also fulfill the required courses ROFR 30310, ROFR 30710, and/or ROFR 30720 (see the Angers pages in this Bulletin for a description of those courses and their equivalents at Notre Dame). Any other substitution will require the approval of the Undergraduate Coordinator in French. ROFR 30320 (Advanced Composition: The Art of Writing) is strongly encouraged. AP credit may not be applied to the major.

Language and Culture Track

Requirements for the “Language and Culture” track consist of successful completion of 24 credit hours or eight courses above ROFR 20202. Of these eight courses, no more than two may be at the 20xxx level (20202 or above), one must be ROFR 206xx or above, and six must be in literature/culture studies, and at least half must be taken in residence at Notre Dame. Required among the eight courses are: ROFR 30310 (The Art of Interpretation) or ROFR 30710 and ROFR 30720 (French Literature and Culture II) may be waived if students take both ROFR 373AF and ROFR 374AF in Angers—that is, two advanced courses on 19th- and 20th-century French literature. The survey class of French literature may be waived if students take both ROFR 373AF and ROFR 374AF in Angers—that is, two advanced courses on 19th- and 20th-century French literature. The survey class of French literature may be waived if students take both ROFR 373AF and ROFR 374AF in Angers—that is, two advanced courses on 19th- and 20th-century French literature. Some courses at the Université Catholique de l’Ouest in Angers may also fulfill the required courses, as in the “Language and Literature” track (see above). Any other substitutions will require the approval of the Undergraduate Coordinator in French. AP credit may not be applied to the major.
The Honors Track in French

The honors track major consists of 33 credits or 11 courses. In addition to the general requirements for the major, honors track students must complete an 11th course at the graduate level with a grade of A- or higher, in which they will write a substantive research paper, normally in French, which constitutes the honors thesis. By invitation only, highly motivated students may consider the option of taking a semester-long directed reading tutorial as the 11th course, completing an honors thesis under faculty direction.

French majors are admitted to the honors track by invitation, although qualified students may petition for admission in the second semester of their junior year. To be eligible for the honors track, students must be first majors with a minimum GPA of 3.8 in French and have completed at least seven courses toward the major by the end of their junior year. They must also receive the written support of a professor in one of the required language, culture, or literature courses (ROFR 30310, ROFR 30320, ROFR 30710, ROFR 30720, ROFR 306XX or ROFR 37’500). For full consideration, students should contact the Assistant Chair of the Department of Romance Languages and Literatures no later than March 15 of their junior year; applications from eligible seniors will be accepted through October 1.

In order to graduate with honors, students admitted to the honors track should maintain a minimum GPA of 3.7 in French.

Combined B.A./M.A. Program in French

The Department of Romance Languages and Literatures offers its majors in French the opportunity to participate in its graduate program through a combination B.A./M.A. degree in French. This program requires students to take 30 credit hours during the normal four-year undergraduate period, followed by a total of 30 credit hours of graduate courses taken during the fourth and fifth years of residence. Six credit hours can be counted toward both the undergraduate and graduate degrees.

During their senior year, participants in this program take two graduate courses, take the qualifying exam given to all first-year graduate students, and apply to the Graduate School for admission during the Spring semester. B.A./M.A. Students are eligible for a teaching fellowship during their fifth year that includes a semester. B.A./M.A. Students are eligible for a teaching fellowship during their fifth year that includes a semester. B.A./M.A. Students are eligible for a teaching fellowship during their fifth year that includes a semester.

The Major in Italian: Literature and Culture Concentration

The major in Italian with a concentration in literature and culture requires 30 credits or 10 courses at the 20000 level or above, including no more than two 20000-level courses (ROIT 20215 counts as two courses for the major), ROIT 30711 (Medieval-Renaissance Italian Literature and Culture), ROIT 30721 (Modern Italian Literature and Culture), ROIT 53000 (Italian Seminar), and a minimum of five elective ROIT courses in Italian literature or culture at the 30000 or 40000 level or above. ROIT 30310 (Passage to Italy) is recommended for all majors. A maximum of two of these elective ROIT courses may be conducted in English or with texts in translation, or may be substituted by courses on Italian subjects originating in other disciplines or departments (for example, architecture, art history, music, or history). Equivalent Italian language, literature, or culture courses from foreign study programs or other universities may be substituted for any of the courses by permission. Fifty percent of the credits for the major must be taken in residence at Notre Dame. AP credit may not be applied toward the major.

The Supplementary Major in Italian: Literature and Culture Concentration

Supplementary majors in Italian with a concentration in literature and culture are expected to demonstrate competency in the language and to complete 24 credits or eight courses at the 20000 level or above, including no more than two 20000-level courses (ROIT 20215 counts as two courses for the supplementary major), ROIT 30711 (Medieval-Renaissance Italian Literature and Culture), ROIT 30721 (Modern Italian Literature and Culture), ROIT 53000 (Italian Seminar), and a minimum of three elective ROIT courses in Italian literature or culture at the 30000 or 40000 level or above. ROIT 30310 (Passage to Italy) is recommended for all supplementary majors. A maximum of two of these elective ROIT courses may be conducted in English or with texts in translation, or may be substituted by courses on Italian subjects originating in other disciplines or departments (for example, architecture, art history, music, or history). Equivalent Italian language, literature, or culture courses from foreign study programs or other universities may be substituted for any of the courses by permission. Fifty percent of the credits for the major must be taken in residence at Notre Dame. AP credit may not be applied toward the major.

The Honors Track Major in Italian: Literature and Culture Concentration

The honors track major in Italian with a concentration in literature and culture consists of 33 credits or 11 courses, including all the requirements for the major, a GPA in the major of at least 3.7, plus a substantial final essay, to be written in Italian for a graduate course or for ROIT 58000, Honors Thesis Direction, which will constitute the 11th course. No students will be accepted to the honors track after October 1 of their senior year.

(2) Italian Studies Concentration

The Major in Italian: Italian Studies Concentration

The major in Italian with a concentration in Italian Studies requires 30 credits or 10 courses at the 20000 level or above, to be chosen as follows: Five courses must be ROIT courses in Italian language, literature, and culture and taught in Italian, including at least one of ROIT 30711 (Medieval-Renaissance Italian Literature and Culture) or ROIT 30721 (Modern Italian Literature and Culture), and one course at the 40000 level or above; ROIT 41590 (Italian Theatre Workshop) does not count toward this major. No more than two of these five courses may be at the 20000 level (ROIT 20215 counts as two courses for the major). The other four courses must be on Italian subjects or strictly relevant to Italian culture, and together they must not be drawn from more than three disciplines or departments, such as history, art history, classics, FTT, music, or political science (the courses may of course be listed under ROIT). Four of these five courses must be at the 30000 level or above, and include at least one course at the 40000 level or above; no more than one of the five may be at the 20000 level. In order to create a coherent program, the selection of courses must be approved by the student’s ROIT adviser (or committee, if appropriate). Equivalent courses from foreign study programs or other universities may be substituted by permission. Fifty percent of the credits for the major must be taken in residence at Notre Dame. AP credit may not be applied toward the major.

The Supplementary Major in Italian: Italian Studies Concentration

The supplementary major in Italian with a concentration in Italian Studies requires 24 credits or eight courses at the 20000 level or above, to be chosen as follows: Four courses must be ROIT courses in Italian language, literature, and culture and taught in Italian, including at least one course at the 40000 level or above; ROIT 41590, Italian Theatre Workshop, does not count toward this supplementary major. The other four courses must be on Italian subjects or strictly relevant to Italian culture, and must not be drawn from more than three disciplines or departments, such as history, art history, classics, FTT, music, or political science (the courses may of course be listed under ROIT). Three of these four courses must be at the 30000 level or above; no more than one may be at the 20000 level. In order to create a coherent program, the selection of courses must be approved by the student’s ROIT adviser (or committee, if appropriate). Equivalent courses from study abroad programs or other universities may be substituted by permission. Fifty percent of the credits for the major must be taken.
The Honors Track Major in Italian: Italian Studies Concentration

The honors track major with a concentration in Italian Studies consists of 33 credits or 11 courses, including all the requirements for the major in Italian with a concentration in Italian Studies, a GPA in the major of at least 3.7, plus a substantial final essay, to be written for a graduate course or for ROIT 58000, Honors Thesis Direction, which will constitute the 11th course. The course or topic will be selected in consultation with the student’s advisory committee for the major. No students will be accepted to the honors track after October 1 of their senior year.

(3) The Minor in Italian

The minor in Italian comprises 15 credits or five courses at the 20000 level or above, including at least three courses at the 30000 or 40000 level. Three of the five courses must be ROIT courses in Italian language, literature, and culture, and taught in Italian; the fourth and fifth courses may be on Italian literature and culture taught in English or with texts in translation, or may be courses on Italian subjects originating in other disciplines or departments (for example, LLRO, art history, architecture, or history). Courses from study abroad programs or other universities may be substituted by permission, but at least two courses for the Italian minor must be taken in residence at Notre Dame. AP credit may not be applied toward the major.

Program in Iberian and Latin American Studies

All majors and supplementary majors in Spanish are required to take a core sequence consisting of ROSP 30310 (Introduction to Hispanic Literature and Culture) and one course each in three of the four following areas of Spanish and Spanish American Literature: Early Peninsular, Modern Peninsular, Early Spanish American and Modern Spanish American. AP credit may not be applied toward the major.

The Major in Spanish

The major in Spanish requires 30 credits or 10 courses 20202 and above, including the required core sequence described above, two senior-level courses, and the Senior Seminar. Equivalent literature and culture courses from international study abroad programs or other universities may be substituted with departmental approval. Fifty percent of the credits for the major must be taken in residence at Notre Dame. AP credit may not be applied toward the major.

Students are allowed to take one related course in English outside of the Department of Romance Language and Literatures (for example, Colonial Latin American History, taken in the History Department) and one course in Spanish outside of the discipline of literature and culture (for example, a theology course taken in Spanish in a study abroad program), with the approval of their advisor and the Undergraduate Coordinator, and with notification of the Assistant Chair.

The Supplementary Major in Spanish

Supplementary majors in Spanish are required to complete 24 hours or eight courses 20202 and above, including the required core sequence described above and one senior-level course. Equivalent literature and culture courses from international study abroad programs or other universities may be substituted with departmental approval. Fifty percent of the credits for the supplementary major must be taken in residence at Notre Dame. AP credit may not be applied toward the major.

Students are allowed to take one related course in English outside of the Department of Romance Language and Literatures (for example, Colonial Latin American History, taken in the History Department) and one course in Spanish outside of the discipline of literature and culture (for example, a theology course taken in Spanish in a study abroad program), with the approval of their advisor and the Undergraduate Coordinator, and with notification of the Assistant Chair.

The Honors Track in Spanish

The honors track major consists of 33 credits or 11 courses. In addition to the general requirements for the major, honors track students must complete an 11th course at the graduate level and must receive a grade of A- or higher to graduate with honors, in which they will write a substantive research paper. By invitation only, highly motivated students may consider the option of taking a semester-long directed reading tutorial as the 11th course, completing an honors thesis under faculty direction.

Spanish majors are admitted to the honors track by invitation, although qualified students may petition for admission in the second semester of their junior year. To be eligible for the honors track, students must be first majors with a minimum GPA of 3.7 and at least seven courses toward the major. For full consideration, students should contact the Undergraduate Coordinator no later than March 15 of their junior year; applications from eligible seniors will be accepted through October 1.

The Combined B.A./M.A. Program in Spanish

The Department of Romance Languages and Literatures offers its majors in Spanish the opportunity to participate in its graduate program through a combination B.A./M.A. degree in Spanish. This accelerated program requires students to take 30 credit hours 20202 and above during the normal four-year undergraduate period, followed by a total of 30 credit hours of graduate courses taken during the fourth and fifth years of residence. Six credit hours can be counted toward both the undergraduate and graduate degrees. During their senior year, participants in this program take two graduate courses, applying to the Graduate School for admission during the spring semester. During their fifth year, B.A./M.A. students are eligible for a teaching fellowship, which includes a tuition waiver and a generous teaching stipend. Students should have a strong academic record and should have made substantial progress toward their Spanish major by the second semester of their junior year. It is imperative that students interested in this program contact the director of Graduate Studies and/or the graduate coordinator in Spanish at the beginning of their junior year.

Minor in Portuguese

The minor in Portuguese and Brazilian Studies consists of 15 credits, five courses, 3 credits each. Prerequisites are ROPO 10101 and 10102, or 10103 and 10104, or 10105 and 10106. Requirements include five courses in Portuguese language and Luso-Brazilian literature beyond the prerequisites, ROPO 20201 and 20202, and three additional courses at the 30000/40000 level. Three of the five courses must be in Portuguese language and/or Luso-Brazilian literature, film, and culture taught in Portuguese; the fourth and fifth courses may be on Luso-Brazilian literature, film, and culture taught in English. The fourth and fifth courses may also be on a Portuguese or Brazilian subject in another discipline (for example, anthropology, history, Latin American Studies, FTT, political science, Romance languages and literatures, theology, etc.). Courses from study abroad programs or other universities may be substituted by permission, but at least three courses for the Portuguese minor must be taken in residence at Notre Dame. AP credit may not be applied toward the minor.

Interdisciplinary Minors

Spanish majors are encouraged to pursue allied courses offered through area studies and other interdisciplinary minors. Spanish courses offer a particularly appropriate complement to the Latin American Studies, Latino Studies, and European Studies programs. See the section on Interdisciplinary Minors in this Bulletin for more details. Majors may also apply one senior-level ROPO course in Luso-Brazilian culture and literature toward their elective credits.

Major in Romance Languages and Literatures

The undergraduate major in Romance Languages and Literatures is designed for qualified students who wish to major in two programs (French, Italian, or Spanish). Cross-cultural in focus, the major recognizes the importance of studying the correspondences and differences among various Romance literatures and cultures and of reexamining traditional disciplinary boundaries. The requirements for a major in Romance languages and literatures include competency in two languages and successful completion of 36 credit hours or 12 courses, which must be distributed equally between the two respective language programs as follows:
to take one of these tests before enrolling in their
standardized testing, such as the AP or Achievement
For French and Spanish, there is an online
Placement in Language Courses
seniors will be accepted through October 1st.
15 of their junior year. Applications for eligible
languages and literatures major no later than March
semester of their junior year. For full consideration,
students may petition for admission in the second
honors track by invitation, although qualified
languages and literatures majors are admitted to
studies, FTT, philosophy, sociology, etc.). Romance
or a similar course in a related field (English, gender
readings; this course may be a 4000-level course
cultural or literary theoretical questions and
encouraged to take at least one course that addresses
materials by March 15th of the junior year to the
obtain approval of the topic, and submit application
area of specialization. Students will identify the
honors thesis option must be carried out under
honors track may be invited to complete an
motivated students who have already been accepted
to the honors track may be invited to complete an
honors thesis in lieu of taking the graduate course.
The honors thesis option must be carried out under
the direction of a department faculty member, in
the area of specialization. Students will identify the
professor with whom he or she intends to work,
observe approval of the topic, and submit application
materials by March 15th of the junior year to the
Director of Undergraduate Studies. Students are also
couraged to take at least one course that addresses
literary or theoretical questions and
readings; this course may be a 4000-level course
offered in the Department of Romance Languages,
or a similar course in a related field (English, gender
studies, FTT, philosophy, sociology, etc.). Romance
languages and literatures majors are admitted to
the honors track by invitation, although qualified
students may petition for admission in the second
semester of their junior year. For full consideration,
students should contact the advisor for the romance
languages and literatures major no later than March
15 of their junior year. Applications for eligible
seniors will be accepted through October 1st.

Placement in Language Courses
For French and Spanish, there is an online
placement exam for students who have not already
demonstrated language proficiency through national
standardized testing, such as the AP or Achievement
tests. Students with previous experience are required
to take one of these tests before enrolling in their
first course in these languages. For Italian or
Portuguese placement, please contact the department.
The normal prerequisite for a 30xxx-level course is at least one 20202 or above level course or
permission of the instructor. The normal prerequisite
for a 40xxx-level course is at least one 30xxx-level
course or permission of the instructor.

Policy Regarding Romance Language Placement
Examination
The placement examination is designed to place each
student at an appropriate level within a language
sequence. Obtain placement examination information
from the Department of Romance Languages
and Literatures.

MAJOR IN INTERNATIONAL ECONOMICS &
ROMANCE LANGUAGES
The undergraduate major in International
Economics is a collaborative effort between the
Department of Economics and the Department of
Romance Languages and Literatures. In pursuing
this major, students take a minimum of eight
economics courses and at least six intermediate and
advanced courses in French, Italian or Spanish.
Students are also required to enroll in a one-credit
course “Exploring International Economics”
designed to foster the integration of the study of
culture with the study of economics. Students must
also complete a senior research project or equivalent
designed to integrate their economic and language
and culture study. The senior research project is
intended to provide an experience that integrates the
analytical aspects of economics with the linguistic
and cultural aspects of a romance language.

Students must satisfy a mathematics requirement of
Calculus I and II and successfully complete ECON
10010/20010; ECON 10020/20020; ECON
30010; ECON 30020; ECON 30330; and one of:
ECON 30331; and either ECON 40700 and ECON 40800,
or ECON 40710 and ECON 40720 or other
international economics courses as approved by the
Director of Undergraduate Studies. In addition, stu-
dents must complete at least one fourth semester or
above language and culture course (ROXX 20202 or
above); “Exploring International Economics” (briefly
described above); one introduction to literature and
culture course (ROXX 30310); two 30000 level
courses including literature survey courses (ROXX
30710, 30720, and/or ROSP 30810, ROSP 30820)
or equivalent, and/or culture courses ROFR 306XX;
at least two courses at the 40000 level (one may be
taught in English); and the Senior Research Project
(ECON 48100).

Through the major, the collaborating departments
seek to blend two programs of study to ensure that
students will achieve advanced linguistic and cultural
competency in a foreign language as well as excellent
preparation in Economics. The balance of economics
with languages and culture courses should attract
motivated students and inspire them to undertake
a challenging course of study that will prepare
them for postgraduate studies and or professional
career opportunities in the international arena.

International Economics—Romance Languages
majors will learn how aesthetic and cultural catego-
ries and value judgments are shaped by economic
trends and political conditions and how political
conditions and economic trends are influenced by
aesthetic and cultural trends.

COURSE DESCRIPTIONS
All of the courses associated with these academic
programs can be found online at registrar.nd.edu/
students/class_search.php. The scheduled classes
for a given semester may be found by clicking on
“Class Search” and selecting one or more of the
following subjects:
• Romance Languages & Literature
• French
• Italian
• Portuguese
• Spanish
Course descriptions can be found by clicking on
the subject code and course number in the search
results.
Sociology

MAJOR

The requirements for the sociology major are as follows.

(a) Students must take a minimum of 31 credit hours (usually 10 courses and the proseminar which is one credit) offered by the department. Students are urged to start their major as early as possible but may declare a major or change majors at any time as long as they are able to fulfill the requirements.

(b) Central to the requirements for the major are the following four courses:

SOC 30900. Foundations of Sociological Thought
SOC 30902. Methods of Sociological Research
SOC 30903. Statistics for Sociological Research
SOC 33090. Proseminar (1 credit)

The above required courses should be taken as soon as possible, especially before taking any 4xxx-level courses.

(c) Each major must take a minimum of three 4xxx-level lecture, seminar or research courses. Internships (SOC 45000) and Directed Readings in Sociology (SOC 46000) do not fulfill this requirement.

(d) Each major must also acquire at least 12 credits of sociology elective courses, usually consisting of four 3-credit courses. These courses may be at any level, 10xxx–4xxxx.

MINOR

The Sociology Department also offers a minor, requiring 15 credit hours. Acquiring a minor in sociology is a great way to prepare for a variety of careers because the courses help students to develop research and problem-solving skills, as well as a knowledge base that facilitates understanding of how social interaction is shaped by different social contexts in which individuals are embedded. Sociology has special applicability to those preparing for careers in business, law, medicine or an allied health field, education, counseling, ministry, social work, public policy, or politics. Students may add the minor at any time during their undergraduate studies. (See Sociology's DUS for more information.)

The requirements of the minor are as follows:

(a) One course in sociological theory, usually SOC 30900. Foundations of Sociological Thought (3 credits)

(b) SOC 30902, Methods of Sociological Research (3 credits)

(c) Two sociology electives at any level, only one of which may be at the 10000 level (6 credits)

(d) At least one sociology elective at the 40000 level (3 credits)

The department prides itself on its program of close personal advising, in which each major can build a program of courses with the help of a faculty advisor and undergraduate director. Advisors willingly give much time to aid students in planning their course schedules and careers. Each major is assigned to a faculty advisor whose own academic interests dovetail with those of the student. Each student, working closely with a faculty advisor, can map out a personalized program of study that will satisfy the department's requirements for the major and simultaneously accommodate the student's academic interests and career aspirations.

The sociology major combines well with many majors. More recent graduates have also majored in business; pre-medical studies; psychology; political science; economics; film, television and theatre; or a foreign language. Students have also easily combined their sociology major with a minor in education, schooling, and society; international peace studies; Hesburgh Program in Public Policy; Latino studies; or business economics. It is important to note that students in another college who wish to major in sociology in addition to their first major do not have to meet all the other requirements of the College of Arts and Letters but rather just those of their first major's college.

The department has an active Epsilon Chapter of Alpha Kappa Delta, the international sociology honor society. Students interested in the qualifications for nomination are encouraged to contact the director of undergraduate studies (Room 823 Flanner Hall) at any time.

Sociology Undergraduate Honors Track. The Sociology Department offers an honors track to students who excel in their sociological studies. Students must have taken at least one introductory course in sociology and be recommended by a faculty member or initiate the process by contacting the director of undergraduate studies. In addition to the usual requirements of the sociology major, students in the honors track are required to take at least one graduate-level course in sociology once they have completed the required 30xxx-level courses. When appropriate, a student may be given permission to take the graduate-level statistics sequence rather than beginning with the undergraduate statistics course (SOC 30903). In their senior year, students in the sociology honors track are required to enroll in the Senior Thesis Capstone Project (SOC 48009) for at least one semester and, under faculty mentors, carry out independent research projects. Students complete a senior thesis based on this research and submit their manuscripts to a journal for publication. Participants are also required to submit an abstract of their paper to at least one regional sociology conference during their junior or senior year. Continuation in the honors track is subject to periodic review.
Writing in Sociology. The College of Arts and Letters is proud of the level of writing its undergraduates achieve. One way in which the college supports students’ writing development is by requiring each department to offer at least one writing-intensive course. SOC 30900, Foundations of Sociological Theory, is the Sociology Department’s writing-intensive course. There, students reflect on the quality of their own and others’ writing and learn to articulate a sociological perspective in writing. Instructors in this course may spend more time doing textual analyses, going over students’ writing, holding in-class writing workshops, and giving opportunities to do re-writes than in other courses. The department’s 43xxx-level courses also demand high-level writing within a sociological perspective. In addition, students may opt to develop their research and writing skills by undertaking a senior thesis.

Course Listings by Area of Research Focus. The following is a list of courses offered by the Sociology Department, organized by research focus. Students are encouraged (but not required) to choose at least one area of focus in the major in order to deepen their knowledge of that area. Students are also encouraged to pursue research opportunities within their area of interest.

GENERAL INTRODUCTIONS TO SOCIOLOGY
10000/20000. Understanding Sociology
10003/20003. Introduction to Social Problems
10722/20722. Introduction to Social Psychology
23011. Selflessness and Selfishness

REQUIRED COURSES FOR SOCIOLOGY MAJORS
30900. Foundations of Sociological Theory
30902. Methods of Sociological Research
30903. Statistics for Sociological Research
33090. Sociology Proseminar

INDIVIDUAL WORK WITH FACULTY/SUPERVISOR
41800. Senior Thesis Workshop
45000. Sociology Internship
46000. Directed Readings in Sociology
48000. Directed Research in Sociology
48009. Senior Thesis Capstone Project

CLASS, GENDER, RACE, ETHNICITY
20810. Gender Roles and Violence in Society
20838. Social Inequality
20870. Inner City America: Decoding “The Wire”
30806. Race and Ethnicity: Constructing Identity and Difference
30838. Poverty, Inequality, and Social Stratification
30846. Today’s Gender Roles
34389. Unequal America

CRIMINOLOGY, DEVIANCE, AND SOCIAL CONTROL
20732. Introduction to Criminology
33750. Sociology of Violence
43704. Law, Society and Criminal Justice in the U.S.
43730. Crime and Deviance in Ideological Perspective
43732. Controversies and Crises in Modern Criminology

CULTURE/MEDIA
20100. Introduction to Cultural Sociology
23111. Living in a Material World
23195. Media, Technology, and the Good Life
30109. Sociology of Culture
33119. Consumer Culture and the Cultures of Consumption
33199. Social Networks
40001. Time and Society
43101. Telling About Society: Media, Representation, and the Sociology of Knowledge
43110. Sociology of Media, Technology, and Society
43113. Cultural Sociology
43162. Latino Art in American Society
43170. Materialism & Meaning in Modern Life
43165. Art in Everyday Life
43171. Materializations of America
43197. Culture, Morality and Society

DEMOGRAPHY/MEDICAL
20410. Health, Medicine, and Society
43402. Population Dynamics
43471. Social Aspects of Mental Health

ECONOMICS, POLITICAL, DEVELOPMENT
20501. Globalization and Social Movements
20502. Today’s Organizations
20533. Responding to World Crisis
20541. Sociology of War and Terror
20560. Development and Human Well-being
30505. Aid and Violence
30514. Social Movements
30518. Sociology of Money
30581. Racism and Activism: From Civil Rights to Tea Parties
33501. Political Protest in a Globalizing World
40505. Globalization and Its Discontents: Ethical Perspectives on Economy, Conflict, and Human Values
40604. When Tolerance is Not Enough
40606. Religion and Democracy in Comparative Perspective: Islam, Judaism, Christianity
40607. Religion, Civil Disobedience and Non-violent Resistance
43510. Governance and Africa
43513. Sociology of Development
43524. Employment in a Changing Economy
43527. Social Network Analysis
43553. Building Democratic Institutions
43558. Comparing European Societies
43563. Nationalism and Globalization
43578. Chile in Comparative Perspective
43579. Social Organization of Secrecy and Deception
43590. Sociology of Economic Life

EDUCATION
20228. Social Inequality and American Education
20260. Religion and Schooling in American Society
30235. Sociology of Education
37290. Special Studies in Education Policy
43228. Controversies in Education
43240. Research on School Effects

FAMILY
20342. Marriage and Family
43377. Family, Gender, and Employment

LATINO STUDIES
20479. Introduction to Latinos in American Society
23470. Making Latinos: Race, Identity, and Immigration in the U.S.
30048. Latinos and the City
33458. Mexico-U.S. Border Immersion Seminar
43016. Visual Sociology: Exploring Society Photographically
43162. Latino Art in American Society
43404. International Migration: Mexico and the United States
43479. International Migration and Human Rights

RELIGION
20610. Sociology of Religion
20683. Religion, Gender, and Family
30408. Religion in International & Global Relations
30600. Peace vs. Justice: What is Just Peace?
30602. Jerusalem: Peace or Apocalypse?
30605. Religion, Nationalism and Peace
30671. Catholicism in Contemporary America
30672. Religion and Social Life
30675. Religion, Modernity, Secularization, Religious Persistence
34600. Society and Spirit: Religion in Classical Social Thought
34652. God, Country and Community: Religion and Public Life in America
43662. Religion and American Society
43691. Religion and Social Activism

SOCIAL PSYCHOLOGY
10722. Introduction to Social Psychology
20722. Introduction to Social Psychology
33001. Society, Self, and Catholic Social Tradition
43713. Socialization and the Life Course
43719. Self, Society, and the Environment
43774. Society and Identity

THEORY/METHODOLOGY
23901. Power & Identities
23951. Foundations of International Research Design
30952. International Research Design
35900. Sociology Research Apprenticeship
43901. Power and Identity in Modern Society
43910. Contemporary Social Theory
43959. Sociology of the Life Course
43991. Sociology Research Practicum

SUMMER ONLY
30019. Sociology of Sport
COURSE DESCRIPTIONS

All of the courses associated with this academic program can be found online at registrar.nd.edu/students/class_search.php. The scheduled classes for a given semester may be found by clicking on “Class Search” and selecting the subject Sociology. Course descriptions can be found by clicking on the subject code and course number in the search results.

Graduate Courses. Senior honors track majors may take any graduate course with the permission of the instructor and the Director of Undergraduate Studies.

Theology

Chair:
J. Matthew Ashley

Catherine F. Huisking Professor of Theology:
Rev. Brian E. Daley, S.J.

John A. O’Brien Professor of Theology:
Gerald Knoppers

Patrick O’Brien Professor of Theology:
Robin Jensen

Catherine F. Huisking Professor of Theology:
Cyril J. O’Regan

Hesburgh Professor of Catholic Theology:
Gary A. Anderson

John A. O’Brien Professor of Theology:
Joseph Blenkinsopp (emeritus)

John A. O’Brien Professor of Theology:
Lawrence S. Cunningham (emeritus)

John A. O’Brien Professor of Theology:
Jean Porter

John A. O’Brien Professor of Theology:
Eugene Ulrich (emeritus)

John A. O’Brien Professor of Theology:
James C. VanderKam

John Cardinal O’Hara Professor of Theology:
Gustavo Gutierrez, O.P.

Keough-Hesburgh Professor of Music History and Liturgy:
Margot Fassler

Notre Dame Professor of Pastoral and Hispanic Theology:
Rev. Virgilio P. Elizondo

Theodore M. Hesburgh, C.S.C., Professor of Philosophy and Theology:
Rev. David B. Burrell, C.S.C. (emeritus)

Walter Professor of Theology:
David E. Aune (emeritus)

Walter Professor of Theology:
Gerald P. McKenny

William K. Warren Professor of Catholic Theology:
Rev. John P. Meier

William K. Warren Professor of Catholic Theology:
Rev. Thomas F. O’Meara, O.F. (emeritus)

Professors:
Khaled Anatolios; Ann Astell; John C. Cavadini; Celia Deane-Drummond; David Fagerberg; John Fitzgerald; Mary Catherine Hilkert, O.P.; Rev. Maxwell E. Johnson; Robert A. Krieg; Rev. Edward A. Malloy, C.S.C. (emeritus); Timothy Matovina; Candida Moss; Francesca A. Murphy; Rev. Hugh R. Page; Gabriel Said Reynolds; Randall Zachman

Research Professor:
Robert Gimello

Associate Professors:
J. Matthew Ashley; John R. Betz; Peter Casarella; David A. Clairmont; Mary Rose D’Angelo; Rev. Michael S. Driscoll; Rev. Daniel Groody, C.S.C.; Emmanuel Katongole; Rev. Paul V. Kollman, C.S.C.; Blake Leyette; David Lincicum; Bradley J. Malkovsky; Michael (Tevi) Novick; Rev. Paulinus Odozor, C.S.Sp.; Maura Ryan; Joseph Wawrykow; Todd Whitmore

Assistant Professors:
Neil Arner; Yuriy Avvakumov; Kimberly Belcher; Mun'im Sirry; Alexis Torrance; Abraham (Avi) Winzer

Professional Specialists:
Michael Heintz, C.S.C.; Janice M. Poorman

Associate Professional Specialists:
Rev. Michael E. Connors, C.S.C.; Margaret Pfeil

Assistant Professional Specialists:
Catherine Cavadini; Stacey Noem; Todd Walatka

THE THEOLOGY PROGRAM UNIVERSITY OF NOTRE DAME

At the University of Notre Dame, the study of theology is carried out in the spirit of the classic formulation of theology as “Faith seeking understanding.” The Theology Department dedicates itself to critical reflection on the historic faith of Catholic Christianity in service to our students, to the larger church, to the world of the academy, and to the general public.

Why major in theology?

When the former British prime minister Tony Blair was asked what effect his embrace of Christian faith at the University of Oxford had on him, he commented simply, “I began to make sense of the world.” A major in Theology at Notre Dame will challenge you to do just that.

Our majors encounter head-on the great questions of life: Where is the God of justice? What is truth? Who do you say I am? Why did God become a human? What must I do to inherit eternal life?

Yet majors in theology are challenged to do still more. They are challenged to think of their life journey not only in terms of how they might best be served by careers, but also how they might best serve others. Whether they go on to careers in law, medicine, business, journalism, education, ministry, government, or any other field, theology majors do so with an experience of intellectual and spiritual illumination that is absolutely unique.

Our majors also benefit from working closely with faculty in one of the premiere Catholic Departments of Theology in the world. Theology majors at Notre Dame have majored in a field for which Notre Dame is renowned and will study with the best of the best. In addition, our majors may have the opportunity to visit the Holy Land at the Tantur Ecumenical Institute of Theology in Jerusalem, where the department regularly hosts courses and pilgrimages during fall and spring break.

When Father Edward Sorin, C.S.C., envisioned the school that would be built next to two remote lakes in Indiana, he commented, “This college will be one of the most powerful means of doing good in the country.” This faith in the great potential of the school that would be called Notre Dame emerged from his belief in a Catholic education. Theology majors at Notre Dame, having experienced the
fullness of a Catholic education, are indeed powerful forces for good in this country; and in the world.

What are the requirements for the theology major?

Beyond the six theology credits required of every Notre Dame student, primary majors take 28 hours; supplementary majors take 19 hours. Each of these majors combines formally required courses and electives. The two University requirements (6 credits) are prerequisites for upper-level courses. All courses in the theology major, primary or supplementary, must be 3-credit courses and graded (with the exception of the proseminar).

SUMMARY OF THE PRIMARY MAJOR:

First University requirement (Foundations of Theology): THEO 10001 (first-year) or 10002 (sophomore, junior, senior) or 13183 (University seminar) or 13002 (honors).

Second University requirement (a development of theology) course: a THEO course listed between 20101 and 29999.

THEO 40201 and 40202—Christian Traditions I and II

THEO 40101 and 40108—Old Testament and New Testament

Electives (15 hours at the upper level; up to 6 may be courses in a classical language)

THEO 43001—Proseminar (1 credit)

Including the University requirements, the primary major thus consists of 34 credit hours.

SUMMARY OF THE SUPPLEMENTARY MAJOR:

First University requirement (Foundations of Theology): THEO 10001 (first-year) or 10002 (sophomore, junior, senior) or 13183 (University seminar) or 13002 (honors).

Second University requirement (a development of theology) course: a THEO course listed between 20101 and 29999.

THEO 40201 and 40202—Christian Traditions I and II

THEO 40101 or 40108—Old Testament or New Testament

Electives (9 hours at the upper level; up to 6 may be courses in a classical language)

THEO 43001—Proseminar (1 credit)

Including the University requirements, the supplementary major thus consists of 25 credit hours.

WHAT OTHER PROGRAMS ARE OFFERED?

Theology Honors Thesis

The Theology Department offers a special program for particularly gifted undergraduate majors who seek a deeper, more sustained experience in the major through the completion of a thesis project. Each spring semester, the junior class of theology majors will be invited to apply; those selected will be assigned a thesis director from among the faculty of the department. A minimum grade point average of 3.67 within the major is normally expected. Seniors in the Honors Program will enroll in a one-credit Honors Colloquium as well as a one-credit honors research course in the fall semester, and a three-credit Honors Thesis Writing course in the spring semester, culminating in the submission of a 40–55-page thesis. The Honors Program will normally consist of 36 hours, as compared to 31 hours in the regular primary major. To receive the honors designation on their transcript, students must earn an A– or higher grade on their thesis. A full description of the Theology Honors Program is available on the departmental website (see below for address).

The Minor in Theology

The minor is recognized by the University on the student’s transcript. To fulfill requirements for a minor, a student must take 12 credit hours beyond the required 6 hours (for a total of 18 hours). The additional 12 hours must be composed of 3-credit graded courses, which can be taken at the 20xxx or 40xxx level. The minor in theology is accepted by many parochial schools as adequate preparation for secondary school teaching.

Contact information

You may reach the director of undergraduate studies in theology, through the departmental office:

(574) 631-7811
astell@nd.edu

theology.nd.edu/undergraduate-programs

Department of Theology
130 Malloy Hall
University of Notre Dame
Notre Dame, IN 46556-5601

WRITING-INTENSIVE REQUIREMENT

THEO 40101 Old Testament and 40108 New Testament have been designated writing-intensive courses by the Department of Theology and fulfill the College of Arts and Letters’ writing-intensive requirement. Students will be expected to work closely with the professor throughout the semester on a significant written project, although specific writing assignments will be designed by the faculty member teaching the course.

PHILOSOPHY AND THEOLOGY JOINT MAJOR

Director:
Director of Undergraduate Studies, Theology

Faculty:
Additional faculty for the joint major are drawn from the Departments of Philosophy and Theology.

Program of Studies.

The joint major is intended for undergraduates who are intrigued by philosophical and theological ideas and who have an equal commitment to both disciplines. It seeks to equip such students to handle theology and philosophy adeptly. The major is structured, providing undergraduates with a suitable introduction to the study of both disciplines, but also flexible, granting students considerable scope for the pursuit of their own interests.

The joint major offers the opportunity for an informed investigation of religious and philosophical ideas and should appeal especially to those who intend to pursue graduate work in philosophy or theology.

The joint major incorporates the University requirements in the two departments and most of the formal requirements of the first majors in theology and philosophy. Students in the joint major will take the two-semester sequence in Christian Traditions and an upper-level course in Scripture. The joint major, however, does not require the one-credit proseminar in theology.

Other formal requirements are peculiar to the joint major. Students will study a classical language for two semesters. (For practical as well as pedagogical reasons, this will normally be Greek or Latin.) Majors will also be expected to take on one occasion the joint seminar (offered each spring). Each seminar, led by a theologian and a philosopher, will examine an issue in which the differing approaches of philosophy and theology may prove fruitful. The topic and instructors will change from year to year. Finally, each major will submit a senior thesis prepared under the direction of two advisors, drawn from each department. At the option of the directors, this thesis may be presented and discussed in an informal colloquium consisting of the other students in the joint major.

The remaining courses in the joint major will be at the discretion of the student. Normally taken at the 40xxx level, there should be an equal distribution in the electives between theology and philosophy. However, students may devote up to six hours within the joint major to additional language work. These hours may add to the classical language previously studied, or used to begin another language of significance for philosophical and theological work.

The distinctive features of the joint major should make the program particularly attractive to students preparing for advanced study.
Supplementary Majors, Minors, and Special Programs

Requirements in Philosophy:
PHIL 10101 or 20201, and 20xx-level course (University-required courses; a higher-level course may be substituted for the latter).
PHIL 30301 and 30302. History of Philosophy I and II.
PHIL 30313. Formal Logic.

Requirements in Theology:
THEO 10001 or 10002 and 20xx-level course (University-required courses).
THEO 40201 and 40202. Christian Traditions I and II.
THEO 40101 or 40108. Upper-division scripture course.

Plus:
Classical language (normally Greek or Latin)—two semesters.
Joint seminar.
Senior thesis.

18 credit hours of electives (up to six of these may be additional hours in language study).

COURSE DESCRIPTIONS
All of the courses associated with this academic program can be found online at registrar.nd.edu/students/class_search.php. The scheduled classes for a given semester may be found by clicking on “Class Search” and selecting Theology.

Course descriptions can be found by clicking on the subject code and course number in the search results.

Supplementary Majors, Minors, and Special Programs

A supplementary major is one that cannot stand alone in qualifying a student for an undergraduate degree but must be taken in conjunction with a primary major. Several departments offer both majors and supplementary majors. They have been described above. Included below are interdisciplinary nondepartmental supplementary majors and minors.

LIU INSTITUTE FOR ASIA AND ASIAN STUDIES

Director:
Michel Hockx
Assistant Director, DUS:
Patrick Deegan

The program in Asian Studies introduces students to the complexity of the continent of Asia. Students select courses in a wide variety of fields, such as anthropology, East Asian languages and cultures, economics, film, television, and theatre, history, political science, and psychology. The Liu Institute for Asia and Asian Studies also provides enriching activities such as lectures, films, gatherings, and grant opportunities to students interested in Asia. Students with the supplementary major or the minor in Asian Studies will be very desirable employees of international business or accounting firms, nonprofit governmental organizations, and service organizations. They will be well prepared for graduate school in a discipline, or for a professional school such as law or business. The supplementary major and the minor in Asian Studies provide recognition of students’ training in this significant region of the world.

THE SUPPLEMENTARY MAJOR IN ASIAN STUDIES

The supplementary major in Asian Studies emphasizes the study of Asia as an integral part of the world today. Students study both historical and contemporary aspects of culture, society, politics, literature, language, religion, etc. Required classes stress interdisciplinarity through our intra-university offerings.

Through the interdisciplinary nature of the major, classes draw from a broad range of topics, enabling the student to come away with a holistic and comprehensive study of Asia, including both humanistic and social scientific approaches to study.

Requirements for the Supplementary Major:
Asia-related courses from each of the following disciplines: (Total of 24 credit hours)

• One history: one class in ancient, early, or modern history (3 credit hours)
• One literature/culture (East Asian Languages and Cultures, English) (3 credit hours)
• One social science (anthropology, economics, political science, psychology, or sociology) (3 credit hours)
• One humanities (theology or philosophy) OR an additional literature/culture (3 credit hours)
• Three general electives (can include up to 6 credit hours of language) (9 credit hours)
• One upper-level course taken during the senior year that culminates in a capstone essay (3 credit hours)

THE GLYNN FAMILY HONORS PROGRAM

Directors:
Paul Weithman; Christopher Kolda

In the fall semester of 1983, the University inaugurated an honors program for a small number of outstanding students in the College of Arts and Letters and the College of Science. A limited number of students with academic intents for each college are identified for this program at the time of admission. Although selection criteria include the promise of outstanding academic performance as demonstrated by standardized test scores and high school performance, the program is looking for more than mere academic ability. It hopes to identify students with a deep intellectual curiosity.

The program offers honors sections to fulfill most of the University and college requirements in the students’ freshman and sophomore years. At present, there is the yearlong Honors Seminar (satisfying the writing and literature requirements), Honors Calculus, Honors Philosophy, Honors Theology, Honors Biology, Honors Physics, and an array of Honors Social Science courses. Since these courses are restricted to honors students, they are smaller than non-honors sections and are usually taught in a seminar format. The instructors for honors sections are chosen from the most outstanding faculty in each college. After the first year, students’ academic work will be mainly centered in their major field (or fields) of study, but two or more honors electives are also taken during these years. In the fall of the senior year, there is an “Honors Thesis/Research Seminar,” which is followed by the “Moral Problems Seminar” in the spring. The fall seminar is intended to be a spur to the students’ capstone project, whereas the spring seminar brings the honors students from diverse majors back together for some concluding topical discussions. At the end of senior year, students in the Glynn Program are also expected to submit a research project which reflects at least two semesters’ work under the guidance of a faculty advisor. In science, this is the culmination of a research project that is begun earlier, and in arts and letters, it is a two-semester project culminating in a thesis. Those writing senior theses work individually under the direction of a faculty advisor of their choosing in their major field. Funds are available for research projects during summers either at Notre Dame or other universities.

To Table of Contents
Supplementary Majors, Minors, and Special Programs

In addition to the more narrowly academic features of the honors program, students will be offered various opportunities for broadening personal, cultural and spiritual growth. Regular colloquia, informal discussions and cultural excursions are available.

Further information on the structure and content of the honors program or on the criteria for admission may be obtained by contacting Prof. Paul Weithman or Prof. Christopher Kolda, 309 O'Shaughnessy Hall, Notre Dame, IN 46556, 574-631-5398.

ARTS AND LETTERS PRE-HEALTH STUDIES

Director:
Vicki Toumayan
Assistant Dean
College of Arts and Letters

Students in the Arts and Letters Pre-Health Program are required to complete an arts and letters primary major in addition to the pre-health profession supplementary major. The APH2 program provides students who intend to pursue a career in medicine or other health profession with an opportunity to complete a major in the College of Arts and Letters while building a firm foundation in the basics of science. Most students elect the APH2 program because they wish to go on to medical or dental school; there are, however, students who intend to pursue other health-related careers or simply prefer the integration of science classes into the arts and letters curriculum. Medical schools encourage prospective applicants to seek a broad, liberal arts education, which enables them to develop skills that will be useful in their career and throughout life.

The APH2 program provides students with all of the necessary prerequisites to prepare for the Medical or Dental College Admissions Test and can easily accommodate the completion of prerequisite courses for other health professions such as physical therapy, physician assistant, nurse practitioner occupational therapy, pharmacy, veterinary medicine, optometry, and podiatry.

The APH2 major consists of 10 core courses: MATH 10350 & 10360, BIOS 20201 & 20202 and labs, CHEM 10171 & 10172 with labs, CHEM 20273 & 20274 and labs, and PHYS 30210 & 30220 with labs, plus three upper-level science electives (nine credits). For premed students Biochemistry (CHEM 40420) is required for the MCAT and the completion of one upper-level biology course (especially Cell Biology [BIOS 30341] or Physiology [BIOS 30344]) prior to the exam is strongly recommended. Students interested in one of the other health professions should choose APH2 electives in light of their prospective graduate program's requirements. CHEM 20204 and PHYS 20140 do not count toward the three upper-level science electives nor do research, special studies, or directed readings. Please note that a student may use no more than eight credits' worth of AP (Calculus only) toward the APH2 major. Transfer students may transfer a maximum of 24 science credits for APH2; otherwise, credit for science classes taken outside of Notre Dame does not generally count toward the APH2 major.

Students who wish to go to medical/dental school directly after graduation should aim to take the Medical/Dental College Admissions Tests in the spring of the junior year.

All curricular advising in reference to the APH2 major is conducted by the APH2 advisor in 104 O'Shaughnessy. The sequencing of courses taken throughout the sophomore, junior and senior years is worked out by the student in consultation with the APH2 director and the student's departmental advisor so that the best schedule for each individual is arranged. One possible sequence is the following:

**SAMPLE STUDY PLAN**

<table>
<thead>
<tr>
<th>First Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Semester</td>
</tr>
<tr>
<td>WR 13100, Written and Rhetoric</td>
</tr>
<tr>
<td>MATH 10350, Calculus A</td>
</tr>
<tr>
<td>CHEM 10171 and lab, Chemical Principles</td>
</tr>
<tr>
<td>Foreign Language</td>
</tr>
<tr>
<td>First Philosophy/First Theology</td>
</tr>
<tr>
<td>Moreau First Year Experience</td>
</tr>
<tr>
<td><strong>Total</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Second Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arts and Letters Major</td>
</tr>
<tr>
<td>MATH 10360, Calculus B</td>
</tr>
<tr>
<td>CHEM 10172 and lab, Organic Structure &amp; Reactivity</td>
</tr>
<tr>
<td>Foreign Language</td>
</tr>
<tr>
<td>History/Social Science</td>
</tr>
<tr>
<td>Moreau First Year Experience</td>
</tr>
<tr>
<td><strong>Total</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sophomore Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Semester</td>
</tr>
<tr>
<td>College Seminar</td>
</tr>
<tr>
<td>BIOS 20201 and lab, General Biology A</td>
</tr>
<tr>
<td>CHEM 20273 and lab, Organic Reactions and Applications</td>
</tr>
<tr>
<td>Foreign Language</td>
</tr>
<tr>
<td>Arts and Letters Major</td>
</tr>
<tr>
<td><strong>Total</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Second Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arts and Letters Major</td>
</tr>
<tr>
<td>BIOS 20202 and lab, General Biology B</td>
</tr>
<tr>
<td>CHEM 20274 and lab, Chem across the Periodic Table</td>
</tr>
<tr>
<td>First Philosophy/First Theology</td>
</tr>
<tr>
<td>Arts and Letters Major or Elective</td>
</tr>
<tr>
<td><strong>Total</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Junior Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Semester</td>
</tr>
<tr>
<td>PHYS 30210 and lab, Physics I</td>
</tr>
<tr>
<td>Science Elective</td>
</tr>
<tr>
<td>Arts and Letters Major</td>
</tr>
<tr>
<td>Arts and Letters Major or Elective</td>
</tr>
<tr>
<td>Social Science</td>
</tr>
<tr>
<td><strong>Total</strong></td>
</tr>
</tbody>
</table>

**Notes:**
1. *One of these requirements should be a University Seminar.*
2. *The MCAT includes material in psychology, sociology, and anthropology. Premed students should choose from among those disciplines in fulfilling the social science requirement(s). Introductory Psychology (PSY10000/20000) is highly recommended.*
3. *The MCAT includes questions on ethics. Premed students should consider fulfilling the second philosophy or theology requirement with a course on ethics.*

**COMPUTING AND DIGITAL TECHNOLOGIES (CDT) MINOR**

Director
Prof. Charles R. Crowell
Department of Psychology
121 Decio Hall/126 Hagggar Hall
(574) 277-4774
ccrowell@nd.edu

Administrative Assistant
Claire Shely
119 Decio Hall
(574) 631-7459
cdollin@nd.edu

Faculty
G. Alex Ambrose, Director, Kaneb Center for Teaching and Learning; Jeff Bain-Conkin, Department of History; Kevin Barry, Director, Kaneb Center for Teaching and Learning; Kevin Bowyer, Department of Computer Science and Engineering; Ramzi Bualuan, Department of Computer Science and Engineering; Peter Bui, Department of Computer Science and Engineering; Mike Chapple, Office of the Office of Information Technologies; Chris Clark, Kaneb Center for Teaching and Learning;
Program Overview
The Computing and Digital Technologies (CDT) minor is a blended program cutting across the Colleges of Arts & Letters and Engineering. Key departments in Arts & Letters have partnered with Computer Science & Engineering to offer a unique interdisciplinary minor. Program students will take CDT courses in both colleges to enhance their technical skills and increase their understanding of the ways in which technology can contribute to both personal and professional life. CDT will enrich the liberal arts educations of program students, broaden their perspectives, and give them skills and experience that prospective employers will value tremendously.

Program requirements
The Computing and Digital Technologies (CDT) minor requires five, 3-credit courses including:

- A two-semester core course sequence in programming, and
- Three additional elective courses from one or more of the sub-specialties listed below.

Required Core Courses
All program students are required to complete the two semester (fall–spring) core course sequence in the Python programming language. These courses will be offered every year by a faculty member in the Department of Computer Science and Engineering. The core sequence does not assume any prior background in programming and is intended to be an introductory experience for non-engineering students. Ideally, CDT students will complete the core sequences first before taking specialization courses, but that may not be possible or necessary in all cases.

Elective Specialty Courses
The CDT elective courses are organized into six categories reflecting the diversity of disciplines within the College of Arts and Letters along with areas of technology expertise that are attractive to potential employers. Program students are encouraged to view these categories as sub-specialty tracks within the minor and to gain depth by taking all of their elective courses in a single track. While specialization is not required, students must take at least two (2) courses in a track to earn a specialization in that area.

Courses With and Without Computational or Digital Focus
Most CDT courses have a significant computational or digital focus that involves student learning/use of technology. However, some may not, instead providing background information that is highly relevant to the particular specialty in question. In those courses without a computational/digital focus, CDT students are encouraged to take advantage of any project or paper requirements in the class to reflect on how computational methods or technology can be brought to bear on the subject matter of the course. CDT students are limited to only one course without computational/digital focus in any specialization track. If a student earns a specialization in a track with only two courses, both must have a computational/digital focus. Classes with and without computational/digital focus in each track are shown where applicable on the Courses pages.

CDT Specialty Tracks
- **User Interface and Experience.** This track allows students to focus on how technology systems should be designed to enhance and maximize the user experience.
- **Cyber Safety and Security.** This track allows students to focus on the vulnerabilities, threats, protections, investigations and legalities associated with technology systems.
- **Digital Humanities.** This track allows students to focus on the ways in which technology can assist in the analysis and understanding of literature and textual information.
- **Digital Arts.** This track allows students to focus on how technology can assist in the creation and display of artistic expression.
- **Cognitive Science.** This track allows students to focus on the important role technology plays in the growing field of cognitive science.
- **Technology Development and Management.** This track allows students to focus on the ways in which technology solutions can be can developed, implemented, managed, and maintained in organizations.

Requirement Completion Options
To complete CDT, a student must take five (5) courses total including:

- Two (2) core programming courses taken in sequence; and
- Three (3) elective specialty courses taken in one of the following five configurations:
  1. Three (3) courses with computational/digital focus in one track (earns track specialization); or
  2. Two (2) courses with computational/digital focus in one track and one (1) without computational/digital focus in same track (earns track specialization); or
  3. Two (2) courses with computational/digital focus in one track and one (1) with or without computational/digital focus in another track (earns track specialization); or
  4. One (1) course with computational/digital focus in each of three different tracks (does not earn track specialization); or
  5. One (1) course with computational/digital focus in each of two different tracks and one (1) without computational/digital focus in any track (does not earn track specialization).

NOTE: Fewer than three (3) specialty courses or fewer than two (2) courses with computational/digital focus will NOT fulfill CDT requirements.

DUAL-DEGREE PROGRAM WITH THE COLLEGE OF ENGINEERING
Advisors:
- Michael Ryan, Assistant Dean for Academic Affairs, College of Engineering
- Ava Preacher, Assistant Dean, College of Arts and Letters

Program of Studies. The dual-degree, five-year program between the College of Arts and Letters and the College of Engineering enables the student to acquire degrees from both colleges—the bachelor of arts from the College of Arts and Letters and the bachelor of science degree in a chosen program from the College of Engineering.

This combination program, instituted in 1952, offers students the advantages of both a liberal and a technical education. The student completing one of these combination programs has a background in the humanities and social sciences as well as a degree from one of the programs offered by the College of Engineering. Because it is a demanding program, only students who have both the aptitude and motivation necessary for the five-year program should apply. Advisors for the program are available for consultation about the advisability of entering the program and about meeting the particular needs of each student already pursuing this program. Qualified students are eligible to receive modest scholarship support from the John J. Reilly Endowed Scholarship Program during their fifth year of study.
The decision to enter the program ordinarily should be made prior to beginning the sophomore year, although students can also enter the program at a later stage. There are three sets of requirements that must be met for the program: University requirements, College of Arts and Letters requirements, and College of Engineering requirements, as the following table indicates.

### University Requirements

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Philosophy</td>
<td>6</td>
</tr>
<tr>
<td>Theology</td>
<td>6</td>
</tr>
<tr>
<td>Writing and Rhetoric</td>
<td>3</td>
</tr>
<tr>
<td>University Seminar+ (3)</td>
<td></td>
</tr>
<tr>
<td>History</td>
<td>3</td>
</tr>
<tr>
<td>Social Science</td>
<td>3</td>
</tr>
<tr>
<td>Literature or Fine Arts*</td>
<td>3</td>
</tr>
<tr>
<td>Mathematics (MATH 10550, 10560)</td>
<td>8</td>
</tr>
<tr>
<td>Natural Science (CHEM 10171, 10122)</td>
<td>7</td>
</tr>
</tbody>
</table>

### Arts and Letters Requirements

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>College Seminar</td>
<td>3</td>
</tr>
<tr>
<td>Literature or Fine Arts*</td>
<td>3</td>
</tr>
<tr>
<td>History or Social Science*</td>
<td>3</td>
</tr>
<tr>
<td>Language**</td>
<td>3/11</td>
</tr>
<tr>
<td>Major</td>
<td>30</td>
</tr>
</tbody>
</table>

### Engineering Requirements

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 20550, 20580</td>
<td>7</td>
</tr>
<tr>
<td>PHYS 10310, 10320</td>
<td>8</td>
</tr>
<tr>
<td>EG 10111, 10112</td>
<td>6</td>
</tr>
</tbody>
</table>

### Engineering Program

Engineering degree program (required courses and program or technical electives) 66/72

**Total** 168/177

### Schematic Program of Studies

**First Semester**
- WR 13100, Writing and Rhetoric 3
- History/Social Science* 3
- MATH 10550, Calculus I 4
- CHEM 10171, General Chemistry: Fundamental Principles 4
- EG 10111, Introduction to Engineering Systems I 3
- Moreau First Year Experience 1

**Total** 18

**Second Semester**
- University Seminar+ 3
- PHYS 10310, General Physics I 4
- MATH 10550, Calculus II 4
- CHEM 10122, General Chemistry: Biological Processes, or other technical course 3
- EG 10112, Introduction to Engineering Systems II 3
- Moreau First Year Experience 1

**Total** 18

### Third Semester

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Theology/Philosophy</td>
<td>3</td>
</tr>
<tr>
<td>Modern Language</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 10320, General Physics II</td>
<td>4</td>
</tr>
<tr>
<td>MATH 20550, Calculus III</td>
<td>3.5</td>
</tr>
<tr>
<td>Engineering Program†</td>
<td>3</td>
</tr>
</tbody>
</table>

**Total** 16.5

### Fourth Semester

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Theology/Philosophy</td>
<td>3</td>
</tr>
<tr>
<td>CSEM 23101, College Seminar</td>
<td>3</td>
</tr>
<tr>
<td>Modern Language</td>
<td>3</td>
</tr>
<tr>
<td>MATH 20580, Introduction to Linear Algebra and Differential Equations</td>
<td>3.5</td>
</tr>
<tr>
<td>Engineering Program†</td>
<td>3</td>
</tr>
<tr>
<td>Engineering Program</td>
<td>3</td>
</tr>
</tbody>
</table>

**Total** 18.5

### Fifth Semester

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Philosophy/Theology</td>
<td>3</td>
</tr>
<tr>
<td>History/Social Science*</td>
<td>3</td>
</tr>
<tr>
<td>Engineering Program</td>
<td>3</td>
</tr>
<tr>
<td>Arts and Letters Major‡</td>
<td>3</td>
</tr>
<tr>
<td>Engineering Program</td>
<td>3</td>
</tr>
</tbody>
</table>

**Total** 18

### Sixth Semester

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Philosophy/Theology</td>
<td>3</td>
</tr>
<tr>
<td>Arts and Letters Major</td>
<td>3</td>
</tr>
<tr>
<td>Engineering Program</td>
<td>3</td>
</tr>
<tr>
<td>Engineering Program</td>
<td>3</td>
</tr>
</tbody>
</table>

**Total** 18

### Seventh Semester

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Literature*</td>
<td>3</td>
</tr>
<tr>
<td>History/Social Science*</td>
<td>3</td>
</tr>
<tr>
<td>Engineering Program</td>
<td>3</td>
</tr>
<tr>
<td>Engineering Program</td>
<td>3</td>
</tr>
<tr>
<td>Arts and Letters Major</td>
<td>3</td>
</tr>
</tbody>
</table>

**Total** 18

### Eighth Semester

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fine Arts*</td>
<td>3</td>
</tr>
<tr>
<td>Engineering Program</td>
<td>3</td>
</tr>
<tr>
<td>Engineering Program</td>
<td>3</td>
</tr>
<tr>
<td>Arts and Letters Major</td>
<td>3</td>
</tr>
<tr>
<td>Engineering Program</td>
<td>3</td>
</tr>
</tbody>
</table>

**Total** 18

### Ninth Semester

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engineering Program</td>
<td>3</td>
</tr>
<tr>
<td>Engineering Program</td>
<td>3</td>
</tr>
<tr>
<td>Engineering Program</td>
<td>3</td>
</tr>
<tr>
<td>Arts and Letters Major</td>
<td>3</td>
</tr>
<tr>
<td>Arts and Letters Major</td>
<td>3</td>
</tr>
</tbody>
</table>

**Total** 18

### Tenth Semester

**Total** 15

†Courses specified by the student’s major engineering department. Minimum total for the five-year program to fulfill degree requirements in both colleges is 168 to 177 credit hours.

‡Courses necessary to fulfill the requirements for a major in the student’s major arts and letters department.

### Education

#### Elementary Education

The Notre Dame student taking elementary education at Saint Mary’s College must also complete a Notre Dame major along with the University and appropriate college requirements. Those interested in the elementary education program are encouraged to take the prerequisite course, EDU 201, at Saint Mary’s in the second semester of their first year of studies. With appropriate planning, and possibly summer-school course work, both the Notre Dame major and elementary teaching certification can be completed in four years.

#### Secondary Education

(including middle school)

The following Notre Dame majors have been approved for secondary education licensing through the Education Department at Saint Mary’s College:

**In the College of Science:** biology, chemistry, mathematics.

**In the College of Arts and Letters:** English, languages (French, Spanish, Latin), art, music, social studies (history and political science). Students interested in a secondary license in social studies must also complete additional course work in political science or history (depending on the major) and in one other area: either economics, sociology, or psychology.

**In the College of Business:** business education.

Notre Dame undergraduates interested in one of the professional teacher education programs should
apply to the department the first semester of the sophomore year, but in some cases may start as late as the first semester of the junior year.

Students in the College of Arts and Letters, contact education advisor Stuart Greene for more information and help with planning. Students in the College of Science, contact Dr. Kathleen Cannon at 574-631-5812.

Interdisciplinary Minors within the College

During the junior and senior years, students may elect to complete one or more interdepartmental minors in addition to the departmental major sequence. Composed of 15 hours of class work chosen from at least two departments, these minors encourage students to think from an interdisciplinary perspective about a given issue or topic. Requirements for completion are determined by the faculty director in consultation with the relevant college committee. Current offerings include Catholic Social Tradition; Education, Schooling, and Society; Gender Studies; Hesburgh Program in Public Service; Journalism, Ethics, and Democracy; Latino Studies; Medieval Studies; Peace Studies; Philosophy and Literature; Philosophy, Politics, and Economics; Philosophy Within the Catholic Tradition; Religion and Literature; and Science, Technology, and Values. These were formerly called concentrations and are described in detail below.

CATHOLIC SOCIAL TRADITION

Co-Directors:
Bill Purcell (wpurcell@nd.edu/574-631-9473)
Todd David Whitmore (twhitmor@nd.edu/574-631-6407)

Program Assistant:
Paula Muhlheir (muhlheir.1@nd.edu/574-631-9402)

The Minor in Catholic Social Tradition is an interdisciplinary minor that serves as a resource for Notre Dame undergraduates to learn Catholicism’s social tradition.

Catholicism offers a long-standing and profound tradition of thought and teaching that addresses, from a normative standpoint, the full range of social spheres. Such concepts include those of solidarity, the common good, the just wage, human rights, the free economy, subsidiarity, and the option for the poor.

Sources for the tradition go back as far as the Bible and develop even in the early church fathers. Pope Leo XIII inaugurates Catholicism’s effort to bring its social tradition to bear on industrial society in his 1891 encyclical, Rerum Novarum (The Condition of Labor). Since then, popes have drawn upon Rerum Novarum and the social tradition to broaden and develop Leo’s set of concerns in encyclicals often titled—as with Pius XII’s Quadragesimo Anno, Paul VI’s Octogesima Adveniens, and John Paul II’s 1991 Centesimus Annus—in accordance with their relationship to the earlier document. In doing so, the popes and the Second Vatican Council have addressed issues ranging across all spheres of social life from the family to the state to the church. The U.S. bishops have made sophisticated application of these teachings to the specific circumstances of the United States.

Unfortunately, many Catholics are unaware of this tradition. Pope John Paul II writes, “It must be asked how many Christians really know and put into practice the principles of the church’s social doctrine.” The U.S. bishops concur. While “Catholic social teaching is a central and essential element of our faith,” it is still the case that “our social heritage is unknown by many Catholics.” At the same time, graduates of Notre Dame move on to assume leadership positions, often quite advanced ones, in a broad spectrum of social spheres, including in politics, law, business, education, the media, and the military. The Catholic Social Tradition minor serves as a resource for Notre Dame undergraduates to learn the tradition so that it can inform life both before and after graduation.

The Minor in Catholic Social Tradition involves 15 credit hours of course work, including a core course (3 credits), two electives (each three credits), three one-credit colloquia/social concerns seminars, and a senior capstone course.

Contact: Todd David Whitmore at twhitmor@nd.edu, or Bill Purcell at wpurcell@nd.edu.

COURSE DESCRIPTIONS

All of the courses associated with this academic program can be found online at registrar.nd.edu/students/class_search.php. The scheduled classes for a given semester may be found by clicking on “Class Search” and selecting the subject Catholic Social Tradition. Course descriptions can be found by clicking on the subject code and course number in the search results.

CONSTITUTIONAL STUDIES

Director:
Vincent Phillip Muñoz (vmunoz@nd.edu/574-631-0489)

Program Assistant:
Jennifer Smith (jsmith70@nd.edu/574-631-5351)

Program Website:
constudies.nd.edu

Nothing has done more for justice in the modern world than the development of the rule of law under constitutional principles. But for constitutional government to be effective, those who make and enforce laws must possess certain virtues: they must understand and be able to implement, defend, and, if need be, reform constitutional institutions. The Constitutional Studies minor seeks to nurture such citizens, thereby contributing to the University’s mission to pursue truth and to nurture a concern for the common good, that will bear fruit as learning becomes service to justice.

Building on courses across the College of Arts and Letters and the Law School, the Constitutional Studies minor is designed to encourage students to confront fundamental questions regarding justice, the rule of law, and human flourishing. From a variety of historical, cultural, disciplinary, and philosophical perspectives, constitutional studies ask questions such as:

• What is the proper relationship between government and civil society, between law and moral principles?
• What are the philosophical foundations of human rights and constitutional democracy?
• What principles of justice can or should lie at the foundation of a constitutional republic?
• What are the proper relationships between church and state and religion and politics, and how do these relationships reflect the more basic relationship between faith and reason?
• What are the moral, social, and political conditions necessary to sustain America’s experiment in constitutional government?
• What is the nature of international law and how are international norms created and maintained?

Constitutional Studies minors receive invitations to participate in extracurricular events associated with the Potenziarian Program in Constitutional Studies, the Tocqueville Program for Inquiry into Religion and Public Life and the Law School’s Program in Constitutional Structure.

Constitutional Studies Minor Requirements:
The Constitutional Studies minor requires 15 credit hours of class work. Students must complete core topics in constitutional studies, such as the history and philosophy of constitutional government and human rights and contemporary constitutional issues in American and international law.

• One of the program’s gateway courses:
  Constitutionalism, Law and Politics, or CLP II: American Constitutionalism (3 credit hours)
• Three elective courses (total of 9 credit hours)
• Capstone experience (3 credit hours)

The elective courses are grouped into the following clusters:

• Constitutionalism: History and Philosophy
• The American Founding and American Constitutional History
• Constitutional Government and Public Policy
• Comparative Constitutionalism and International Law

These categories focus on the great political and constitutional debates in American and world history and on the underlying principles of constitutional government—natural and civil rights, social contract theory, the market economy, voluntary associations, separation of powers, popular sovereignty, and
Interdisciplinary Minors within the College

the rule of law. Elective courses that count for the Constitutional Studies minor for current and past semesters are listed on the minor's website (constudies.nd.edu/courses).

**COURSE DESCRIPTIONS**

All of the courses associated with this academic program can be found online at constudies.nd.edu/courses OR at registrar.nd.edu/students/class_search.php. The scheduled classes for a given semester may be found by clicking on “Class Search” and selecting the subject Constitutional Studies. Course descriptions can be found by clicking on the subject code and course number in the search results.

**EDUCATION, SCHOOLING, AND SOCIETY**

The primary goal of this interdisciplinary minor is to help students acquire different and diverse perspectives on important questions in education. Education is a complex and challenging aspect of human experience. It is one of the central, shared experiences of people in contemporary societies in the United States and around the world. It is both an end in itself and a means to many personal, professional, and spiritual goals. Thus, understanding its history and traditions, analyzing its processes, critiquing its goals, and studying its outcomes are of great importance to all of us.

Most societies rely on education to bring about fundamental changes in students and in society. The minor in Education, Schooling and Society (ESS) uses the tools and resources of a liberal arts perspective to help students reflect on, understand, research, and influence the role of education in society. In addition, the program will provide a rich body of resources for students who may want to pursue careers in education after graduation, including teaching, research, working for non-profits, or policy making.

Normally, students apply for admission to the minor late in their freshman year or early in their sophomore year, and this is ideal. Students should be in good academic standing and demonstrate a strong interest in issues related to the causes and consequences of learning, schooling, and educational policy.

The minor in ESS involves 15 hours of course work. The introductory course is ESS 33600. This course must be completed by the second semester of the junior year. Throughout the program, students select three courses from a set of approved electives: two that focus exclusively on educational issues and one that includes education as one of several course foci. Students also complete a capstone project as part of the minor. This requirement may be met in one of three ways: (1) participation in the Senior Research Seminar, ESS 43640, in the fall semester of the senior year; (2) a thesis in ESS (includes an approval process and a pre-requisite of at least 2 credits of ESS 47602 Research Lab); or (3) a thesis in the major department that incorporates the study of an educational issue into the research question (includes an approval process and second reader from the IEI Fellows list). Students who choose the thesis in the major department are required to take an additional ESS elective to satisfy the 15-credit requirement of the minor. The capstone project provides students with an opportunity to build upon and extend the work they have completed in fulfilling the requirements for the minor. Students design and execute an original research project and write a paper of 25–40 pages, depending on the option they choose. This process is writing intensive, requiring drafts, revisions, peer review when appropriate, and individual consultations between the professor and student.

The faculty work closely with students on postgraduate planning, including employment, graduate or professional school, or service opportunities.

**Director:** Prof. Nicole McNeil, Phone: 574-631-5678

**Person to see:** Ann Berends, Phone: 574-631-1672, 1005 Carole Sandner Hall, E-mail: a.berends@nd.edu

**COURSE DESCRIPTIONS**

All of the courses associated with this academic program can be found online at ess.nd.edu or at registrar.nd.edu/students/class_search.php. The scheduled classes for a given semester may be found by clicking on “Class Search” and selecting the subject Education, School and Society. Course descriptions can be found by clicking on the subject code and course number in the search results.

**HESBURGH PROGRAM IN PUBLIC SERVICE**

**Interim Director:** Ricardo Ramírez

**Program Manager:** Claudia Anewalt

The Hesburgh Program in Public Service serves students interested in public policy and public service. By preparing students for engaged citizenship, the Program honors the dedicated leadership and public service of the late Rev. Theodore Hesburgh, C.S.C.

The health of American society is closely related to good public policy and ethical leadership. Through an interdisciplinary curriculum in public policy, the Hesburgh Program provides a foundation for students who plan to pursue careers in the public sector, non-profits, or private business and seek to be knowledgeable and effective citizens.

The minor consists of 15 credit hours: Introduction to Public Policy, three electives, and a capstone during the senior year. All students take the “gateway” course, Introduction to Public Policy, preferably early in the program, and select one elective to fulfill the research tools requirement. Hesburgh minors choose two additional electives from courses in three categories: values, institutions and processes, and policy topics (only one course per category). The capstone course, The Policy Making Process, focuses on practical skills and policy writing. An independent, semester-long research option is also available to fulfill the capstone requirement. Introduction to American Politics (or equivalent) and Introduction to Microeconomics (or equivalent) are prerequisites to the Hesburgh Program course of study.

The Hesburgh Program encourages students to engage in summer internships and offers generous support through the Gary Lyman Internship Stipend Awards. Students with internships in public policy and public service may apply for funding twice during their time at the University.

Interested students should meet with the Program Manager. Students from all colleges and majors are welcome to declare the minor.

For more information contact Claudia Anewalt at canewalt@nd.edu or visit our website hesburghprogram.nd.edu

**COURSE DESCRIPTIONS**

All of the courses associated with this academic program can be found online at hesburghprogram.nd.edu/courses or at registrar.nd.edu/students/class_search.php. The scheduled classes for a given semester may be found by clicking on “Class Search” and selecting the subject Hesburgh Program in Public Service. Course descriptions can be found by clicking on the subject code and course number in the search results.

**INTERNATIONAL DEVELOPMENT STUDIES**

**Director:**

Steve Reifenberg

The goal of the Kellogg Institute for International Studies’ minor in International Development Studies (IDS) is to provide undergraduate students with both the opportunity to learn about and contribute to international development. IDS will provide context and an academic foundation for students to analyze the dynamics of development across the globe as well as help students develop skills for effective engagement in a complex world.

Development studies is interdisciplinary in nature, so students are required to take courses in a variety of disciplines. This equips students with a broad lens through which to view and investigate development challenges. Students from all colleges and departments are encouraged to enroll.

The IDS minor prepares students for a variety of post-graduate options related to international development, including graduate work in development studies, volunteer work or employment in the field, ranging from international and advocacy organizations, businesses, consulting firms, and policy and research groups. Regardless of what career path IDS students follow, the breadth and diversity of academic and fieldwork training help prepare students to make effective and ethical engagement in a complex world.
them to apply their learning from the classroom to the world around them.

The IDS minor was founded by the Kellogg Institute’s Ford Program in Human Development Studies and Solidarity, and today the minor is managed by the Kellogg Institute, working closely with the Ford Program. To supplement their course work, students can take advantage of the many opportunities made available by the Kellogg Institute and the Ford Program: a calendar of events, grants and internship opportunities, an annual student-led human development research conference, and other resources.

Requirements:
A central component and requirement of the IDS minor is a field-based research project in the so-called “developing” world, allowing students to contribute to the Ford Program’s mission of seeking solutions to real world challenges by examining the causes and consequences of extreme poverty. This research project will normally be conducted the summer after a student’s junior year.

Additionally, the minor in International Development Studies consists of 15 credit hours:

Gateway Course (3 credit hours): Introduction to International Development Studies
• This course is usually offered in the fall and spring semesters and will normally be taken during sophomore year.

Research Methods Course (3 credit hours)
• Students are expected to take a research methods course through the designated IDS courses or through a methods course in a student’s major.
(Courses that meet this requirement must be approved by the IDS office.)

Two Electives (6 credit hours):
• Qualifying elective courses are listed each semester in the Schedule of Classes under IDS.
• When possible, students are encouraged to take an elective outside a student’s major college.
• One of these electives must be outside a student’s major.
• At least one elective must be from a set of “core” development courses to be specified each semester.
• With approval, one course may be taken abroad.

Capstone Seminar (3 credit hours):
• This course will be taken the fall semester of senior year.
• Each student will write a senior essay based on his or her field research.
• Bringing together their unique experiences and disciplinary perspectives, students will discuss and critique each other’s work.

For more complete information about the minor in International Development Studies, please consult our website at kellogg.nd.edu/students/ids. Questions about the minor can be directed to Holly Rivers, assistant director, Kellogg Institute at hrivers@nd.edu

COURSE DESCRIPTIONS
All of the courses associated with this academic program can be found online at registrar.nd.edu/students/class_search.php. The scheduled classes for a given semester may be found by clicking on “Class Search” and selecting the subject International Development Studies. Course descriptions can be found by clicking on the subject code and course number in the search results.

JOHN W. GALLIVAN PROGRAM IN JOURNALISM, ETHICS, AND DEMOCRACY

Directed by:
Robert Schmuhl

The John W. Gallivan Program in Journalism, Ethics, and Democracy offers several courses for students interested in careers in print, broadcast, online, and multimedia journalism. Begun in 1997 with a grant from the John S. and James L. Knight Foundation and now endowed by the family of John W. Gallivan, this minor combines professional training in journalistic skills with examination of philosophical concerns related to the practice of journalism. For example, what ethical issues arise in preparing a particular story? Or what role does—and should—journalism play in a self-governing society?

The journalism minor requires completion of 15 hours in addition to a student’s major requirements and a news-related internship during either the summer or the academic year. Fundamentals of Journalism is the first, or gateway, class for the program. Other courses that count for the minor include The Craft of Journalism; Advanced Reporting; Multimedia Journalism; Persuasion, Commentary, and Criticism; Broadcast Journalism; and Ethics in Journalism.

The director of the program is Robert Schmuhl, the Walter H. Annenberg-Edmund P. Joyce Professor of American Studies and Journalism. An advisory committee of Notre Dame graduates in journalism helps guide the program. Members include Robert Costa, national political reporter, The Washington Post; Michael D. (Mickey) Gallivan, former television and wire service journalist and program benefactor; Maddie Hanna, reporter, The Philadelphia Inquirer; Daniel LeDuc, senior officer and editor, The Pew Charitable Trusts; Meg Martin, associate editor, Public Insight Network at American Public Media; John McMeel, chairman, Andrews McMeel Universal; and Anne Thompson, chief environmental affairs correspondent, NBC News.

COURSE DESCRIPTIONS
All of the courses associated with this academic program can be found online at registrar.nd.edu/students/class_search.php. The scheduled classes for a given semester may be found by clicking on “Class Search” and selecting the subject Journalism, Ethics & Democracy. Course descriptions can be found by clicking on the subject code and course number in the search results.

LATINO STUDIES

Co-Director:
Luis Ricardo Fraga

Co-Director:
Timothy Matovina

Director of Undergraduate Studies:
Karen Richman, Ph.D.,

Program of Studies
Latinos encompass immigrants from every country in Latin America and the Caribbean as well as those whose ancestors were long ago incorporated during U.S. westward expansion. The supplemental major and minor in Latino Studies engage students with the latest research and analysis on the diverse Latino population in fields such as American studies, anthropology, history, literature, political science, sociology, and theology. Each semester, the Institute for Latino Studies offers approximately fourteen undergraduate courses that range from classroom lectures and seminars to community-based, service-learning courses in the local Latino community of South Bend. ILS also offers annual summer service-learning courses in Chicago, Los Angeles, and Washington, D.C. Latino Studies is relevant to practically every academic discipline and to careers in architecture, business, church leadership, community organizing, the arts, engineering, law, medicine, teaching, and much more. Latino Studies enhances students’ leadership and effectiveness in whatever pathway your life takes you beyond Notre Dame.

Supplementary Major
The supplementary major in Latino Studies consists of twenty-four (24) credits: a gateway course (3 credits), capstone/practicum course (3 credits), and eighteen (18) credit hours or the equivalent of six additional Latino Studies courses.

Requirements:
1. Gateway Course (3 credits)
ILS 20701, Introduction to Latinos in American Society. This course examines the Latino experience in the United States, including the historical, cultural, social, economic, political, and religious foundations of the diverse U.S. Latino population.

2. Capstone/Practicum Course (3 credits)
In this 40000-level course, students meet in a seminar-style class and complete a substantial research project (approximately 15–20 pages) based on bibliographic and/or experiential research in Latino Studies.

3. Elective Courses (18 credits)
Students take six more Latino Studies courses as electives chosen in consultation with the ILS Director of Undergraduate Studies.
4. Senior Thesis Option (3 credits)
A senior thesis in Latino Studies is encouraged, but not required, for students enrolled in the supplementary major. In addition, Glynn Honors Program students enrolled in the Latino Studies program as minors or supplemental majors may also write a senior thesis in Latino Studies. Thesis students take the thesis-writing course in Latino Studies (ILS 48900) under the direction of their thesis faculty supervisor. A minimum grade point average and faculty recommendation are required for acceptance. Students interested in writing a senior thesis should apply to the ILS Director of Undergraduate Studies by the spring of their junior year.

5. Directed Reading Course Option (1–3 credits)
A directed readings course (ILS 46711) allows a student to explore in depth a theme or subject in Latino Studies under the guidance of a faculty member. Directed readings cover material that is not offered as a regular classroom course. Enrollment requires the approval of the Director of Undergraduate Studies.

Minor
The minor in Latino Studies consists of fifteen (15) credit hours: a gateway course (3 credits), capstone/practicum course (3 credits), and nine (9) credit hours of elective course work.

Requirements:
1. Gateway Course (3 credits)
ILS 20701, Introduction to Latinos in American Society. This course examines the Latino experience in the United States, including the historical, cultural, social, economic, political, and religious foundations of the diverse U.S. Latino population.

2. Capstone/Practicum Course (3 credits)
In this 40000-level course, students meet in a seminar-style class and complete a substantial research project (approximately 15–20 pages) based on bibliographic and/or experiential research in Latino Studies.

3. Elective Courses: (9 credits)
Students take three additional Latino Studies courses as electives chosen in consultation with the ILS Director of Undergraduate Studies.

4. Senior Thesis Option (3 credits)
A senior thesis in Latino Studies is encouraged, but not required, for students enrolled in the minor. In addition, Glynn Honors Program students enrolled in the Latino Studies program as minors or supplemental majors may also write a senior thesis in Latino Studies. Thesis students take the thesis-writing course in Latino Studies (ILS 48900) under the direction of their thesis faculty supervisor. A minimum grade point average and faculty recommendation are required for acceptance. Students interested in writing a senior thesis should apply to the ILS Director of Undergraduate Studies by the spring of their junior year.

5. Directed Reading Course Option (1–3 credits)
A directed readings course (ILS 46711) allows a student to explore in depth a theme or subject in Latino Studies under the guidance of a faculty member. Directed readings cover material that is not offered as a regular classroom course. Enrollment requires the approval of the Director of Undergraduate Studies.

Summer Service Learning Courses
The Cross-Cultural Leadership Program (CCLP) engages students in real-world applications of their academic studies through summer service learning in Chicago, Los Angeles, and Washington, D.C. Students in this three-credit, eight-week summer course will be immersed in community-based and national organizations. They will also engage in critical study related to their service learning in a class led by an ILS professor. To promote full immersion in this service-learning experience, students will not be placed in their home communities.

COURSE DESCRIPTIONS
All of the courses associated with this academic program can be found online at registrar.nd.edu/students/class_search.php. The scheduled classes for a given semester may be found by clicking on “Class Search” and selecting the subject Latino Studies. Course descriptions can be found by clicking on the subject code and course number in the search results.

LITURGICAL MUSIC MINISTRY
This 18-credit minor consists of three 3-credit courses in theology and two 3-credit courses in music, plus 3 credits of music lessons or approved ensembles, to be selected in consultation with the student’s music advisor. Contact the director of undergraduate studies in the Department of Theology.

MIDDLE Ages
The Minor in Medieval Studies allows students who are committed to other programs of study to pursue interests in the culture of the Middle Ages and to cross the limits of individual disciplines as a means of understanding the changing social, economic, legal, intellectual, and artistic systems of medieval society. Students may declare their intention to undertake a minor in Medieval Studies to the director of undergraduate studies at any time before the end of their third year. The undergraduate director will then act as their minor advisor and help them select a set of courses that form a coherent program of study, often in conjunction with their major if possible. Students are required to take five courses, including the introductory course, The World of the Middle Ages, and three or four electives in Medieval Studies drawn from at least two of the 12 affiliated departments: (Anthropology; Art, Art History, and Design; Classics; English; German and Russian Languages and Literatures; History; Irish Language and Literature; Music; Philosophy; Political Science; Romance Languages and Literatures; and Theology). The Medieval Studies Advanced Seminar (3 credits) is recommended as one of the five courses, in lieu of a medieval elective, on a space-available basis. Courses counted toward a student’s major may not be used for the minor.

COURSE DESCRIPTIONS
All of the courses associated with this academic program can be found online at registrar.nd.edu/students/class_search.php. The scheduled classes for a given semester may be found by clicking on “Class Search” and selecting the subject Medieval Institute. Course descriptions can be found by clicking on the subject code and course number in the search results.

Peace Studies
Director of Undergraduate Studies:
Ernesto Verdeja
Assistant Director:
Anna Van Overberghe

Peace Studies at the University of Notre Dame is centered at the Kroc Institute for International Peace Studies. Profiles of the Peace Studies faculty and information about activities in Peace Studies can be found on the Kroc Institute’s website at kroc.nd.edu.

Program of Studies. Peace Studies is defined as an interdisciplinary field of study that draws on diverse academic disciplines to understand the causes of violent conflict; develop nonviolent ways to prevent and resolve war, genocide, terrorism and gross violations of human rights; and build peaceful and just societies.

As a liberal arts curriculum, Peace Studies links scholarship to practice and empowers students to become effective citizens with global perspective. It develops critical thinking skills, strengthens research and writing ability, teaches specific tactics in areas such as conflict resolution and social change, and challenges students to develop their knowledge into new ways of thinking and acting in the world. Peace Studies provides students with the capacity to imagine and build the global community as it ought to be (rather than simply how it is) and with the skills to work toward that vision.

The Undergraduate Program in Peace Studies offers two curriculum options: the Supplementary Major in Peace Studies (24 credits) and the Interdisciplinary Minor in Peace Studies (15 credits). Both require students to complete an introduction course, a mid-level course on peacebuilding and a capstone research and writing seminar. The remaining coursework consists of electives selected from the Peace Studies course catalog. Electives are designated as either core electives or support electives.

The Supplementary Major. The Supplementary Major in Peace Studies requires successful completion of eight (8) courses: the three required courses and five courses selected from a list of approved peace studies electives. At least two of the five electives must be core electives. The curriculum for the supplementary major is:
Required Courses
IIPS 20101 Introduction to Peace Studies 3 cr
IIPS 33101 Perspectives on Peacebuilding 3 cr
IIPS 43101 Peace Studies Senior Seminar 3 cr

Peace Studies Electives
2 core IIPS courses 6 cr
3 additional IIPS courses (core or support) 9 cr

The Interdisciplinary Minor. The Interdisciplinary Minor in Peace Studies requires successful completion of five (5) courses: the three required courses and two courses selected from a list of approved peace studies electives. The curriculum for the minor is:

Required Courses
IIPS 20101 Introduction to Peace Studies 3 cr
IIPS 33101 Perspectives on Peacebuilding 3 cr
IIPS 43101 Peace Studies Senior Seminar 3 cr

Peace Studies Electives
2 additional IIPS courses (core or support) 6 cr

The required courses may not be taken concurrently. Introduction to Peace Studies is a pre-requisite for Perspectives on Peacebuilding, and both of those foundational courses are pre-requisites for Peace Studies Senior Seminar. The senior seminar course may only be taken during the senior year.

Elective courses may be completed at any point, and they may be taken concurrently with required courses. However, students are advised to take Introduction to Peace Studies first, before completing other work in the curriculum. Courses taken abroad count only as Peace Studies electives and may not substitute for any of the required courses.

COURSE DESCRIPTIONS
All of the courses associated with this academic program can be found online at registrar.nd.edu/students/class_search.php. The scheduled classes for a given semester may be found by clicking on “Class Search” and selecting the subject Institute for International Peace Studies. Course descriptions can be found by clicking on the subject code and course number in the search results.

PHILOSOPHY, RELIGION, AND LITERATURE

Director:
Henry Weinfield

The Philosophy, Religion, and Literature minor brings together and amalgamates two formerly existing minors, Philosophy and Literature and Religion and Literature. The new minor is designed for students who want to pursue an interdisciplinary course of studies that focuses on the many intersections among philosophy, religion, and literature. The minor seeks to build bridges between disciplines and modes of thought which have traditionally been in dialogue with one another and which historically have been at the heart of teaching at Notre Dame. The aim is to create a context in which philosophical, religious, and literary approaches to thought and its expression may be studied systematically and in conjunction with each other. This integrative approach to liberal education’s foundational subjects resonates deeply with the intellectual values and mission of Notre Dame.

Curricular Requirements. The Philosophy, Religion, and Literature minor will require students to complete 15 credit hours of approved course work. These 15 credit hours will normally comprise at least one three-credit Gateway seminar, three three-credit electives, and a three-credit capstone project.

Gateway Seminar. Students are required to take a three-credit Gateway seminar, either in philosophy and literature or in religion and literature. The minor is thus organized around two parallel but intersecting tracks. A Gateway seminar in each track is offered each academic year, one in the fall, the other in the spring. The purpose of the Gateway seminars, whatever their specific topics may be, is to provide a rigorous introduction to the study of philosophy and literature or religion and literature.

Electives. In addition to the Gateway seminar, students are required to take three other courses that have been approved for the minor. The minor’s advisor will help students identify courses relevant to the minor and to their own individual interests and needs.

Integrating the tracks. Students working primarily in one track are required to take one course in the other. Thus, a student focusing on religion and literature is required to take one course in philosophy and literature. That course may be either the Gateway seminar or another course. If students choose to fulfill this requirement by taking Gateway seminars in both tracks, both seminars will count toward the 15 credit hours needed for the minor.

The capstone project. For the capstone project, each student, working directly with a professor associated with the minor, will write a research essay of approximately 20 pages on a topic that embraces philosophy and literature or religion and literature, or both. Students are encouraged to consult with a professor who is working in a different subject area from the one on which the advisor has expertise. Thus, if a student’s advisor is in Theology, that student will be encouraged to consult with a literature professor who has some interest in the student’s topic. We recognize that some seniors in the College of Arts and Letters are writing senior theses for their majors. In many cases it is unrealistic to expect such students to write an additional capstone essay. Students in the Philosophy, Religion, and Literature minor who are already writing a senior thesis are allowed to complete the minor by taking a fifth elective course instead of the capstone project, provided that the senior thesis topic in some way resonates with the overall themes of the minor.

Events and Activities. The Notre Dame community already hosts a number of lectures, forums, and one-day seminars relevant to the minor. In addition, the minor will sponsor events and activities such as trips to the opera and theater. Students in the minor are required to attend at least three such events.

For further information, contact Prof. Henry Weinfield, Program of Liberal Studies, hweinfield@nd.edu

PHILOSOPHY, POLITICS, AND ECONOMICS

The minor in philosophy, politics, and economics (PPE) is designed for students with serious interests at the intersection of political theory, political philosophy, and economic theory. Its aim is to help students acquire some fluency in each of the disciplines, and to provide a forum where all three disciplines can be brought to bear on problems which are common or complementary. PPE emphasizes the development of the analytic skills exercised in close reading, cogent writing and clear oral expression. Students are strongly encouraged to engage in undergraduate research and to write senior theses. A high percentage of PPE graduates pursue advanced degrees.

The PPE minor is 15 credits, including the 3-credit Justice Seminar, which is the core course of the minor and is required of all concentrators. The minor is open by application only; any student who wishes to take the Justice Seminar must complete the application for the minor. Most of the students who are granted admission to the PPE minor are majors in philosophy, political science or economics and the vast majority granted admission to the seminar are PPE-intents. But first-years, sophomores and juniors from across the University are welcome to submit applications, regardless of their majors.

The PPE curriculum consists of 15 credit hours usually distributed over four semesters, as follows:

• The Justice Seminar (cross-listed in Philosophy, Political Science, and Economics), an intensive 3-credit-hour seminar that is the gateway to the minor, taken in the fall semester of sophomore or junior year. (3 credit-hours)

• Three 1-credit PPE Colloquia, each devoted either to the critical reading and discussion of one or two major works or to a group project on some contemporary issue(s). The colloquia are normally taken in the three semesters following the Justice Seminar. Special arrangements can sometimes be made for students who wish to participate in a colloquium while studying abroad. (3 credit-hours in total)

• Three approved 3-credit courses from the two fields outside the student’s first major, with at least one course in both non-major fields. (9 credit hours in total)

Total credit-hours: 15.

PPE students are also encouraged (but not required) to write senior theses in their majors that reflect the interdisciplinary focus of the program.
The Justice Seminar is always offered in the fall semester. An informational meeting about the PPE minor is usually held early in the March of each year, with applications for the minor normally due early in April of the year in which the Seminar will be taken.

Contact: Director Mary Keys, Department of Political Science, 352 Decio, mkeys1@nd.edu.

PHILOSOPHY WITHIN THE CATHOLIC TRADITION

Director: John O’Callaghan, Philosophy

This minor is only open to undergraduates who are majors in either philosophy or theology and who wish to add to their knowledge of philosophy and theology an understanding of what the distinctively Catholic tradition in philosophy is. It is unlike most interdisciplinary minors in being restricted in this way; work in this minor presupposes a background of some significant work in either philosophy or theology. A central task assigned to philosophy within the Catholic tradition has been that of understanding the relationship of theology to the secular disciplines, so that the relevance both of theology to these disciplines and of those disciplines to theology becomes clear. In this minor, political science will be the secular discipline whose relationship with theology provides a subject for philosophical enquiry.

The Catholic philosophical tradition is one of debate and constructive disagreement and the philosophers whom it will be possible to study in satisfying the requirements for this minor will include thinkers of very different standpoints: Augustine, Anselm, Aquinas, Pascal, Arnauld, Newman, Edith Stein and others. Because these thinkers have in common an allegiance to the Catholic faith, they agree in rejecting philosophical positions incompatible with that faith. But they also disagree with each other and in both cases what matters is the quality of their philosophical arguments.

The requirements of the minor are satisfied by taking 15 credit hours, beginning with Philosophy 30328, Body, Soul and the Image of God. Students have to take two appropriate courses in political science and one course on a major Catholic philosopher or set of Catholic philosophers, either in the Theology Department or in the Philosophy Department. No course can count both as satisfying one of the requirements of this minor and as satisfying one of the requirements of another minor. All students are required to take a capstone seminar in which the question of what part philosophy can play in the integration of the secular disciplines with theology will be addressed through discussion of texts and arguments encountered in earlier courses. Lists of philosophy, theology, and political science courses that will satisfy the requirements of the minor will be available each semester from the director. For further information, please contact the director, Prof. John O’Callaghan.

POVERTY STUDIES

(povertystudies.nd.edu)

Director: Jennifer Warlick
Co-Director: Connie Snyder Mick
Affiliated Faculty: Visit povertystudies.nd.edu/about/the-faculty/

The Poverty Studies Interdisciplinary Minor (PSIM) contributes to Notre Dame's mission by requiring its students to examine poverty, social injustice, and oppression from the perspectives of the social sciences, the humanities, sciences, and business.

PSIM explicitly recognizes the interconnected nature of the causes of poverty and the problems of low-income families and individuals, and provides a framework that assists students in making the links between the contributions of multiple and varied disciplines. It also helps students contextualize their personal interactions with low-income populations and the institutions that serve them, and make the connections between classroom lessons and real-world experiences.

PSIM is an appropriate supplement to every major at the University because it is designed to help students understand how their future civic activity and professional work—in almost any area—will invariably impinge on disadvantaged persons and communities.

Requirements. An interdisciplinary minor in Poverty Studies consists of 15 or 16 credit hours, including a required gateway course, experiential learning (service learning, community-based research, or immersion); elective coursework selected from a list of courses approved by the director on the advice of the affiliated faculty; and senior capstone seminar or special studies/thesis.

Gateway course (3 credits). The gateway course introduces students to academic research about the nature, causes, and consequences of poverty. Throughout, the readings and lectures reveal the collaboration across the various disciplines, the array of interlocking problems that lead to poverty, and guides the formulation of policies to prevent and alleviate poverty. Equal emphasis is given to poor citizens of the United States and developing nations.

Experiential learning (3 or 4 credits). The experiential learning requirement is designed to get students into the field where the concepts discussed in classrooms come to life and disciplinary boundaries are challenged. Experiential learning enhances a student's understanding of poverty and prepares students for the final capstone experience, whether it is the seminar or an independent research project. The experiential learning requirement may be satisfied by satisfactorily completing one of the following options:

- three designated 1-credit Center for Social Concerns seminars combined with PS 35001; or
- three credits of internship(s) with community agencies and organizations serving the poor; or
- one approved 3-credit community-based learning research course.

Three 1-credit seminars offered by the Center for Social Concerns. Participating in CSC seminars is a well-established tradition among Notre Dame students. PSIM students may satisfy the experiential learning requirements by bundling three Center for Social Concerns 1-credit experiential learning seminars with PS 35001. When choosing this option, students must take the Urban Plunge Seminar (THEO 33963/CSC 33963), the Appalachia Seminar (THEO 33950/CSC 33950), or another approved seminar.

Three 1-credit community-based research course/project. This requirement may be fulfilled during the academic year satisfactorily by completing a regularly scheduled course with a community-based research component, by participating in a summer service-learning project sponsored by the Center for Social Concerns, or by completing a Shepherd Program summer internship enhanced by the addition of an academic component similar to CSC’s summer service-learning courses.

Electives (6 credits). Two courses from the list of approved Poverty Studies minor electives. See http://povertystudies.nd.edu.

Capstone Experiences (3 credits). As the final step in the PSIM, students may choose either to enroll in the capstone seminar or to undertake a 3-credit special projects project directed by one of the affiliated faculty.

Capstone Seminar (3 credits). The capstone seminar is topic-oriented drawing on literature from multiple disciplines. The students will be from different majors and will share the perspectives of their major disciplines as well as their varied experiences in the field, thus ensuring the interdisciplinary nature of the inquiry. Experts with diverse perspectives and professional experiences will join the seminar as special guests.

Special studies capstone option (3 credits). Students may also opt for research or other intellectual experience by enrolling in special studies with one of the minor’s affiliated faculty. In this case, the students will produce a project (manuscript, work of art, composition, poster board display of research results, etc.) and will present this project to the members of PSIM at a special colloquium held in the spring semester of each academic year.
COURSE DESCRIPTIONS
All of the courses associated with this academic program can be found online at registrar.nd.edu/students/class_search.php. The scheduled classes for a given semester may be found by clicking on “Class Search” and selecting the subject of Poverty Studies, or by highlighting all of the course subjects simultaneously and selecting the “PSIM-Poverty Studies Elect.” course attribute. Course descriptions can be found by clicking on the subject code and course number in the search results.

SCIENCE, TECHNOLOGY, AND VALUES

Chair:
Anjan Chakravarty, Professor of Philosophy

Affiliated faculty:

Chairholders:
Michael J. Crowe, Program of Liberal Studies and History (concurrent); Rev. John J. Cavanaugh Chair (emeritus)
Katherine Bradin, William J. and Dorothy K. O’Neill Collegiate Professor of Philosophy, Department of Philosophy; Director, History and Philosophy of Science Graduate Program
Gerald McKenney, Walton Professor of Theology and Philosophy of Science Graduate Program

Professors:
Ani Aprahamian, Physics
Anjan Chakravarty, Philosophy
Celia Deane-Drummond, Theology
Michael DePaul, Philosophy
Dennis Doordan, Architecture
Christopher Fox, English
Eugene Halton, Sociology
Christopher Hamlin, History
Don Howard, Philosophy
Omar Lizardo, Sociology
Dian Murray, History (emeritus)
Thomas Schlereth, American Studies
John Sitter, English
Phillip Sloan, Program of Liberal Studies and History (concurrent; emeritus)

James Sterba, Philosophy
Laura Walls, English
Andrew Weigert, Sociology

Associate Professors:
Matthew Ashley, Theology
Christine Becker, Film, Television, and Theatre
Francesca Bordogna, PLS
Anne Coleman, American Studies
Jon T. Coleman, History
Janet Kourany, Philosophy
David Ladouceur, Classics
Linda Przyszewski, History
Maura Ryan, Theology
Vanita Smith-Oka, Anthropology
David Solomon, Philosophy
Leopold Stubenberg, Philosophy

Assistant Professors:
Jada Ben-Torres, Anthropology
Evan Ragland, History
Michelle Whaley, Biology, Teaching Professor

Science and technology are pivotal forces in modern society and play key roles in shaping cultural sensibilities in the modern world. Indeed, our technologies are reflected in our institutions, our work, our expectations, even in our moral problems. Science, Technology, and Values (STV) is an interdisciplinary minor within which faculty and students from a variety of disciplines and different colleges can reflectively explore the nature of science and technology as human enterprises, interacting in complex ways with our values and social institutions.

The program helps sponsor a wide range of cross-listed courses taught by faculty representing the humanities, the social sciences and the natural sciences. Students electing an STV minor can focus their work on areas of particular interest, such as science, technology and public policy; ethics, ecology and environment; medical ethics; ethical issues in science and technology; humanistic and social aspects of medicine; science and technology as cultural phenomena; history and philosophy of technology.

Students electing a minor in STV must take at least five courses (15 hours) from among those offered under the sponsorship of the STV program. These must include the core course (STV 20556), and one “foundational” course, a rotating sequence of courses, in addition to three freely chosen courses from among the following list of courses. Note that nearly all of the following courses are cross-listed in diverse departments, which means that students may formulate wide-ranging interdisciplinary perspectives on how science, technology and medicine intersect with society.

CORE COURSE
20556. Science, Technology and Society

FOUNDATIONAL COURSES
20235. Technology, Society & Ethics
29697. How Pharmaceuticals… Create Us
27997. Biology and Society in the Modern Era

CLUSTER ONE: HUMAN DIMENSIONS OF SCIENCE AND TECHNOLOGY
20103. Death and Dying
20115. Gender, Politics, and Evolution
20120. Alcohol and Drugs
20124. Memoirs of Madness
20125. Philosophy and Science Fiction
20134. The Technological American
20139. Minds, Brains, and Persons
20142. Architectural History II
20146. History of Communications Technologies
20149. Environmental Philosophy
20152. Visual America II
20154. Modern Physics and Moral Responsibility
20160. Literature and Ecology

20163. Science and Religion
20179. Science and Theology
20431. Philosophy and Cosmology: A Revolution
27997. Biology and Society in the Modern Era (Foundational Course)
30102. Foundations of Sociological Theory
30106. History of Economic Modern Thought
30107. American Intellectual History to 1870
30110. Health, Healing, and Culture
30113. Classical Origins of Medical Terminology
30121. History of the Medical Science
30126. Medicine & Public Health in U.S. History
30132. Environmental History
30138. American Frontiers
30142. History of Ancient Medicine
30146. History of Communication Technologies
30152. History of Western Medicine
30153. History of Psychiatry
30154. Gender and Science
30155. History of Photography to WWI
30157. Introduction to the Philosophy of Biology
34162. History of Science and Technology in Britain (taught in London only)
30174. American Wilderness
30175. Environmental History
30181. Science and Medicine in the Islamic World
30189. Philosophical Issues in Physics
30193. The Global Environment
30900. Foundations Sociological Theory
30902. Methods of Sociological Research
33195. Technology and Social Change
40111. Molecular Revolution
40112. Molecular Revolution in Biology
40113. Computer as Social Phenomenon
40118. Witchcraft and Occult 1400–1700
40119. Monsters, Cyborgs, and Other Created Bodies
40125. Gender and Health
40126. Philosophy of Cognitive Science
40130. Crime, Heredity, Insanity in the U.S.
40135. Philosophy of Science
40140. Science and Social Values
40144. Religion and Science
40147. History/Design: Form, Values, and Technology
40151. Psychology and Medicine
40152. History of Medicine to 1700
40153. Visits to Bedlam
40154. Cultural Aspects of Clinical Medicine
40155. Christ and Prometheus: Evaluation/Technology
40157. Philosophy of Biology
40166. History of Modern Astronomy
40167. Global Food Systems
40172. History of Chinese Medicine
40174. Philosophy and Psychiatry
40181. Philosophy of Human Biology
40186. Medicine in Modern History
40187. American Wilderness
40190. Media Industries
40194. Building America
40700. The Culture of Portable Media
43110. Sociology of Media, Technology & Society
43111. The Life and Works of Darwin
COURSE DESCRIPTIONS

All of the courses associated with this academic program can be found online at registrar.nd.edu/students/class_search.php. The scheduled classes for a given semester may be found by clicking on “Class Search” and selecting the subject Science, Technology and Values. Course descriptions can be found by clicking on the subject code and course number in the search results. The Science, Technology and Values courses for the most recent semester, as well as for past semesters may be found on the Science, Technology and Values website, at the following URL: http://reilly.nd.edu/science-technology-and-values/courses/

MINOR IN TEACHING ENGLISH TO SPEAKERS OF OTHER LANGUAGES

Director of Undergraduate Studies: Denise A. Ayo

The Minor in TESOL (Teaching English to Speakers of Other Languages) is an interdisciplinary minor designed to instruct students in the essential aspects of linguistics and language education while providing practical experience in classroom management and lesson planning. Courses in TESOL focus on understanding the components of language and the interrelationship between language and cultural attitudes, values, and practices. Students learn how to teach English by studying second language acquisition theories and teaching methodologies as well as through authentic classroom experiences.

A Minor in TESOL is excellent preparation for professions in teaching ESL/ESL (English as a Second/Foreign Language)—both within the United States and in other countries—as well as careers with government agencies and non-profit organizations in an international setting. In addition, it has particular value for students who want to pursue graduate work in education, applied linguistics, or theoretical linguistics as well as prospective Peace Corps volunteers, Teach for America applicants, and Fulbright English Teaching Assistants.

Language Requirement. To teach and understand the second language acquisition process, students need experience learning a second language. As such, the TESOL Minor requires its students to have completed 4 semesters of a second language through coursework and/or testing.

Coursework. TESOL courses are structured to give students both theoretical and practical grounding in TESOL. Students study linguistic and pedagogical theories as well as the practical how-tos of teaching.

Capstone Practicum. The TESOL Practicum gives students a chance to apply the knowledge that they have gained. Students log 30 hours of teaching and 15 of observation in an actual classroom setting, are observed and evaluated by TESOL professionals, and complete a teaching e-portfolio.

Required Courses (18 credit hours)
CSLC 20301 Introduction to Linguistics
Area Studies Minors

Program of Studies. The College of Arts and Letters offers its students the opportunity to pursue an interdisciplinary sequence of area studies minor that may supplement the major. Currently, there are minors in African Studies, Asian Studies, Irish Studies, Latin American Studies, Mediterranean/Middle East Studies, Russian and East European Studies and West European Studies.

The purpose of these minors is to assemble the courses dealing with the language, literature, history, politics, anthropology, philosophy, sociology and economics of each area. In this way a meaningful course structure is available to students who wish to concentrate their scholarly interest upon a cultural or geographical area as well as upon an interdisciplinary approach. Such programs can be especially useful to students who plan a career in international business, international organizations or government service or who intend to do graduate work in one of these areas.

The student who wishes to complete one of the area studies minors is required to take at least four area studies courses (12 hours) distributed over three different departments. These courses must be taken in addition to those required for the major. The student must also take courses in a language of the area being studied (Russian or an East European language for the Russian Studies program; Spanish or Portuguese for the Latin American Studies program; French, German or Italian for the West European Studies program; a Mediterranean language for the Mediterranean/Middle East Studies program; Irish for the Irish Studies program; and an Asian language for the Asian Studies program). In most cases the required number of courses will be equivalent to those required to satisfy the arts and letters language requirement, but students should check with program directors for the specific requirements of a given area. While not required to take additional language instruction for the African Studies program, students who plan to continue their African interest at the graduate level are encouraged to develop a competency in Swahili, French, Portuguese, or Arabic. In the senior year, each student must submit a satisfactory essay based upon research that combines the major discipline with the area studies curriculum.

Students interested in an area studies minor should consult the director (listed below).

ASIAN STUDIES

Director:
Michel Hockx
Assistant Director, DUS:
Patrick Deegan

The program in Asian Studies introduces students to the complexity and influence of Asia and its diaspora. Students select courses in a wide variety of fields, such as anthropology, East Asian languages and cultures, economics, film, television, and theatre, history, political science, and psychology. The Liu Institute for Asia and Asian Studies also provides enriching activities such as lectures, films, gatherings, and grant opportunities to students interested in Asia.

Students with the supplementary major or the minor in Asian Studies will be very desirable employees of international business or accounting firms, nongovernmental organizations, and service organizations. They will be well prepared for graduate school in a discipline, or for a professional school such as law or business. The supplementary major and the minor in Asian Studies provide recognition of students’ training in this significant region of the world.

THE MINOR IN ASIAN STUDIES

Students who are contemplating graduate study in a particular area of the world or a career in international business or government—as well as those who are generally interested in the region—are well served by the minor in Asian Studies. It provides a well-rounded introduction to the world’s most populous continent. The minor in Asian Studies is a very appropriate accompaniment to majors in anthropology, East Asian languages and cultures, history, political science, economics, or other arts and letters departments. It is also suitable for students in the Mendoza College of Business.

Students should meet with the director of undergraduate studies (DUS) as early as possible in their academic career in order to plan their courses. They should also meet with the DUS each semester to select approved courses.

Requirements for the Minor:

Asia-related courses fulfilling each of the following: (Total of 15 credit hours)

- Four courses from at least three different disciplines (history, literature/culture, humanities, social sciences; may include up to one language course) (12 credit hours)
- One upper-level course taken during the senior year that culminates in a capstone essay (3 credit hours)

COURSE DESCRIPTIONS

All of the courses associated with this academic program can be found online at registrar.nd.edu/students/class_search.php. The scheduled classes for a given semester may be found by clicking on “Class Search” and selecting the subject Asian Studies. Course descriptions can be found by clicking on the subject code and course number in the search results.

The Minor in European Studies

Director:
A. James McAdams

The Nanovic Institute for European Studies

Stretching from the Atlantic Ocean to the Ural Mountains, Europe plays a critical role in global affairs. The ongoing expansion of the European Union is helping to unite many countries and people in a traditionally diverse region. As future leaders, Notre Dame students need to know about European history, politics and culture in order to succeed in the contemporary world.

The Nanovic Institute for European Studies is committed to enriching the intellectual culture of Notre Dame by creating an integrated, interdisciplinary home for students and faculty to explore the evolving ideas, cultures, beliefs, and institutions that shape Europe today.

The Minor

Administered by the Nanovic Institute, the Minor in European Studies (MES) allows students to explore topics of interest and relevance in the field of European Studies. Through both coursework and independent study, students will examine the politics, history, and culture of Europe.

The program has three component requirements:

- completion of three upper-division courses from two different departments in approved areas of European Studies
- one semester of European language study beyond the College of Arts and Letters requirement (note: this applies to students in all colleges)
- a capstone thesis essay on a topic within European Studies, to be completed during the senior year

Other Undergraduate Support

The Nanovic Institute also administers a wide range of undergraduate grant programs. European Studies minors and other undergraduates wishing to travel to Europe to conduct research, carry out internships or service projects, or to complete other academic initiatives are encouraged to apply for support.

For more information, interested students should consult the institute’s website at nanovic.nd.edu.
IRISH STUDIES

Director:
Christopher Fox

The Keough-Naughton Institute for Irish Studies provides students with a unique opportunity to explore Ireland’s extraordinary tradition in literature (in both the English and Irish languages) and distinctive historical development, including its influence on the history of the United States. The Irish Studies faculty includes leaders in several fields, including English, history, film, television, and theatre, anthropology, American studies, marketing, politics, psychology, medieval studies, classics and Irish language and literature. The Irish Studies Program also organizes a calendar of intellectual and cultural activities in which undergraduates are encouraged to participate; visitors to campus have included Seamus Heaney and John Hume, both Nobel Prize winners, and other leading Irish writers and public figures, including Mary McAleese, two-term president of Ireland.

Minor

The core of the program is a minor in Irish Studies. The minor helps students develop their understanding of Irish society, culture, and politics through both course work and firsthand experience of Ireland. To qualify for the minor, students must (a) demonstrate proficiency in Irish language (by taking IRST 10101, 10102, and 20103); (b) complete four three-credit Irish Studies courses; (c) and, under the supervision of a professor, write a capstone essay in their senior year that links the minor with their major. To complete the capstone essay students must enroll in the fall or spring semester of their senior year in a 3 credit course, AL 48006. All qualifying courses are listed in the Schedule of Classes under IRST; the list is available each semester from 422 Flanner Hall.

Dublin Program

The home of the Dublin program is the Keough Naughton Notre Dame Centre in O’Connell House in the historic heart of Ireland’s capital. Each semester, roughly 35 Notre Dame students enroll for courses in the Centre and at Trinity College Dublin, University College Dublin, and the National College of Art and Design. The program includes several field trips and a variety of social and cultural activities. Students taking the minor in Irish Studies have a distinct advantage when applying for this highly competitive program.

Irish Internships

The Keough-Naughton Institute for Irish Studies annually awards Keough Irish Internships, which place undergraduates in internship positions in Dublin relating to Irish politics and commerce, culture, and society. In the past, students have been placed in the Irish parliament, government departments, the Irish Film Centre, and various social service organizations. Most internships last for a period of seven weeks.

For further information, students should consult Prof. Christopher Fox, director; telephone 631-3555.

COURSE DESCRIPTIONS

All of the courses associated with this academic program can be found online at registrar.nd.edu/students/class_search.php. The scheduled classes for a given semester may be found by clicking on “Class Search” and selecting the subject Irish Studies. Course descriptions can be found by clicking on the subject code and course number in the search results.

LATIN AMERICAN STUDIES PROGRAM

Acting Director:
Holly Rivers

This program promotes opportunities for students to deepen their understanding of the region through a variety of courses, campus activities, internships, and firsthand overseas learning experiences. Through the Kellogg Institute, the program offers a calendar of cultural events, summer research and internship grants, current affairs panels and regular talks on Latin America by Notre Dame faculty and visiting lecturers. In addition, the institute brings several visiting fellows each semester who are from Latin America or who specialize in the region; these fellows visit classes and meet with students.

The core of the program is a minor in Latin American Studies. The minor aims to give students well-rounded training that complements their major area of study and to make this training easily recognized on a graduating student’s transcript. To qualify for the minor, students must demonstrate proficiency in Spanish or Portuguese (through two courses at the University or advanced placement), and complete four courses on Latin America that are distributed across at least three departments. During the senior year, students are required to complete high quality research through a senior essay. Students writing a senior thesis in their major department with a focus on Latin America may opt to take a fifth course in lieu of the essay.

Qualifying courses are listed each semester in the Schedule of Classes under LAST. They include courses such as Contemporary Latin American History, Economic Development of Latin America, Latin American Politics, Liberation Theology, Sociology of Development, and Spanish-American and Brazilian Literature. The program offers the John J. Kennedy Prize annually for an outstanding senior essay dealing with a Latin American topic. The summer research grants are offered through Kellogg to students after their junior year to encourage undergraduates to undertake original research on international subjects. The summer internships aim to provide undergraduates real-world experience in dealing with Latin American issues. The summer fellowships offer freshmen and sophomores the opportunity to engage in initial exploratory projects in Latin America. For more complete information about courses that qualify each semester for the minor degree, the calendar of events or the summer research and internship competitions, please consult the LASP Web page at kellogg.nd.edu/students/lasp, or contact Holly Rivers at hrivers@nd.edu.

COURSE DESCRIPTIONS

All of the courses associated with this academic program can be found online at registrar.nd.edu/students/class_search.php. The scheduled classes for a given semester may be found by clicking on “Class Search” and selecting the subject Latin American Studies. Course descriptions can be found by clicking on the subject code and course number in the search results.

RUSSIAN AND EAST EUROPEAN STUDIES

For a description of the supplementary major and minor in Russian and East European Studies, please see THE RUSSIAN PROGRAM under the Department of German and Russian Languages and Literatures, page 71.
# Officers of the Administration

<table>
<thead>
<tr>
<th>Name</th>
<th>Title/Position</th>
</tr>
</thead>
<tbody>
<tr>
<td>JOHN T. McGreevy, Ph.D.</td>
<td>I.A. O'Shaughnessy, Dean of the College of Arts and Letters</td>
</tr>
<tr>
<td>MARGARET MESERVE, Ph.D.</td>
<td>Associate Dean of the College of Arts and Letters</td>
</tr>
<tr>
<td>JOANN DELLANEVA, Ph.D.</td>
<td>Associate Dean of the College of Arts and Letters</td>
</tr>
<tr>
<td>JAMES BROCKMOLE, Ph.D.</td>
<td>Associate Dean of the College of Arts and Letters</td>
</tr>
<tr>
<td>PETER HOLLAND, Ph.D.</td>
<td>Associate Dean of the College of Arts and Letters</td>
</tr>
<tr>
<td>COLLIN MEISSNER, Ph.D.</td>
<td>Assistant Dean of the College of Arts and Letters</td>
</tr>
<tr>
<td>AVA PREACHER, M.A., ABD</td>
<td>Assistant Dean of the College of Arts and Letters, Pre-Law Advisor</td>
</tr>
<tr>
<td>NICHOLAS RUSSO, Ph.D.</td>
<td>Assistant Dean of the College of Arts and Letters</td>
</tr>
<tr>
<td>JOSEPH STANFIEL, Ph.D.</td>
<td>Assistant Dean of the College of Arts and Letters</td>
</tr>
<tr>
<td>VICKI DOUILLET TOUMAYAN, Ph.D.</td>
<td>Assistant Dean of the College of Arts and Letters, Pre-Medical Advisor</td>
</tr>
<tr>
<td>LEON GE (Acting 2016–17), Ph.D.</td>
<td>Chair of East Asian Languages &amp; Cultures</td>
</tr>
<tr>
<td>DIANNE PINDERHUGHES, Ph.D.</td>
<td>Chair of the Department of Africana Studies</td>
</tr>
<tr>
<td>THOMAS TWEED, Ph.D.</td>
<td>Chair of the Department of American Studies</td>
</tr>
<tr>
<td>AUGUSTIN FUENTES, Ph.D.</td>
<td>Chair of the Department of Anthropology</td>
</tr>
<tr>
<td>RICHARD GRAY, MFA</td>
<td>Chair of the Department of Art, Art History, and Design</td>
</tr>
<tr>
<td>BRIAN KROSTENKO, Ph.D.</td>
<td>Chair of the Department of Classics</td>
</tr>
<tr>
<td>WILLIAM EVANS, Ph.D.</td>
<td>Chair of the Department of Economics</td>
</tr>
<tr>
<td>JESSE LANDER, Ph.D.</td>
<td>Chair of the Department of English</td>
</tr>
<tr>
<td>JAMES COLLINS, Ph.D.</td>
<td>Chair of the Department of Film, Television, and Theatre</td>
</tr>
<tr>
<td>WILLIAM DONAHUE, Ph.D.</td>
<td>Chair of the Department of German and Russian Languages and Literatures</td>
</tr>
<tr>
<td>PATRICK GRIFFIN, Ph.D.</td>
<td>Chair of the Department of History</td>
</tr>
<tr>
<td>SARAH McKIBBEN (Acting 2016–17), Ph.D.</td>
<td>Chair of the Department of Irish Language and Literature</td>
</tr>
<tr>
<td>JEFF SPEAKS, Ph.D.</td>
<td>Chair of the Department of Philosophy</td>
</tr>
<tr>
<td>DAVID CAMPBELL, Ph.D.</td>
<td>Chair of the Department of Political Science</td>
</tr>
<tr>
<td>TOM STAPLEFORD, Ph.D.</td>
<td>Chair of the Program of Liberal Studies</td>
</tr>
<tr>
<td>LEE ANNA CLARK, Ph.D.</td>
<td>Chair of the Department of Psychology</td>
</tr>
<tr>
<td>THOMAS ANDERSON, Ph.D.</td>
<td>Chair of the Department of Romance Languages and Literatures</td>
</tr>
<tr>
<td>SARAH MUSTILLO, Ph.D.</td>
<td>Chair of the Department of Sociology</td>
</tr>
<tr>
<td>MATTHEW ASHLEY, Ph.D.</td>
<td>Chair of the Department of Theology</td>
</tr>
</tbody>
</table>
Advisory Council

HUGH T. ANDREWS
Kansas City, Missouri

FRANK J. ANNESE
Saratoga Springs, New York and Naples, Florida

ROBERT L. BERNER JR.
Winnetka, Illinois

RAYMOND B. BIAGINI
Chevy Chase, Maryland

DAVID L. BOEHNEN
St. Paul, Minnesota

RAYMOND J. BON ANNO
Denver, Colorado

GEORGE W. BOTT JR.
Hamlin, New York

OLEVA D. BOYKIN
New Haven, Connecticut

BRIAN R. BRADY
Elkhart, Indiana and Naples, Florida

BRUCE A. BROILLET
Los Angeles, California

RODULF L. BRUTOCO
San Juan Capistrano, California

JEROME A. CASTELLINI
Winnetka, Illinois

CHRISTOPHER WAI-CHEE CHENG
Kowloon, Hong Kong

ANN L. COMBS
St. Davids, Pennsylvania

MARTIN CREGG
Skaneateles, New York

MATTHEW S. CULLINAN
Winston Salem, North Carolina

WILLIAM J. DEVERS JR.
Wilmette, Illinois

MEGAN MCCLAIN DUFFY
New York, New York

DAVID R. DUNCAN
Oakville, California

MARY JO DUNLAP
Pittsburgh, Pennsylvania

DANIEL K. FLATLEY
New Vernon, New Jersey

DAVID S. GLYNN
San Francisco, California

ROBERT N. GRECO
Spokane, Washington

JAMES D. GUERRA
Kenilworth, Illinois

JANE HAGALE
Houston, Texas

THOMAS J. HEIDEN
Chicago, Illinois

GEOFFREY P. HUNT
Ipswich, Massachusetts

WILLIAM P. JOHNSON
Goshen, Indiana

ELIZABETH W. KEEGAN
New York, New York

JOHN E. KELLY
Glen Ridge, New Jersey

WILLIAM J. KENNEDY
London, UK

B. ROBERT KILL
South Bend, Indiana

EDWARD D. LEWIS
West Palm Beach, Florida

EARL L. LINEHAN
Baltimore, Maryland and Naples, Florida

JUSTIN R. LIU
Hermosa Beach, California

F. JOSEPH LOUGHREY
Indianapolis, Indiana

JOHN R. MADDEN
LaGrange, Illinois

ROBERT D. MAROTTA
Columbus, Ohio

JOHN J. McMACKIN
Chevy Chase, Connecticut

JOHN P. MCMEEL
Kansas City, Missouri

ROBERT A. MOHR JR.
Dallas, Texas

PATRICK J. MORAN
Houston, Texas

CHRISTOPHER J. MURPHY III
South Bend, Indiana

ROBERT P. QUINN
North Palm Beach, Florida and Quogue, New York

ROBERT E. RASMUS JR.
Houston, Texas and Winnetka, Illinois

MIRELLA RAVARINO
St. Louis, Missouri

MARY ANNE REILLY
Tampa, Florida and St. Petersburg, Florida

J. PATRICK ROGERS
Cincinnati, Ohio

KATHLEEN D. ROONEY
Washington, DC

TODD F. SCHURZ
South Bend, Indiana

JULIA J. SCHWARTZ
Granger, Indiana

DAVID F. SENG
Dahlonega, Georgia

CHARLES E. SHEEDY
Houston, Texas

MARGARET SHIELDS
Wyomissing, Pennsylvania

MARK S. SHIELDS
Chevy Chase, Maryland

CHRISTOPHER D. STENT
Hinsdale, Illinois

F. QUINN STEPAN
Winnetka, Illinois

CATHLEEN U. STOCK
Stamford, Connecticut

GEORGE W. STRAKE JR.
Houston, Texas

KELLEY J. TUTHILL
Wellesley, Massachusetts

STACEY M. YUSKO
Chapel Hill, North Carolina
Mendoza College of Business

The Mendoza College of Business, an accredited member of the AACSB—Association to Advance Collegiate Schools of Business—was established in 1921.

Notre Dame’s business school is noted for challenging its students to “Ask More of Business,” by placing individual integrity at the heart of every decision, by tackling tough problems and building effective organizations, and by harnessing the power of business to serve the greater good of the global community.

The undergraduate student body of the college is made up of sophomores, juniors, and seniors. Students who are accepted into the Mendoza College of Business through the admissions process (page 21) and successfully complete the requirements of the First Year of Studies are admitted to the college at the beginning of sophomore year.

Programs of Study

At the Mendoza College of Business, students should expect challenging academic coursework, an excellent faculty, and many opportunities to interact with corporate executives and industry experts who can immerse them in the realities of today’s business world.

A holistic approach to business education springs from the deepest root of Notre Dame and radiates throughout the curriculum. Education involves more than developing just specialized skills, it involves teaching every student to recognize a role of service to the human community.

The business education program at Notre Dame seeks to expand learning beyond traditional silos and to integrate knowledge across business disciplines, in order to promote critical thought. Students develop the broader perspective they will need to lead in a complex, global economy.

The business world has always required people with initiative, a willingness to take risks and the stamina to thrive in a competitive world. To meet demands for new and better goods and services, leaders must manage operations which are extensive and multifaceted. The business leader whose job it is to put the work of many specialized people together into a smooth-working whole has traditionally developed business skills by rather accidental means: by knowing instinctively, by learning from experience, or by building upon some specialized body of knowledge.

The purpose of the business program is to focus attention directly on the skills and knowledge required by a leader today. The work is especially appropriate at Notre Dame. The responsibility of each business to its employees, customers, suppliers, owners, and the common good is being recognized and studied with growing intensity.

This responsibility raises ethical issues to which Notre Dame and its graduates should respond in a sound and practical way. The continuing effort to improve the practical application of ethical principles to competent performance in leadership roles is a prime concern of the Mendoza College of Business.

In light of the responsibility of the Mendoza College of Business for guiding students toward a liberal education in the Christian tradition and toward future responsibilities as business administrators, the following mission statement has been formulated:

The mission of the Mendoza College of Business is to build a premier Catholic business school that fosters academic excellence, professional effectiveness and personal accountability in a context that strives to be faithful to the ideals of community, human development and individual integrity.

Learning Objectives. The educational objective of the undergraduate program in the Mendoza College of Business is to assist and guide students in preparation for lifelong learning, for effective citizenship and for professional careers as competent and ethical participants in business, government, and other complex organizations. This is accomplished by educating students in the professional area of business while remaining true to the scholarly, liberalizing, and Catholic mission of the college and the University.

The Mendoza College of Business has established the following program learning objectives in support of this mission and objective:

• Competence to analyze and evaluate business opportunities and challenges.
  – Students will evaluate strategies and formulate plans to realize business opportunities.
  – Students will recognize business problems, gather and analyze relevant evidence, and reach and articulate informed solutions.
  – Students will incorporate cross-border information, risks and opportunities in decision-making.

• Professional and interpersonal skills. Students will produce professional quality business documents, deliver professional quality presentations, and work collaboratively.

• Proficiency in using information technology. Students will utilize current information/communication technology.

• Expertise within an academic major. Students will demonstrate an understanding of the concepts, analytical tools, and technical skills within a discipline.

• Ability to integrate ethics into decision making. Students will apply ethical frameworks to business decisions.

The Program. The educational activities of a university and a college are broader than the mere teaching of courses. Nevertheless, one of the main expressions of an educational plan is its program of instruction. Several features of the program itself and certain fundamental concepts on which it is based deserve special comment.

The college recognizes four distinguishable but interrelated types of education to which future business leaders should be exposed: (1) study in the fields traditionally called liberal arts; (2) a basic understanding of the operation of a business enterprise; (3) an understanding of the economic and legal climate or atmosphere in which business functions and of which business is a part; (4) a professional concentration in a major for the student's in-depth educational pursuit, which will also provide some preparation for future employment.

The curriculum of the three-year business program combined with that of the First Year of Studies requires approximately one-half of the instruction to be in traditional liberal studies. These courses are provided by the College of Arts and Letters and the College of Science.

Upon entering the Mendoza College of Business at the beginning of the sophomore year, the student registers for a program which introduces the basic tools of business and the functions of accounting, information systems, financial management, management, business statistics, marketing, business law, and ethics.

In the junior and senior years the student continues his or her studies using the analytical tools developed in the sophomore year. The student enters into a consideration of the operation of the business firm and the economic and legal climate of business. The examination of the economic climate in which business must operate is concerned with the fundamentals of money and banking, the role of the federal government in terms of its fiscal and monetary policies, and the concepts of national income accounting that afford a basis for measuring and forecasting economic change. A student gives emphasis to his or her major and may either add to minimum major requirements or elect other course areas for study.
Curriculum for the Degree of Bachelor of Business Administration

The college stands ready to accept students who are admitted to Mendoza and have successfully completed the course requirements of the First Year of Studies (FYS) at Notre Dame as outlined in the University Requirements and FYS sections of this Bulletin. In addition to the general FYS requirements, Mendoza College of Business student intentions should also complete the following specific courses during the FYS:

- Calculus
- Statistics for Business
- Principles of Microeconomics

During the sophomore year, a College of Business student is expected to complete the following minimum business courses:

- Principles of Accountancy I and II
- Corporate Financial Management
- Principles of Marketing
- Principles of Management
- Business Law
- Statistical Inference in Business
- IT Management Applications
- Intro to Business Ethics

The sequence of completion of courses will vary according to the availability of courses.

The BBA degree requires a total of 128 credits. Of these credit hours, a student has up to 8–11 free elective courses. Consequently, a student has considerable flexibility in selecting courses that meet his or her particular academic and career plans. Students in the Mendoza College of Business will declare a major in one of the following majors: accountancy, finance, management, and university issues. The department offices of the business major departments; however, Room 101 advisors for juniors and seniors is available from their respective major departments; however, Room 101 advisors will continue to provide general advice on college and university issues. The department offices of the college, i.e. accountancy, finance, management, and marketing, are located in Room 102 of the Mendoza College of Business. In addition to the University pre-law advisor, Mendoza College offers pre-law advising to current undergraduate business students.

Normal semester course load for sophomores is 11 credits. Normally, a cumulative and recent term grade point average of 3.4 or higher is required to obtain permission to carry an overload. Interested students should contact the Office of Undergraduate Studies for specific information.

Students may elect to fill free elective or non-business elective requirements to include 1-, 1.5-, or 2-credit-hour courses, AP credit, or Credit by Exam. The college accepts a maximum of 32 credits through AP, including no more than six credits through AP and/or credit by exam in any one language, toward degree-seeking credits.

To be eligible for the BBA degree, students must complete a minimum of 64 credits at Notre Dame. A graduate from the college must have at least a 2.0 cumulative GPA and have accumulated a minimum number of credit hours in the following areas:

- Writing and Rhetoric
- Mathematics (Calculus and Intro Statistics)\d
- Science
- History
- Social Science\f
- Liberal Arts (excluding Economics)*
- Literature* or Fine Arts*
- Philosophy*
- Theology*
- Principles of Microeconomics
- Accountancy I and II
- Corporate Financial Management
- Principles of Marketing
- Principles of Management
- Statistical Inference in Business
- IT Management Applications
- Business Law
- Introduction to Business Ethics
- Macroeconomic Analysis
- Managerial Economics
- Strategic Management
- Introduction to Process Analytics
- Foresight in Business and Society
- Major courses**
- Non-business electives
- Free electives
- Moreau First Year Experience

To be eligible for the BBA degree, students must complete a minimum of 64 credits at Notre Dame. A graduate from the college must have at least a 2.0 cumulative GPA and have accumulated a minimum number of credit hours in the following areas:

- Writing and Rhetoric
- Mathematics (Calculus and Intro Statistics)\d
- Science
- History
- Social Science\f
- Liberal Arts (excluding Economics)*
- Literature* or Fine Arts*
- Philosophy*
- Theology*
- Principles of Microeconomics
- Accountancy I and II
- Corporate Financial Management
- Principles of Marketing
- Principles of Management
- Statistical Inference in Business
- IT Management Applications
- Business Law
- Introduction to Business Ethics
- Macroeconomic Analysis
- Managerial Economics
- Strategic Management
- Introduction to Process Analytics
- Foresight in Business and Society
- Major courses**
- Non-business electives
- Free electives
- Moreau First Year Experience

Additional information on selection criteria can be found on the Mendoza website.

To Table of Contents
coursework, designed to support an area of research or study that is of mutual interest to a faculty member and a student. These courses contain advanced objectives beyond those covered in regularly scheduled courses—not introductory material or material taken from the popular literature that should more properly be considered “self-improvement” than academic in nature. A directed reading/special studies course will not satisfy a University, College, or major requirement. Directed readings or special studies outside of a student’s major in business may count as free elective or non-business elective credit only. A student may register for no more than three credit hours of directed readings or special studies in any given semester. No more than a maximum of nine directed reading or special studies credit hours may be applied toward the 128-credit-hour BBA degree requirements.

Study Abroad

Students from any of the majors in the Mendoza College of Business may participate in study abroad programs.

For more than a decade, Notre Dame has made it possible for students to earn credits toward graduation in study abroad programs. Travel, direct personal experience of another language and culture, and study in another tradition all broaden and deepen the liberal education of the whole person, to which the University has always been committed.

Qualified undergraduates can spend all or part of their sophomore or junior year in such places as Angers, France; Berlin, Germany; Dublin, Ireland; London, England; Fremantle, Australia; Rome, Italy; Monterrey and Puebla, Mexico; Nagoya and Tokyo, Japan; Santiago, Chile; Salvador da Bahia and São Paulo, Brazil; Beijing, Hong Kong and Shanghai, China; Toledo, Spain; Cairo, Egypt; and Athens, Greece. New program locations are periodically added.

A new international study program for Mendoza undergraduates, Global Business Scholars, will assemble a cohort of students from the Mendoza College of Business, Bocconi University in Milan, Italy and National University of Singapore who will enroll in coursework at all three universities over the course of three consecutive semesters. This is a unique opportunity to study at two of the world’s top universities in two different regions of the world. Business students who are interested in this program will be invited to apply in the fall of their freshman year. Global Business Scholars will study in Milan in the spring of sophomore year and Singapore in the spring of junior year.

For further information and advice on international study, students of the Mendoza College of Business may contact the Office of Undergraduate Studies, Room 101 Mendoza College of Business, and/or the director of the Study Abroad Programs, 105 Main Building.

Collegiate Sequence in International Business

The Collegiate Sequence in International Business consists of courses which offer Mendoza College undergraduates a broad exposure to the global nature of the world of business. Completion of the program is acknowledged with an International Business Certificate at graduation. While not a major or minor, this program enriches the student’s academic preparedness to take advantage of the multitude of opportunities and challenges awaiting them. The International Business Certificate substantiates a student’s acquisition of knowledge and perspective in the varying aspects of our ever-evolving global economy. The multi-disciplinary aspect of the course selections enhances the student’s ability to communicate and engage in the international arena with a greater appreciation of diverse commerce, cultural and social contexts.

Since its introduction, an increasing number of students have earned the International Business Certificate each year. While a semester or summer of international study is encouraged and may be helpful in completing the certificate requirements, the certificate may be earned by taking courses on the main campus.

A total of five courses and fifteen credits are required from among a variety of offerings from the Mendoza College of Business, the College of Arts and Letters and other national and international institutions: one course (3 credits) must be in a foreign language at the intermediate level with the LANG attribute; two courses (6 credits) must be selected from among the international business course offerings with the IBC Business (IBCB) attribute; and the remaining two courses (6 credits) must be selected from among contemporary international liberal arts courses with the IBC Liberal Arts (IBCL) attribute or from courses with the IBCB attribute. Neither AP graded courses nor courses graded Pass/Fail or Satisfactory/ Unsatisfactory will count towards the International Business Certificate.

Students must indicate their intention to complete the program via the Mendoza College of Business website no later than the end of their junior year. Once a student’s intent to pursue the Collegiate Sequence in International Business has been indicated, the Graduation Process System will include an International Business Certificate section so as to assist in tracking progress toward completion of the requirements.

Courses for the International Business Certificate may not be taken on a pass/fail basis. Courses may “double count”—e.g., HIST 304/32, Irish History Since 1800, would qualify as a contemporary liberal arts requirement for the certificate and would also satisfy the history requirement for graduation.

For more information, contact the Mendoza College of Business Office of Undergraduate Studies.

Student Awards and Prizes

The Dean’s Award. This award is given to the graduate whose leadership has contributed most significantly to the progress of the college.

The Hamilton Awards. Founded by Robert L. Hamilton ’34, Racine, Wis., these awards are given to the outstanding senior in each of the four departments of the college.

The Herman Crown Award for Outstanding Achievement in Finance. An annual award made by the Department of Finance in memory of the late Herman Crown and given to the senior finance major with the highest overall grade point average.

Raymond P. Kent Award. An annual award given to a senior finance major for outstanding performance in finance classes.

Paul E. Conway Award. An annual award given to a senior in the Department of Finance who embodies the characteristics that define our tradition of excellence: a person of keen intellect who enriches the ideals of Notre Dame.

LeClair Eells Award. An annual award given to a senior in the Department of Finance for outstanding leadership.

Department of Finance Outstanding Service Award. Given to a senior in the Department of Finance for rendering outstanding service to the department.

Paul D. Gilbert Award for Leadership. An annual award given to a marketing senior for overall leadership in extracurricular departmental activities. The recipient is selected by the faculty of the Department of Marketing. The award is named for the late Paul D. Gilbert, a local business executive, civic leader, and longtime friend of the department.

Wesley C. Bender Award for Outstanding Performance in Marketing. An annual award given to the senior marketing major with the highest grade point average in marketing courses. The award is named for the first chairman of the Department of Marketing, Wesley C. Bender.

John R. Malone Award. An annual award given to the junior marketing major with the highest overall grade point average.

Robert M. Satterfield Award. Given to a marketing student for bringing enthusiasm, integrity, and a spirit of teamwork to the classroom.

David A. Appel Award. Given to a marketing student for exemplary service contributions.

Tanya K. Deutsch Award. An annual award given to an accountancy senior who has shown exemplary social consciousness and devotion to efforts to give hope to the less fortunate.

Accountancy Chairman Award. An annual award provided to an accountancy senior who demonstrates...
outstanding service to the Department of Accountancy.

The Accountancy Faculty Award. This award recognizes an outstanding senior in the Department of Accountancy in the Mendoza College of Business. It is given to an outstanding senior with one of the highest cumulative grade point averages.

Accountancy Excellence Awards. Given annually to up to 25 sophomores who declare accountancy as their major and have demonstrated outstanding economic achievement. The awards are funded by annual gifts from Deloitte, Ernst & Young, KPMG, and PricewaterhouseCoopers.

Crowe Horwath LLP Outstanding Accounting Student Scholarship Award. This award is designed to assist a junior entering their senior year. The criteria for the award are exhibited leadership skills and achievement of accountancy and overall GPAs of 3.3.

Peter Brady Award. Established to honor past faculty member Peter Brady, this award is given in recognition of outstanding academic performance.

Elmer Layden Awards. Given annually to graduating accountancy seniors in recognition of academic achievement. The awards are funded by the Elmer Layden Jr. Endowed Fund.

Brother Cyprian Awards. Given annually to graduating accountancy seniors in recognition of academic achievement. The awards are granted in honor of Holy Cross Brother Cyprian O’Hare (“Brother Zip”), who helped to launch Notre Dame’s accountancy education program in 1895 and later served as department chair.

James Dincolo Awards. Given annually to graduating seniors in each major in recognition of academic achievement. The awards honor former accountancy professor James Dincolo and are funded by an endowment in his name.

The Indiana Certified Public Accountants Society Award. Founded in 1950 by the board of directors of the Indiana Association of Certified Public Accountants, this annual award provides a plaque to an outstanding senior in accountancy.

The Management Award. Given to the outstanding ITM senior in the Department of Management.

The Justin Harris Brehmbaugh Memorial Award. Given annually to the graduating ITM major who has excelled academically and has been selected by the graduating seniors as best representing the unique and enduring spirit of Notre Dame.

Eugene D. Fanning Award. Given to a senior man and woman who demonstrate exceptional achievement in business communication; excellence in writing, speaking, listening, and interpersonal communication; and who demonstrate leadership potential, initiative, integrity, and respect for the dignity and rights of others.

The Charles G. Morrow Award for Business Excellence. This award was established by the five children of the late Charles G. Morrow, Class of 1938, in honor of his contributions to Notre Dame and the business community. Given to a graduating senior in the Mendoza College of Business, this award recognizes business excellence through documented service, leadership, and personal integrity.

Yasuaku Furushashi Award, in honor of an esteemed colleague who was a pioneer in the area of international marketing. The award will be given on a calendar year basis to a student who, in the estimation of the faculty, writes the best essay capturing the marketing insights gained by the semester abroad experience. The winner each year may be either a junior or senior, depending upon the dates spent overseas.

Business Oriented Student Organizations and Activities

Students’ academic organizations are supported and encouraged by the administration and the faculty. These associations are actively managed by student officers. Members of the faculty serve in advisory capacities.

Honorary Societies.

Beta Gamma Sigma. Notre Dame shares with selected colleges of business nationwide this honorary society’s stated purposes of encouraging scholarship and achievement among business administration majors. It promotes education in business administration and fosters integrity in the conduct of business. Undergraduate membership in this organization is restricted to the upper 10 percent or less of the senior class and the upper 5 percent or less of the junior class for all full-time students. Faculty membership is limited to those with tenure in the Mendoza College of Business at Notre Dame.

Beta Alpha Psi. Accountancy majors who have demonstrated outstanding scholastic ability and the personal characteristics requisite to professional status are eligible for membership in the Beta Sigma chapter of Beta Alpha Psi, the national professional and honorary accounting society. The purposes of this society are to encourage and foster the ideal of service as the basis of the accounting profession; to promote the study of accountancy and its highest ethical standards; to act as a medium between professional persons, instructors, students and others who are interested in the development of the study or profession of accountancy; to develop high moral, ethical, and professional attainments in its members; and to encourage cordial interaction among its members and the profession generally.

Association of Latino Professionals in Finance and Accounting (ALPFA). ALPFA is the premier business organization for expanding opportunities for Latino leadership in the global market. At Notre Dame this organization is designed to provide networking, career building, and leadership opportunities to diverse students who intend to major in accountancy, finance or information technology management. ALPFA also provides scholarships, internships and other career advancing opportunities to diverse students.

National Association of Black Accountants (NABA). The Student Chapter of NABA of Notre Dame shall unite through membership accounting students who have similar interests and ideals, are committed to academic and future professional excellence, have a sense of professional and civic responsibility, and are concerned with enhancing opportunities for minorities in the accounting profession.

Finance Club of Notre Dame du Lac. The Finance Club strives to educate students about different career paths in finance and to help them prepare for a career in finance. The club provides members with education on job options, interview prep courses, and networking opportunities with alumni, employers, and current students in the field.

Investment Club of Notre Dame du Lac. The club was established to serve as an opportunity for all undergraduate students who are interested in the field of investments to develop and/or increase their knowledge of this special area of finance through activities designed as rewarding educational experiences.

Notre Dame Accounting Association (NDAA). The Notre Dame Accounting Association exists to provide junior and senior accountancy majors and sophomore business majors who are considering accountancy as a major, an organization which provides support, employment contacts, social gatherings and events, and a unifying bond in the form of membership. Sophomores, juniors, and seniors majoring in, or intending to major in, accountancy are eligible for membership.

Marketing Club. The Marketing Club provides an opportunity for junior and senior marketing majors to learn about the field of marketing. Business executives who are active in the marketing profession are invited to speak to members several times during the year. These businesspeople address the club on a variety of marketing, selling, and advertising topics. The Marketing Club is also very active in promoting the students for permanent positions or internships via a career night held each fall.

Information Technology Management Club, Notre Dame (ITMND). The purpose of ITMND is to pool the resources of all persons interested in the field of Information Technology Management (ITM) to more fully develop the academic, career, and social potential of all individuals in this dynamic field of study.

Student International Business Council (SIBC). As one of the largest student organizations on campus, the SIBC is committed to its vision of
establishing peace through commerce while educating its members and providing them an avenue to develop vital business and interpersonal skills with an international focus. The council is organized into various divisions representing all majors and concentrations within the Mendoza College of Business. Members are actively a part of projects which strive to offer unmatched, hands-on experience in everything from simulating the structure and debates of the European Central Bank and forming an in-depth fundamental and technical financial analysis of an international company, to managing the council’s marketing needs and developing and maintaining our own website.

The council is also dedicated to bettering international relations by means of socially-conscious activities. One of note is the Haiti Bednet project that receives funding from both the SIBC and the W.K. Kellogg Foundation.

Within a given year, members travel to all corners of the globe. Each year, the SIBC grants around 40 students the chance to work as interns and teachers in a rapidly growing number of foreign countries—giving members the real-world experience that is highly desired in the current job market.

Notre Dame Wall Street Club. Through a network of current students and alumni, the Notre Dame Wall Street Club provides resources and mentoring for ND students who wish to learn about careers on Wall Street. The club works closely with the Investment Office, Career Center, alumni, and senior mentors to help students network, learn about opportunities, and prepare for a successful career on Wall Street. Students interested in getting involved are encouraged to sign up for club emails, attend meetings, and reach out to club officers to talk about interests and opportunities.

Unleashed. We believe that educating individuals early in life about the importance of impact investing will encourage continuous involvement and contribution to all related fields. Unleashed is an organization for people from all disciplines, and intends to collaborate with other universities and colleges to learn from each other’s experiences. Our members are challenged to think in new ways and explore alternative financial solutions to existing social issues.

### Accountancy

**Deloitte Foundation Professor of Accountancy, and Department Chair:**
H. Fred Mittelstaedt

**KPMG Professor of Accountancy:**
Thomas F. Schafer

**Notre Dame Alumni Professor of Accountancy:**
Peter D. Easton

**Deloitte Professor of Accountancy:**
David N. Ricchiute

**Professors:**
- Brad A. Badertscher; Thomas J. Freckia (emeritus);
- Kenneth W. Milanis; Michael H. Morris;
- William D. Nichols; Ramachandran Ramanan;
- James L. Wittenbach

**Associate Professors:**
Jeffrey J. Burks; Stephannie Larouque; Chao-Shin Liu; Jeffrey S. Miller; Juan M. Rivera (emeritus);
- James A. Seida; Thomas L. Stober; Sandra C.
- Vera-Muñoz

**Assistant Professors:**
- Erik L. Beardsley; John B. Donovan; Andrew J.
- Imdieke; Asís Martinez-Jerez

**Professional Specialists:**
- James L. Fuchsmeyer; Edward F. Hums; Brian R.
- Levey; Tonia H. Murphy; James A. O’Brien

**Associate Professional Specialists:**
- Colleen M. Creighton; Laura L. Hollis; Michael
- J. Meyer; Janet L. O’Tousa; Samuel Ranzilla;
- William J. Schmuhl

**Program Objectives:**
The AACSB separately-accredited Department of Accountancy provides outstanding accounting educational experiences for its students by (a) complementing and supporting the tradition of liberal arts/general education at Notre Dame, (b) adhering to the objectives of the undergraduate program of the Mendoza College of Business, and (c) developing and continuously improving an innovative accounting curriculum for successful careers as accounting professionals. The program focuses on critical thinking/analysis, research, professionalism, teamwork, and communication.

The department provides students with the skills and knowledge necessary to succeed in accounting-related careers. The department also supports the activities of the Notre Dame Career Center by (a) maintaining an outstanding record of placing high percentages of graduates with national accounting firms and other large organizations such as Citigroup, Goldman Sachs, Disney and GE; and (b) supporting student desires to pursue other postgraduate options, including graduate education, volunteer work, and military service.

**Program of Studies.** The accounting sequence begins with Accountancy I and II (ACCT 20100 and 20200). These courses, normally taken in the sophomore year and required of all business students, are designed to provide a broad introduction to the accounting function, the profession of accountancy and the role of accounting in society.

Students choosing the accountancy major must complete the following Department of Accountancy requirements.

- ACCT 30110. Accounting Measurement and Disclosure I
- ACCT 30120. Accounting Measurement and Disclosure II
- ACCT 30210. Strategic Cost Management
- ACCT 30280. Decision Processes in Accounting
- ACCT 40510. Audit and Assurance Services
- ACCT 40610. Federal Taxation

**The 150-Hour Rule for CPA Certification.**
Typically, 150 hours of college credit with an accounting concentration are necessary to be licensed as a CPA. The rules vary across states. Many students meet the 150-hour requirements through AP credit and overloads during their four-year undergraduate degree. Notre Dame also offers a one-year Master of Science in Accountancy program to help our students meet the 150-hour requirement as well as other state-specific course requirements.

**COURSE DESCRIPTIONS**
All of the courses associated with this academic program can be found online at registrar.nd.edu/students/class_search.php. The scheduled classes for a given semester may be found by clicking on “Class Search” and selecting the subject **Accountancy.** Course descriptions can be found by clicking on the subject code and course number in the search results.
Finance

William and Cassie Daly Professor of Finance, and Department Chair:
Richard R. Mendenhall
Kenneth R. Meyer Chair in Global Investment Management:
Roger D. Huang
C.R. Smith Professor of Finance:
Timothy J. Loughran
John W. and Maude Clarke Professor of Finance:
Paul H. Schultz
Notre Dame Professor of Finance:
John F. Affleck-Graves

Professors:
Robert Battalio; Jeffrey H. Bergstrand; Martijn Cremers; Zhi Da; Barry P. Keating; Bill D. McDonald; Richard G. Sheehan

Associate Professors:
Shane Corwin; Pengjie Gao; Michael L. Hemler; Sophie Shive; D. Katherine Spiess

Assistant Professors:
Priyank Gandhi; Benjamin Goelz; Peter W. Kelly; Taehyun Kim; Andreas Neuhielr; Qiping Xu

Professional Specialists:
Carl Ackermann; Walter Clements; Margaret Forster

Associate Professional Specialists:
Gianna Bern; Kristen Collett-Schmitt; David Hutchison; John Stiver

Assistant Professional Specialists:
James Leady; Jason Reed

Program Objectives. The department offers courses with the dual objective of (1) providing a broad foundation so that students can pursue further study at the graduate level and (2) equipping students with the base of knowledge and skills necessary for entry into the financial world.

Program of Study. All students enrolled in the Mendoza College of Business are required to take an introductory finance course during their sophomore year; this course provides an overview of issues encountered by a firm’s financial manager. Finance majors must complete FIN 20150 Corporate Financial Management with a grade of C or higher. This course cannot be repeated for a higher grade. All business students are also required to complete two courses in business economics: FIN 30210 Managerial Economics and FIN 30220 Macroeconomic Analysis. The aim of these courses is to provide students with an understanding of the economic environment within which business enterprises operate.

In addition to the courses required of all candidates for the degree of bachelor of business administration, finance majors are required to take seven courses offered by the department. The required courses are FIN 30100 Financial Statement Analysis (or ACCT 30100 Corporate Financial Reporting), FIN 30400 Advanced Corporate Finance, FIN 30600 Investment Theory, and four 40000-level finance electives chosen from the specialized courses offered by the department.

The finance elective courses are designed to equip students with the knowledge to progress in whatever area of business they choose upon graduation. The subject matter in these courses—investments, corporate finance, financial markets, financial institutions, and real estate—can be tailored to meet the student’s individual interests. Graduates of the department are currently pursuing successful careers in many areas of business, including investment banking, commercial banking, and corporate financial management, among others.

Students who intend to take the examinations leading to the Chartered Financial Analyst (CFA) designation should structure their programs with that objective in mind. An additional business law low class (ACCT 40710) should be included in their program, along with appropriate courses in accounting and investments, including FIN 40660 Fixed Income Investment Strategies.

COURSE DESCRIPTIONS

All of the courses associated with this academic program can be found online at registrar.nd.edu/students/class_search.php. The scheduled classes for a given semester may be found by clicking on “Class Search” and selecting the subject Finance. Course descriptions can be found by clicking on the subject code and course number in the search results.

Information Technology, Analytics, and Operations

John W. Berry Sr. Department Chair and Associate Professor:
Robert F. Easley
Fred V. Duda Professor of Business:
Sarv Devaraj

Professors:
David B. Hartvigsen; Ken Kelley

Associate Professors:
Corey Angst; Nasir Ghiaseddin; Hong Guo; Sean Handley; Daewon Sun; Jerry C. Wei; Xuying Zhao

Assistant Professors:
Idris Adjerid; Lin Hao; Sriram Somanchi; Katie Wowak

Program of the Practice:
Don Kleinmuntz

Associate Teaching Professor:
Tim Caione; Robert Lewandowski; Scott Nestler; Jennifer Waddell

Assistant Teaching Professor:
Bruce Harris

Programs of Study. The IT, Analytics, and Operations Department offers two majors, one in Information Technology Management, and a new major in Business Analytics that will start up in the fall of 2017.

INFORMATION TECHNOLOGY MANAGEMENT MAJOR

The ITM program is designed to prepare students to become leaders in the use of information technology for the benefit of organizations and society. This program of study focuses on educating students about the development and use of information systems as a decision-making and problem-solving tool. The program also is intended to develop an understanding of the managerial issues encountered in the introduction or operation of IT solutions in organizations, particularly, how these tools can be used to gain a competitive edge and to re-engineer an organization.

ITM Major Required Courses
MGT 30220. Management Communications 1.5 hrs.
MGT 30660. Strategic IT 1.5 hrs.
MGT 30490. Business Problem Solving 3.0 hrs.
MGT 40700. Project Management 1.5 hrs.
MGT 40750. Quantitative Decision Modeling 1.5 hrs.
MGTI 30610. Application Development 3.0 hrs.
MGTI 30620. Business Intelligence 3.0 hrs.

ITM Concentrations
In addition to the courses required by the major, ITM students may elect to pursue one of three concentrations: Business Analytics, Finance and Financial Accounting, and Visual Interface Design.
Business Analytics (CBAN)
The CBAN concentration will help prepare students for rapidly growing career opportunities in the business analytics and data sciences areas. Building on the required courses in Business Intelligence and Systems Analysis & Design, these courses will provide greater depth of knowledge in those areas, and Systems Analysis & Design, these courses will focus on the required courses in Business Intelligence in the business analytics and data sciences areas. Building a CBAN concentrator within ITM would take:

MGT 40650: Social Media Analytics 3.0 hrs.
MGTI 30650: SAP Predictive Analytics 1.5 hrs.
MGTI 40630: Enterprise Data Management 1.5 hrs.
MGTI 40640: Data Exploration & Visualization 1.5 hrs.
MGTI 40680: Enterprise Architecture 1.5 hrs.

Finance and Financial Accounting (CFFA)
The CFFA concentration will prepare students for a wide variety of careers, from positions at the interface between traders and developers in financial firms, to consulting firms, to the IT or finance divisions in any firm. Capacity in this concentration may be restricted, so be sure to indicate your interest soon after declaring the ITM major.

A CFFA concentrator within ITM would take:

ACCT 30100: Corporate Financial Reporting 3.0 hrs.
FIN 30400: Advanced Corporate Finance 3.0 hrs.
One of these two courses:
• ACCT 30210: Strategic Cost Management 3.0 hrs.
• FIN 30600: Investment Theory 3.0 hrs.

Visual Interface Design (CDSN)
The CDSN concentration will prepare students with an interest in design for careers in firms that provide strategy, digital marketing and technical services in the eCommerce arena. Capacity in this concentration may be restricted, so be sure to indicate your interest soon after declaring the ITM major.

ARST 11100 2-D Foundations for Designers and Artists (a 3-credit course which counts towards the university fine arts requirement) is a pre-requisite for DESN 21101. ARST 11100 must therefore be taken as early as possible to successfully complete this concentration, and cannot be taken senior year.

A CDSN concentrator within ITM would take a total of 10 credit hours:

DESN 21101 VCD1: Introduction to Graphic Design 3.0 hrs.
co-requisite:
DESN 21102 VCD Software Tutorial 1.0 hr.
DESN 21120 VCD3: Web Design 3 3.0 hrs.
MGTI 40660: Building Web Applications 3.0 hrs.

BUSINESS ANALYTICS MAJOR (available Fall 2017)
The Business Analytics major will prepare students to conceive of the right kinds of questions that can be addressed using the massive datasets accumulating in firms and other repositories, to formulate the best research plan to answer those questions, and to use cutting-edge tools and techniques to execute those plans. The curriculum is not finalized at this time, but will include coursework on: data management, data mining, predictive analytics, machine learning, visualization, unstructured data, text mining, and other analytic techniques. Students with these skills will be in high demand in all disciplines, including HR, marketing, finance, accounting, IT, and consulting, as well as across a wide variety of firms.

Management and Organization
Department Chair and Associate Professor: Craig Crossland
Edward Frederick Sorin Society Professor of Management
Edward J. Conlon
David E. Gallo Professor of Business Ethics: Ann E. Tenbrunsel
Professor: J. Michael Grant
Associate Professor: Viva O. Bartkus; Matthew C. Bloom; Michael Mannor
Assistant Professor: Jasmine Hu; Charlice Hurst; Kaifeng Jiang; Adam Wowak
Teaching Professor: James S. O’Rourke IV
Associate Teaching Professors: Chris Adkins; Wendy Angst; Sandra Collins; Chad Harms; Joseph Holt; Amanda McKendree; Jessica McMannus Wärnelt; John Michel; Gerard Pannekoek; Elizabeth Tuleja; Eric Zimmer
Assistant Teaching Professor: Tim Balke

Programs of Study
The Department of Management & Organization offers both an undergraduate major in Management Consulting, and a minor in Innovation and Entrepreneurship.

MANAGEMENT CONSULTING MAJOR
The consulting program prepares students to manage people and processes within both large and small organizations or to advise organizations on those management issues. A particular emphasis is placed on managing within organizations facing the challenges of rapid change and increased competition. The major is designed to provide sufficient flexibility for students to prepare for several career paths by preparing students to think systematically about the processes through which organizations achieve excellence.

Consulting Major Required Courses
MGT 30220: Management Communications 1.5 hrs.
MGT 30660: Strategic IT 1.5 hrs.
MGT 30490: Business Problem Solving 3.0 hrs.
MGT 40700: Project Management 1.5 hrs.
MGT 40750: Quantitative Decision Modeling 1.5 hrs.

In addition to the courses listed above, all consulting majors must take any of the following five courses:

MGTC 30300: Management Competencies 3.0 hrs.
MGTC 30420: Innovation and Design Thinking 3.0 hrs.
MGTC 30450: Strategic Human Res. Mgt. 3.0 hrs.
MGTC 30460: International Management 3.0 hrs.
MGTC 40410: Values-Based Leadership 3.0 hrs.
Consulting Major Concentration
In addition to the courses required by the major, Consulting students may elect to pursue a concentration in Business Intelligence.

Business Intelligence (CBIN)
The CBIN concentration offers a way for consulting majors to prepare for rapidly growing career opportunities in analytics focused firms or in the growing analytics practices of consulting firms.

A CBIN concentrator within Management Consulting would take:

- MGT 40450: Social Media Analytics 3.0 hrs.

One of these two courses:

- MARK 30130: Marketing Analytics 3.0 hrs.
- MGTI 30620: Business Intelligence 3.0 hrs.

INNOVATION AND ENTREPRENEURSHIP MINOR
The Gigot Center for Entrepreneurship in the Mendoza College of Business offers an interdisciplinary minor in entrepreneurship to students enrolled in the College. The minor complements a business major by providing students the opportunity to study and learn about the development of new ventures that promote self-sufficiency, create jobs, and make significant contributions to our communities. Through unique, state-of-the-art courses, the minor helps students build skills needed to identify opportunities and launch new ventures.

Students who combine a minor in entrepreneurship with one of the traditional business majors can find employment in corporate areas of research and development, new product key accounts, and launch turnaround management and strategic planning and execution.

Entrepreneurship Minor Courses
(Note: None of these courses can be counted as elective requirements in any major)

Required Courses (7.5 credits)
- BAEN 30500: Intro. to Entrepreneurship 3.0 hrs.
- BAEN 30420: Innovation and Design Thinking 3.0 hrs.
- BAEN 30520: Entrepreneurial Finance 1.5 hrs.

Elective Courses (select 4.5 credits)
- BAEN 30505: Social Entrepreneurship 3.0 hrs.
- BAEN 30550: Imagination, Creativity & Commerce 3.0 hrs.
- BAEN 40530: Legal Issues in Entrepreneurship 1.5 hrs.
- BAEN 40570: Entrepreneurial Sales & Sales Mgt. 1.5 hrs.

Capstone Courses (select one)
- BAEN 40506: Social Enterprise Consulting 3.0 hrs.
- BAEN 40510: New Venture Creation 3.0 hrs.
- BAEN 40610: Venture Funding Practicum 1.5 hrs.

COURSE DESCRIPTIONS
All of the courses associated with this academic program can be found online at registrar.nd.edu/students/class_search.php. The scheduled classes for a given semester may be found by clicking on “Class Search” and selecting one or more of the following subjects:

- Management
- Management - Consulting
- Management - IT
- Business Administration - Entrepreneurship

Course descriptions can be found by clicking on the subject code and course number in the search results.

Marketing
John Cardinal O’Hara C.S.C. Professor of Business and Department Chair:
Shankar Ganesan
Raymond W. and Kenneth G. Herrick Professor of Marketing:
John F. Sherry Jr.
Aloysius and Eleanor Nathe Professor of Marketing Strategy:
William L. Wilkie
John T. Ryan Jr. Chair in Business Ethics and Professor of International Ethics:
Georges Enderle
Professors:
Patrick E. Murphy; Joel E. Urany
Associate Professors:
John F. Gaski; Timothy J. Gilbride; Elizabeth S. Moore
Assistant Professors:
Emily N. Garbinski; Frank A. Germann; Mitchell C. Olsen; James E.B. Wilkie
Professional Specialist:
Robert Essig

Program of Studies. Students completing a degree in marketing at Notre Dame should: (1) understand the decision-making processes of buyers and sellers in a market; (2) know how to apply behavioral models and quantitative tools to the analysis of marketing issues; (3) be able to develop informed marketing and organizational strategies; (4) be effective in working in a team environment; and (5) recognize the ethical and social responsibilities of marketing practitioners.

In accordance with these objectives, all students in the Mendoza College of Business take Introduction to Marketing in their sophomore year. Students choosing marketing for their professional major are required to take MARK 30100 Consumer Organizational Buyer Behavior, MARK 30120 Marketing Research, MARK 40100 Strategic Marketing, and three marketing electives.

The Marketing Research and Consumer Organizational Buyer Behavior courses, taken in the junior year, develop a foundation in the tools and concepts germane to marketing decision making.

During the senior year, students take Strategic Marketing, an advanced marketing strategy course that integrates marketing concepts and the other business functions through projects and simulations.

All courses in the department focus on the performance of the marketing process but do not restrict it to a particular situation. Thus, the student majoring in marketing is prepared for a wide range of opportunities in business and nonprofit organizations, including professional sales, customer service, product or brand management, advertising, public relations, market research, retail merchandising, and electronic commerce. Marketing majors are being employed by an increasing number of firms specializing in areas such as consulting, retailing,
and other service businesses that have traditionally underestimated the importance of this function. Additionally, nonbusiness and nonprofit organizations (hospitals, educational institutions, charitable organizations) are discovering the critical importance of marketing in their operations and are seeking well-trained graduates.

**COURSE DESCRIPTIONS**

All of the courses associated with this academic program can be found online at registrar.nd.edu/students/class_search.php. The scheduled classes for a given semester may be found by clicking on “Class Search” and selecting the subject Marketing. Course descriptions can be found by clicking on the subject code and course number in the search results.

---

**Non-Departmental Courses**

Assistant Dean for Undergraduate Studies: Dale M. Nees, Mendoza College of Business

Many courses in the college are designed to cross departmental lines and provide basic tools during the sophomore and junior years or to foster the integration of various disciplines during the junior and senior years. These courses are open to all business students with appropriate prerequisites.

**COURSE DESCRIPTIONS**

All of the courses associated with this academic program can be found online at registrar.nd.edu/students/class_search.php. The scheduled classes for a given semester may be found by clicking on “Class Search” and selecting one or more of the following subjects:

- Business (Non-departmental)
- Business Administration
- Business Administration - A&L
- Business Administration - Communication
- Business Administration - EG
- Business Administration - Ethics
- Business Administration - Business Law
- Business Administration - Management
- Business Administration - SC
- Business Administration - UG

Course descriptions can be found by clicking on the subject code and course number in the search results.
Officers of Administration

In the Mendoza College of Business
ROGER D. HUANG, Ph.D.
Dean of the Mendoza College of Business

D. KATHERINE SPIESS, Ph.D.
Associate Dean of the Mendoza College of Business

KENNETH KELLEY III, Ph.D.
Associate Dean of the Mendoza College of Business

DALE M. NEES, M.S.
Assistant Dean of the Mendoza College of Business

H. FRED MITTELSTAEDT, Ph.D.
Chair of the Department of Accountancy

RICHARD R. MENDENHALL, Ph.D.
Chair of the Department of Finance

ROBERT E. EASLEY, Ph.D.
Chair of the Department of Information Technology, Analytics, and Operations

CRAIG CROSSLAND, Ph.D.
Chair of the Department of Management and Organization

SHANKAR GANESAN, Ph.D.
Chair of the Department of Marketing
Advisory Council

MARK A. ALEXANDER
Montville, New Jersey

WILLIAM P. ANGRICK
Washington, D.C.

FRANK J. BELATTI
Atlanta, Georgia

JAMES G. BERGES
New York, New York

ROBERT M. BERTINO JR.
Dallas, Texas

WILLIAM C. BROWN
Oklahoma City, Oklahoma

EDWARD C. COPPOLA JR.
Dallas, Texas

JOSEPH F. COYNE
Los Angeles, California

JEROME J. CROWLEY JR.
Los Almos, California

PERRY N. DELLELCE
Toronto, Ontario

MATTHEW S. DeSALVO
New York, New York

MAURICE J. DeWALD
Newport Beach, California

THOMAS P. DOLPHIN
Minneapolis, Minnesota

ROBERT E. DOWDELL
Laguna Beach, California

JOSE RAFAEL FERNANDEZ
San Juan, Puerto Rico

RAY M. FERRIERO
McLean, Virginia

CHARLES K. FISHER JR.
Fort Worth, Texas

WARD J. FITZGERALD
Plymouth Meeting, Pennsylvania

CYRUS F. FREIDHEIM JR.
North Palm Beach, Florida

BRIAN P. GALLAGHER
Chicago, Illinois

GARY R. GARRABRANT
New York, New York

ROBERTO GARZA DELGADO
Garza Garcia, Mexico

JOHN C. GERSPACH
New York, New York

GARY E. GIGOT
South Bend, Indiana

JOSEPH E. GIOVANINI
Jackson, Wyoming

CHRISTINA L. GLORIOSO
New York, New York

TIMOTHY M. GRAY
Minneapolis, Minnesota

THOMAS E. GROJAN SR.
Minneapolis Heights, Minnesota

KATHLEEN C. GUBANICH
Exton, Pennsylvania

JOSEPH M. HAGGAR III
Dallas, Texas

JOHN C. HAHN
London, England

WILLIAM J. HANK
Westmont, Illinois

CHARLES M. HANSEN JR.
Dallas, Texas

JAMES L. HESBURGH
Notre Dame, Indiana

DANIEL R. HESSE
Kansas City, Missouri

RICHARD J. HUEThER
Schenectady, New York

JAMES M. JAEGER
Los Angeles, California

GARY R. KANE
Lympfield, Massachusetts

SEAN T. KLMCZAK
New York, New York

JOHN A. KOTLES
Edina, Minnesota

ALICE A. MARTIN
Elkhart, Indiana

JOHN G. MARTIN
Chicago, Illinois

ROXANNE M. MARTINO
Chicago, Illinois

JESSICA A. MATTES
Chicago, Illinois

J. LUKE McGUINNESS
LaGrangeville, New York

KENNETH R. MEYER
Winnetka, Illinois

ANNA R. MIRE
Chicago, Illinois

VERA L. MUZZILLO
Independence, Ohio

NEIL S. NAUGHTON
Dublin, Ireland

TERRY J. NOLAN
Canton, Ohio

PATRICK E. O’SHAUGHNESSY
Wichita, Kansas

FRANK A. POTENZIANI
Rancho Santa Fe, California

PAUL E. PURCELL (Chair)
Milwaukee, Wisconsin

MARK H. RAUENHORST
Minnetonka, Minnesota

PAUL C. REILLY
St. Petersburg, Florida

ANDREW N. REYES
Roswell, Georgia

RICHARD A. ROSENTHAL
Niles, Michigan

JOHN T. RYAN III
Cranberry Township, Pennsylvania

DAVID A. SABY
Seattle, Washington

GEORGE E. SCHARPF
Old Bridge, New Jersey

KEITH S. SHERIN
Norwalk, Connecticut

BAILEY J. SIEGFRIED
Tulsa, Oklahoma

JAMES D. SINGEL
Kirkland, Washington

CYNTHIA HANK STARK
Westmont, Illinois

RICHARD G. STARMANN SR.
Winchester, Illinois

ROBERT A. SULLIVAN
Chicago, Illinois

IRMA L. TUDER
Madison, Alabama

ROSEY M. VALENCE
South Elgin, Illinois

JOHN B. VEIHMeyer
New York, New York

JAMES E. WADE
Boston, Massachusetts

VALERIE M. BARKER WALLER
Chicago, Illinois

BRIAN J. WYCLIFF
New York, New York
College of Engineering

The College of Engineering was established as a distinct unit of the University in 1897, although a program in civil engineering was offered in 1873. The college comprises five departments, including aerospace and mechanical engineering, chemical and biomolecular engineering, civil and environmental engineering and earth sciences, computer science and engineering, and electrical engineering. Since its inception, the College of Engineering has regarded the primary purpose of all higher education as the development of the intellect, discriminatory power, and judgment in all students to enable them to arrive at sound decisions in their personal lives and in the professional lives they will pursue after graduation. The programs of studies offered in the various departments of the college are, therefore, constructed to give to the student a good knowledge of the basic sciences and of engineering principles, and to prepare the student for the manifold duties of an educated professional and for the cultural life of an educated person. Classroom instruction is amplified by laboratory work and design experiences that give the student insight into the application of principles to practical problems. Detailed information about the College of Engineering and its many programs can be found at engineering.nd.edu.

Engineering at Notre Dame combines technical inquiry with a creative bent (novel methods of using and producing materials, components, devices, and systems) to develop innovations that can improve the health, well-being, and quality of life for all persons. Consistent with the University's Catholic mission and heritage, the College of Engineering's mission is founded on the principle that the creation and transfer of knowledge should reflect a profound and complete respect for the dignity of all persons and for the greater common good of humanity. To appropriate the words of the University's founder, Rev. Edward A. Sorin, C.S.C., the college must be, first and foremost, a force for good in the world. To that end, the college will continue to engage in transformational research in its core competencies—energy, biomedical/bioengineering, environmental science/engineering, and national/personal security—as they address the important needs of humanity, while inspiring students of all levels to scholarship and service. It will also continue to develop its expertise in electronic materials and devices, wireless and information systems, natural hazard mitigation, flow physics and control, geochemistry and geosciences, hydrology, and computational science and engineering, translating research outcomes into commercial ventures as possible, so that the efforts of Notre Dame engineering researchers produce the greatest good for society.


Registration of Engineers. Registration of engineers is required for many fields of practice. Recent graduates need not acquire registration immediately upon graduation, but they benefit by applying early for the required state examination. Graduating from accredited programs such as those offered by Notre Dame facilitates registration as a professional engineer.

Programs and Degrees

The College of Engineering offers curricula leading to the undergraduate degrees listed below:

- B.S. in aerospace engineering
- B.S. in chemical engineering
- B.S. in civil engineering
- B.S. in computer engineering
- B.S. in computer science
- B.S. in electrical engineering
- B.S. in environmental earth sciences
- B.S. in environmental engineering
- B.S. in environmental earth sciences
- B.S. in mechanical engineering

To complete all degree requirements, the student must take and pass all of the courses specified in the Bulletin for the given degree and must earn the total minimum number of course credit hours specified for the degree.

To obtain two undergraduate degrees from the College of Engineering, a student must successfully carry out an approved program of courses totaling no less than 157 credit hours, depending on the programs. These must include all of the courses specified in the Bulletin for each degree.

The college offers advanced degrees in the following areas:

- M.S. in aerospace engineering
- M.S. in bioengineering
- M.S. in chemical engineering
- M.S. in civil engineering
- M.S. in computer science and engineering
- M.S. in electrical engineering
- M.S. in environmental engineering
- M.S. in geological sciences
- M.S. in mechanical engineering
- Ph.D. in aerospace and mechanical engineering
- Ph.D. in bioengineering
- Ph.D. in chemical engineering
- Ph.D. in civil engineering and geological sciences
- Ph.D. in computer science and engineering
- Ph.D. in electrical engineering

The Department of Aerospace and Mechanical Engineering also offers a non-thesis master of engineering (M.E.) in mechanical engineering.

The details of the programs and the engineering courses offered at the graduate level are in the Graduate School Bulletin of Information.

Engineering Common Core. All engineering curricula consist of each of the following:

- Arts and Letters Core: 24 credit hours. Writing and Rhetoric (one course), University Seminar (one course), history (one course), social science (one course), fine arts or literature (one course), philosophy (two courses) and theology (two courses).

*The University Seminar may be selected from an appropriate history, social science, fine arts, or literature course, or from the first course in theology or philosophy, and will satisfy the respective requirement.

Basic Science Core: 33 credit hours. MATH 10550 Calculus I; MATH 10560 Calculus II; MATH 20550 Calculus III, MATH 20580 Introduction to Linear Algebra and Differential Equations; CHEM 10171 General Chemistry: Fundamental Principles; PHYS 10310 General Physics I; PHYS 10320 General Physics II; EG 10111, 10112 Introduction to Engineering Systems I and II

First Year of Studies. A first-year student enters the Notre Dame First Year of Studies for one academic year of basic collegiate studies before entering a department within the college. In the spring of the first year of studies, a first-year student intending to major in engineering will select a degree program. If the student is scholastically sound for the given choice, approval will be given. A first-year student intending to pursue any of the College of Engineering degree programs should complete the following courses by the end of the first year:

- First Semester
  - WR 13100. Writing and Rhetoric 3
  - MATH 10550. Calculus I 4
  - CHEM 10171. General Chemistry: Fundamental Principles* 4
  - EG 10111. Introduction to Engineering Systems I 3
  - Arts and Letters course† 3
  - Moreau First Year Experience 1

To Table of Contents
Programs and Degrees

Second Semester
University Seminar+ 3
MATH 10560. Calculus II 4
CHEM 10122. General Chemistry: Biological Processes or other technical course* 3
PHYS 10310. General Physics I 4
EG 10112. Introduction to Engineering Systems II 3
Moreau First Year Experience 1

18

* The University Seminar may be selected from an appropriate history, social science, fine arts, or literature course, or the first course in theology or philosophy, and will satisfy the respective requirement. The College of Engineering recommends selecting the first course in theology and philosophy, as well as composition, to enable maximum schedule flexibility in later semesters.

† The College requires CHEM 10171 or CHEM 10181 for all students. Aerospace, environmental and mechanical engineering all require a second chemistry class, either CHEM 10122, CHEM 10172 or CHEM 10182. Chemical engineering students must take either CHEM 10122, CHEM 40420 or another approved advanced chemistry course. CHEM 10122 will satisfy a technical elective requirement in all other degree programs, and is strongly recommended for students pursuing the bioengineering minor or any bio-focused concentration within a degree program.

General Requirements. The University of Notre Dame reserves the right to change at any time regulations included in its Bulletin with respect to admission to the University, continuance therein and graduation therefrom. Every effort is made to give advance information of such changes.

The number of credit hours carried by the undergraduate student in the College of Engineering may not exceed 19 hours without permission, granted at the discretion of the assistant dean for academic affairs.

Engineering Scholars Program (ESP). The College of Engineering has developed a program for those students whose achievements have identified them as among the best of entering first-year students. This program provides special opportunities for classroom interaction, cultural enrichment, and social leadership. Admission to the program is by invitation. ESP students take a special yearlong seminar in the first year that satisfies two University core requirements. Participation in this program is independent of participation in the Engineering Honors Program.

Engineering Honors Program (EHP). The Engineering Honors Program provides an intensive, research-based experience for students who have shown exceptional promise during their first two years in the college. Admission to the EHP is made after application to the individual department program no earlier than fall of the student’s junior year. Each student in this program will be guided by a faculty member who functions as the student’s research advisor and mentor, and students and faculty meet regularly in both formal and informal settings. To graduate with recognition as an honors program student, each student must, at a minimum, engage in two semesters of research and complete a research thesis in the student’s major field in the senior year, and be eligible for Latin honors at graduation. Independent departments retain the right to add other criteria to this minimum set of requirements.

International Study Opportunities. The University strongly supports study abroad and has encouraged the programs in the College of Engineering to participate. At present, there are semester- or year-long opportunities during the academic year for juniors in Dublin, Ireland; London, England; Perth, Australia; Puebla, Mexico; Cairo, Egypt; and Santiago, Chile. The programs in Mexico and Chile require the student to be fluent in Spanish. In each location, students must take at least two technical courses to remain on track for graduation. Programs vary by semester, and not all locations are appropriate for every major in the college. Students should contact a department adviser to work out any details.

The college currently offers two summer programs for engineering undergraduates who have completed at least the first-year engineering curriculum, in London, England, and Alcoy, Spain.

Admission to all programs is competitive and requires demonstration of satisfactory academic performance.

ROTC Programs. ROTC students who complete their programs may use a maximum of six credits of upper-level air, military, or naval science courses as substitutes for specified degree requirements determined by each department. Three of these credits may substitute for either a history or social science requirement; three may substitute for a technical elective at the discretion of each major program. No other air, military or naval science credits not so substituted may be credited toward degree requirements in programs in the College of Engineering.

Liberal Arts in the Curriculum. Students enrolled in the College of Engineering must satisfy all University degree requirements, including writing and rhetoric (three credits), University Seminar* (three credits), history (three credits), social science (three credits), fine arts or literature (three credits), philosophy (six credits), and theology (six credits).

For specific information on course offerings to satisfy these requirements, students must consult the online course registration system.

* The University Seminar may be selected from an appropriate history, social science, fine arts, or literature course, or the first course in theology or philosophy, and will satisfy the respective requirement.

Engineering Business Practice. The college recognizes the importance of providing its graduates with opportunities to learn how engineers function in the world of business and offers a multi-course sequence (EG 40421/40422) that provides education in this area. Students in all majors of the college may take at least the first course to satisfy technical elective requirements. The courses increase the effectiveness of engineering graduates by developing an understanding of the dynamics of business operations. They include issues related to ethics, leadership, and business practices such as marketing, management, finance, and human resources, and they examine the professional and leadership characteristics of modern industrial leaders. In the second course, students develop a business plan and execute it using a computer simulation program.

Combination Five-Year Programs with the College of Arts and Letters. The college recognizes the benefits of a broad background in cultural, social, and technical subjects and, in 1952, in cooperation with the College of Arts and Letters of the University, instituted a five-year program that combines the liberal arts program with the requirements of the various engineering programs. Students who complete this combination program will earn two degrees: the degree of bachelor of arts and the degree of bachelor of science in the engineering major pursued. Dual-degree students are eligible to join the Reilly Program in Engineering and Arts and Letters described at http://reilly.nd.edu/reilly-dual-degree-in-arts-and-letters-and-engineering/.

Students pursuing this program must have strong scholastic ability and be acceptable to both the dean of the College of Arts and Letters and the dean of the College of Engineering. Application to the program is normally done by the end of the second year, but choice of a particular field in Arts and Letters may be deferred until the end of the third year.

The general sequence of courses in the five-year engineering-liberal arts program is found under “Dual Degree Programs” later in this section of the Bulletin.

Combination Five-Year Dual-Degree with the College of Science. The college also recognizes that a background in the natural sciences or mathematics, which are also foundational to a strong liberal arts experience, can provide engineering students with a broader context for solving societal problems and meeting humanity’s needs. Thus, in 2013, the colleges of engineering and science approved a plan of study that would allow students to earn a bachelor’s degree in each college in five years.

The general requirements for this program are found under “Dual Degree Programs” later in this section of the Bulletin.

Combination Five-Year Program with the Mendoza College of Business. To address the needs of engineering students who wish to integrate management and engineering, the College of Engineering and the Mendoza College of Business have established a program in which a student may earn the bachelor of science degree from the College of Engineering and the master of business administration from the Mendoza College of Business.
The program is structured so that a student who has completed the first three years of the bachelor's degree program, if accepted through a competitive admissions process, completes the master of business administration and the bachelor of science in engineering by the end of the fifth year. This program may require summer or intersession work.

Students who wish to pursue this program should have a superior scholastic record in their undergraduate program and must apply to and be accepted by the MBA program during their third year in the College of Engineering.

The general sequence of courses in the five-year engineering-MBA program may be found under “Dual Degree Programs” later in this section of the Bulletin.

Combination Five-Year Program with Saint Mary's College. Students at Saint Mary's College may elect to earn a B.S. in biology, chemistry, or mathematics from Saint Mary's while simultaneously earning a B.S. in a related engineering program at Notre Dame. This program requires five years of study, with only the fifth year at Notre Dame to satisfy residency requirements. Students interested in this program must consult the appropriate advisor(s) at Saint Mary's College before enrolling in required courses at Notre Dame.

Through a special arrangement, students at Saint Mary's College, Notre Dame, Ind., may take a combination program of science classes at Saint Mary's and engineering classes at Notre Dame beginning in their sophomore year at Saint Mary's. The student will earn her bachelor of science degree from Saint Mary's at the end of the fourth year, and complete her bachelor of science in engineering degree in her fifth year at Notre Dame.

Combination Five-Year Programs with Other Schools. The highly desirable objective to infuse more liberal arts and sciences work into the education of engineering students has also been met also through 3-2 engineering programs with select liberal arts institutions.

The University of Notre Dame has entered into agreements with Assumption College, Worcester, Mass.; Bethel College, Mishawaka, Ind.; Carroll College, Helena, Mont.; Elon University, Elon, N.C.; Franciscan University, Steubenville, Ohio; Goshen College, Goshen, Ind.; Kings College, Wilkes-Barre, Penn.; Loyola University Chicago, Chicago, Ill.; Saint Anselm College, Manchester, N.H.; Stonehill College, Easton, Mass.; University of St. Thomas, St. Paul, Minn.; University of St. Thomas, Houston, Tex.; Xavier University of Louisiana, New Orleans, La., and the Atlanta University Center, comprising Morehouse College, Spelman College and Clark Atlanta University in Atlanta, Ga., whereby the liberal arts and sciences part of a combination five-year program is given by these respective colleges and the engineering part by Notre Dame. In these dual-degree programs, the student spends three years at a college of first choice and two years at Notre Dame. After completion of the five-year program, the student receives a bachelor of arts or bachelor of science degree from the first college and a bachelor of science in engineering degree from Notre Dame.

The sequence of courses for any of these programs will vary depending on the program of study at the other institution. No attempt has been made to set up a rigid pattern, and each participating institution has some freedom concerning the choice and arrangement of courses, provided that the coverage in the areas of mathematics, physics, chemistry, computing, introductory engineering, theology, philosophy, history, social science, and literature or fine arts is appropriate. It is expected, however, that students will complete the equivalent of the first two years of the desired College of Engineering program before applying for transfer.

To be eligible for an undergraduate degree, the student must complete a minimum of 60 credit hours at the University with a minimum of 75% of the degree credit hours (not less than 90 credit hours) earned after high school graduation through college and university courses, and be enrolled in the last semester on the main university campus. Please consult the Undergraduate Academic Code for further details.

Details of these programs may be obtained by writing to the institutions concerned or to the College of Engineering.

Graduate Programs in Engineering.* The Graduate School of the University of Notre Dame comprises four divisions: humanities, social science, science, and engineering. The division of engineering was organized in 1946 with power to grant advanced degrees in the departments of aerospace and mechanical engineering, chemical and biomolecular engineering, civil and environmental engineering and earth sciences, computer science and engineering, and electrical engineering. The general conduct of graduate work is under the jurisdiction of the Graduate Council of the University, the members of which serve as specified in the Academic Articles. Director of the program in the engineering division is the dean of the College of Engineering.

* Reference should be made to the Graduate School Bulletin of Information for details of these programs and to the Web at http://graduateschool.nd.edu/departments-and-programs/degree-programs-by-division/.

MINORS

The College of Engineering offers six minors, open to all University students who have taken the appropriate pre-requisite courses for upper-level engineering and science courses. For students in the College of Engineering, only one course required for the minor may double-count towards degree requirements and the minor. Students in other colleges should consult their own program department for similar restrictions.

Bioengineering

This minor, offered by the Department of Aerospace and Mechanical Engineering and the Department of Chemical and Biomolecular Engineering, comprises a six-course sequence that teaches students how to use the tools of engineering analysis with the fundamentals of the engineering and life sciences, to enliven the understanding of living organisms, medical treatments and biochemical pathways and to provide quantitative predictions and insight towards the design of medical and biological devices and processes. The six-course minor consists of three foundational courses in bioengineering, cell biology and more advanced courses in the biology field, along with three courses specializing in areas such as biomaterials, biomechanics, biotransport/microdevices, tissue engineering and biomaterials, molecular and cellular bioengineering, bioinformatics, biomedical imaging and treatment, and environmental bioactivity and remediation. Students intending to pursue this minor should take CHEM 10122 prior to starting the minor. Details are provided at ame.nd.edu/undergrad-programs/minors-and-concentrations.

Computational Engineering

This minor, offered by the Department of Aerospace and Mechanical Engineering, recognizes the importance of computational tools in all disciplines of engineering and gives students exposure to the fundamentals of programming and numerical methods, experience and skills in computer usage, and knowledge of applications from a range different areas. The minor requires fifteen credit-hours (nominally five courses) selected from among a list available at ame.nd.edu/undergrad-programs/minors-and-concentrations.

Energy Engineering

This minor, offered by the Department of Aerospace and Mechanical Engineering, recognizes that Energy is an important subject of current interest that involves many engineering and non-engineering disciplines, and enables students to develop a stronger background in and to prepare better for professional jobs or higher studies in the area. This minor differs from the Energy Studies minor as described below in that it focuses on the technical aspects of energy and requires courses concentrated in engineering and science. The minor requires five courses from among a list available at ame.nd.edu/undergrad-programs/minors-and-concentrations.

Energy Studies

This minor, offered by the Center for Sustainable Energy at Notre Dame (cSEND) through the Department of Chemical and Biomolecular Engineering, differs from the minor in Energy Engineering described above in that it requires less technical content and more broadly examines the issue of energy from a variety of perspectives. Through this minor, students will learn to:

To Table of Contents
quantify energy resources and use and recognize the fundamental laws of thermodynamics that govern energy conversion; develop a functional knowledge of the historical and economic frameworks that guide decision-making in the energy industry today; develop oral and written communication skills necessary to convey the critical information about energy to the non-expert; understand the environmental consequences such as pollution and climate change of today's energy technologies; understand the linkages between ethics and energy utilization; critically assess the strengths and weaknesses and the prospective impact of alternative energy technologies; and understand the influence of geopolitics, economics and public policy on our nation's and the world's energy future. The minor requires:

- ENER 20101
- ENER 20102
- Capstone project or CSC 33985
- and three courses (nine credit-hours) concentrated either in a technical or non-technical area of energy studies, approved in advance by the director of the Energy Studies Minor, selected from a list maintained by CSEND.

**Engineering Corporate Practice**

This minor, offered by the college in cooperation with the Mendoza College of Business, is restricted to students in their final year as undergraduates in the college, and participation may be restricted due to capacity limitations in Mendoza. To qualify for consideration for the minor, a student must complete the first two courses of the Engineering Business sequence, EG 40421/44421 and EG 40422, by the end of junior year. The minor comprises those two courses, a course in economics, and accountancy and corporate finance courses offered through Mendoza. Complete details for the minor are available at [https://engineering.nd.edu/academics/undergraduatedegreeprograms](https://engineering.nd.edu/academics/undergraduatedegreeprograms).

**Environmental Earth Sciences**

This minor, offered by the Department of Civil and Environmental Engineering and Earth Sciences, provides background for students interested in learning about the physical sciences, emphasizing the processes that occur near or at the surface of the Earth, and the impact of human activity on such processes. The minor requires 16 credit hours distributed across four courses and a field experience:

- All students pursuing the minor must take: 6 credit hours
  - CE 20110 Planet Earth 4
  - CE 20520 Env. Mineralogy 4
  - CE 45200 Field Trip 1
  - EVES Elective 4
  - EVES Elective 3

**Concentrations**

Several College departments also offer concentrations, restricted to students within particular majors. Concentrations comprise a set of at least three 3-credit-hour courses focusing on a specific discipline, designed to give students greater depth of knowledge in that area. Concentrations may be completed within degree requirements, by selecting departmental and technical electives from pre-approved lists of courses. Please see each department's website for more information. The list of currently approved concentrations includes:

- **Department of Aerospace & Mechanical Engineering**
  - Aerospace Engineering
  - Bioengineering
  - Computational Engineering
  - Control and Mechanical Systems
  - Design and Manufacturing
  - Energy
  - Materials
  - Solid Mechanics
  - Thermal and Fluid Sciences

- **Department of Chemical and Biomolecular Engineering**
  - Biomolecular Engineering
  - Energy
  - Materials

- **Department of Civil and Environmental Engineering & Earth Sciences**
  - Hydraulics (Civil Engineers only)
  - Structures (Civil Engineers only)

- **Department of Computer Science & Engineering**
  - Bioinformatics and Computational Biology
  - Cloud Computing
  - Cybersecurity
  - Media Computing
  - Mobile Computing

- **Department of Electrical Engineering**
  - Biosystems
  - Communications
  - Energy
  - Multimedia
  - Semiconductors and Nanotechnology

**College Awards and Prizes**

**COLLEGE OF ENGINEERING AWARDS**

- **The Rev. Thomas A. Steiner Prize.** From a fund established in 1948 by former students of Rev. Thomas A. Steiner, C.S.C., former dean of the College of Engineering, a cash award is made to seniors in the college who have been selected for their all-around excellence as students.

- **The Reilly Scholar Designation.** The designation of Reilly Scholar is given annually to those fifth-year seniors enrolled in the dual Engineering/Arts and Letters program who have excelled academically and otherwise during their first four years as students.

- **The Americo Darin Prize.** From a fund set up by the Darin family in their father's name, a cash award is made to several engineering juniors who have demonstrated exceptional and steady improvement over their first four semesters at Notre Dame.

**Departmental Awards**

**AEROSPACE AND MECHANICAL ENGINEERING**

- **Patrick J. Devlin Award.** Presented each year to a junior aerospace student who has displayed the most diligence and persistence in the pursuit of undergraduate studies in aerospace engineering.

- **Vincent P. Goddard Design Award.** Presented each year to a senior in aerospace engineering for outstanding performance in the aerospace design course.

- **Sigma Gamma Tau Honor Award.** Presented each year to a member of the Notre Dame chapter in recognition of outstanding academic performance and demonstrated professional potential.

- **Pi Tau Sigma Honor Award.** Presented each year to a senior in aerospace engineering for outstanding performance in the Gas Turbine and Propulsion class.

- **The Zahm Prize for Aeronautical Engineering.** The award is made to the senior aerospace engineering student who, in the estimation of the faculty of the program, has achieved the most distinguished record in professional subjects.

- **The Zahm Prize for Mechanical Engineering.** Beginning with 2007–08 year, awarded to a senior mechanical major who, in estimations of the faculty, has achieved the most distinguished record in professional subject.

- **Jerome L. Novotny Design Award.** Presented each year to a junior in mechanical engineering for the best design in the junior heat transfer course.

- **The Rockwell Automation Power Systems Design Award.** Presented each year to seniors in mechanical engineering for the best design in the senior mechanical engineering design course.

- **Best Undergraduate Research Paper.** Presented each semester to the undergraduate who has written the best research paper based on research done during undergraduate research class for the semester.

**CHEMICAL AND BIOMOLECULAR ENGINEERING**

- **American Institute of Chemists Award.** Presented to an outstanding senior in the Department of Chemical and Biomolecular Engineering.

- **Chemical Engineering Alumni Award.** Presented to one or more seniors who have an outstanding combination of scholarship and extracurricular activities.
Chemical Engineering Faculty Award. Presented to the senior with the highest scholastic average after seven semesters of study.

Chemical Engineering Research Award. Presented to one or more undergraduate students who have performed outstanding undergraduate research.

James P. Kohn Scholarship in Chemical Engineering. A fund dedicated to helping meet the financial need of top-performing seniors.

John C. Tracy Award. Presented to the student with the highest score in thermodynamics.

CIVIL AND ENVIRONMENTAL ENGINEERING AND EARTH SCIENCES

The American Society of Civil Engineers Activity Award. The Indiana section each year presents an award to the two senior students most active in the student chapter of ASCE.

Leroy D. Graves Academic Improvement Award. Presented to a senior civil engineering student for significant development in academic performance.

The Sydney Kelney Outstanding Scholar Award. Presented to a senior civil engineering student for excellence and creativity in academics.

The Kenneth R. Laser Award. Presented to a senior civil engineering student for leadership, integrity, and service to fellow students and community as determined by that student’s classmates.

James A. McCarthy Scholarship in Civil Engineering. Presented to a junior civil engineering student for outstanding academic and professional excellence.

The Walter L. Shills Award for Undergraduate Achievement. Presented to a senior civil engineering student who has best fulfilled his or her potential as a student through hard work and dedication to obtaining the best possible education.

The Rev. Alexander Kirsch, C.S.C., Award. To the senior receiving a degree in geological sciences who has evidenced high qualities of personal character, scholarship, and leadership.

Dr. Raymond C. Gutschick Award. To the graduating senior who has demonstrated the most promise in geological research as evidenced by a successful research project.

COMPUTER SCIENCE AND ENGINEERING

Outstanding Computer Engineering Award. To the graduating senior in computer engineering who has evidenced high qualities of personal character, scholarship, and leadership.

Outstanding Computer Science Award. To the graduating senior in computer science who has evidenced high qualities of personal character, scholarship, and leadership.

ELECTRICAL ENGINEERING

The James L. Massey Award. For achievement in electrical engineering, recalling communication theory, undergraduate teaching, and the Binary Examination.

The Basil R. Myers Award. For achievement in electrical engineering, recalling circuit theory, the English language, and St. George Day at Notre Dame.

The Arthur J. Quigley Award. For achievement in electrical engineering, recalling electronics, service to our neighbor, and the little man in the circuit.

The Lawrence E. Stauber Award. For achievement in electrical engineering, recalling electrical power, the IEEE Student Branch, and the Notre Dame alumni.

The IEC William L. Everitt Award. For achievement in electrical engineering, computer engineering, or computer science, with an interest in the area of communications.

Student Organizations and Activities

HONOR SOCIETIES

TAU BETA PI
In 1960, the Indiana Gamma Chapter of Tau Beta Pi was installed at Notre Dame to foster a spirit of liberal culture in the engineering college and to recognize those who have conferred honor upon Notre Dame by distinguished scholarship and exemplary character as undergraduates in engineering or by their attainment as alumni in the field of engineering. Seniors in the top fifth of their class and juniors in the top eighth of their class are eligible for election under rigid standards of scholarship, character, leadership, and service.

ETTA KAPPA NU
In 1962, the Delta Sigma Chapter of Eta Kappa Nu, the national honor society for electrical engineers, was installed at Notre Dame. Juniors, seniors, and alumni are elected to membership on the basis of scholastic attainment, leadership, and quality of character.

PI TAU SIGMA
In 1963, the Sigma Beta Chapter of Pi Tau Sigma, the national honor society for mechanical engineers, was installed at Notre Dame. Juniors, seniors, and alumni are elected to membership on the basis of scholastic attainment, leadership, quality of character, and a demonstration of probable future success in engineering.

CHI EPSILON
In 1966, the Notre Dame Chapter of Chi Epsilon, the national honor society for civil engineers, was installed at Notre Dame. Chi Epsilon recognizes those civil engineering students, faculty, and alumni who have displayed superior qualities in scholarship, character, practicality, and sociability during their professional careers.

SIGMA GAMMA TAU
The American Institute of Aeronautics and Astronautics (AIAA) American Institute of Chemical Engineers (AIChE) American Society of Civil Engineers (ASCE) American Society of Mechanical Engineers (ASME) Association of Computer Machinery (ACM) Institute of Electrical and Electronic Engineers (IEEE) National Society of Black Engineers (NSBE) Society of Hispanic Professional Engineers (SPHE) Society of Women Engineers (SWE)

The Engineering Leadership Council (ELC), a student organization with representation from the college’s professional and honor societies, coordinates the activities of all engineering organizations and encourages the pursuit of a professional attitude in the student body of the College of Engineering. The ELC sponsors activities of general interest to the engineering student body.
Aerospace and Mechanical Engineering

Chair:
Gretar Tryggvason

Associate Chair:
Joseph M. Powers

H. Clifford and Evelyn A. Brucy Professor of Mechanical Engineering:
Frank P. Incropera (emeritus)

Roth-Gibson Professor of Engineering:
Eric J. Jumper

Viola D. Hank Professors of Mechanical Engineering:
Gretar Tryggvason; Nicholas Zabaras

Clark Professor:
Thomas C. Corke

Rooney Family Associate Professor:
David B. Go

Professors:
Hafiz M. Arassi (emeritus); Stephen M. Batill (emeritus); Raymond M. Brach (emeritus);
Kenneth Christensen; Patrick F. Dunn (emeritus); Francis M. Kobayashi (emeritus);
Scott C. Morris; Thomas J. Mueller (emeritus); Robert C. Nelson (emeritus); Glen L. Niebur;
Timothy C. Ovaert; Samuel Paolucci; Joseph M. Powers; Francis H. Raven (emeritus);
Ryan K. Roeder; Mihir Sen; Steven B. Skaa (emeritus); Steven R. Schmid; Albin A. Szweczyk (emeritus);
Flint O. Thomas; Meng Wang; Kwang-tzu Yang (emeritus)

Associate Professors:
J. William Goodwine Jr.; Stanislav Gordeyer; John W. Lucey (emeritus); Svetlana Nevetina;
Karel Matouš; Hirotaka Sakaue; James P. Schmiedeler; Michael M. Stanisic

Assistant Professors:
Joel Boerckel; James E. Houghton (emeritus); Seong Kyun Im; Thomas Juliano; Tengfei Luo;
Zhanglei Peng; Pinar Zorlutuna

Associate Professional Specialists:
Rodney L. McClain; John Ott; Michael Seelinger; Richard B. Streiber

Program of Studies.
The Department of Aerospace and Mechanical Engineering offers programs of study that lead to degrees of bachelor of science and master of science in aerospace engineering and mechanical engineering, respectively; master of engineering for mechanical engineers; and doctor of philosophy.

Program in Aerospace Engineering. This program is accredited by the Engineering Accreditation Commission of ABET, http://www.abet.org. The aerospace program is designed to prepare those students interested in the design and operation of aircraft and space vehicles for entrance into a professional career. The curriculum, based on a solid foundation in mathematics, physics, chemistry and the engineering sciences, places emphasis on such basic aerospace disciplines as aerodynamics and fluid mechanics, orbital mechanics, and solid and structural mechanics, as well as such integrating disciplines as design, experimental methods and systems analysis. Technical specializations in the junior and senior year enable students to emphasize specific technical areas, including design and manufacturing, thermal and fluid sciences, bioengineering, solid mechanics, materials, control and mechanical systems and computational engineering.

The aerospace engineering program uses laboratories in Fitzpatrick Hall of Engineering and in the Hessert Laboratory for Aerospace Research. The Hessert laboratories contain superior facilities for instruction and research.

Students are encouraged to participate in the activities of the student chapter of the American Institute of Aeronautics and Astronautics and to enter the national student paper competition conducted by the parent institute. Outstanding achievement in the aerospace program is recognized by membership in Sigma Gamma Tau, the national aerospace honor society.

Further details about the standard aerospace program, the London Program and electives can be found on the Web at ame.nd.edu.

Aerospace Engineering Program Educational Objectives and Student Outcomes. The Engineering Accreditation Commission of ABET encourages the explicit statement of the Program Educational Objectives and Learning Outcomes for all engineering programs. Publication of the objectives and desired outcomes, as well as efforts to determine if these are being achieved, are part of the process of continuous improvement in engineering education.

Program Educational Objectives. The Department of Aerospace and Mechanical Engineering has established the following Program Educational Objectives that are consistent with the mission of the University and College of Engineering. These objectives have been developed in collaboration with faculty, students, and industry representatives. Program Educational Objectives are “broad statements that describe the career and professional accomplishments that the program is preparing the graduates to achieve.” These are usually recognized as accomplishments in the first few years after graduation.

The aerospace engineering program at Notre Dame appreciates the diverse set of individual goals to which our students aspire, so it has expressed the Program Educational Objectives in two forms. Graduates of the program should:

- Secure a position consistent with their personal aspirations and qualifications
- Assume a technical or managerial leadership role with their organization
- Participate as a volunteer with at least one professional or social service organization

In addition, depending on the career path selected, graduates would be prepared to achieve one or more of the following:

- Be recognized as the key technical specialist within their organization for a particular professional specialty
- Receive a graduate or professional degree
- Start their own company
- Be granted a patent

Student Learning Outcomes. To achieve these Program Educational Objectives, the curriculum is designed to provide the following Student Learning Outcomes that describe what students are expected to know or be able to do by the time of graduation.

First Principles and Problem Solving: Graduates understand fundamental scientific first principles of engineering and can apply them to the solution of problems or systems by way of analytical and numerical treatment.

Engineering Skills and Professional Practice: Graduates understand the essential role of experimentation in engineering, and they are able to compare and gain insight from a combination of analytical, numerical, and experimental results. They are able to use modern engineering software tools, including CAD, and are capable of programming digital computers.

Design: Graduates have a pragmatic understanding of design and the engineering design process and are able to contribute in various ways to the design of a product, system, or process.

Communication: Graduates are able to communicate well, both orally and in writing, and function effectively in multidisciplinary groups, both in leadership and support roles.

Professional Responsibility: Graduates are familiar with the responsibilities of professional practice, the roles that aerospace engineers play in society, the kinds of issues they deal with, and their influence in society.

First Year of Studies
First-year students intending to major in aerospace engineering when they become sophomores will find first-year course requirements on the first page of the College of Engineering section.

The following schedule is applicable to the EG Class of 2019.

Sophomore Year
First Semester
MATH 20550. Calculus III
PHYS 10320. General Physics II
AME 20221. Mechanics I
AME 20211. Introduction to Aeronautics
AME 20214. Introduction to Engineering Computing
Arts and Letters course+ 3

17.5
### Second Semester

- **MATH 20580. Introduction to Linear Algebra and Differential Equations** 3.5
- **AME 20222. Mechanics II** 3
- **AME 20241. Solid Mechanics** 4
- **AME 20231. Thermodynamics** 3
- **AME 20213. Measurements and Data Analysis or AME 30361. Computer Aided Design and Manufacturing** 4/3

**Total for the four years:** 133 semester hours.

*A list of approved technical specialization and professional development courses is available on the department website.*

+ See "Arts and Letters Core" on the first page of the College of Engineering section.

The most current information for the degree program course requirements is available on the department website, ame.nd.edu.

### The Program in Mechanical Engineering

This program is accredited by the Engineering Accreditation Commission of ABET, [http://www.abet.org](http://www.abet.org). The department offers a well-rounded program at the bachelor’s level. The curriculum is built on a sound foundation in mathematics, physics, chemistry and the engineering sciences. In the undergraduate curriculum the student may obtain, by suitable selection of elective courses, a program suited to enable him or her to specialize in a given sequence or to prepare as a generalist. Elective course sequences are available in aerospace, design and manufacturing, thermal and fluid sciences, bioengineering, solid mechanics, materials, control and mechanical systems, and computational engineering.

To prepare for today's changing technological world, the program requires use of a computer in many of its courses.

Finally, for professional growth during formative years as engineers in training, students are encouraged to participate in the activities of the student chapter of the American Society of Mechanical Engineers. Outstanding achievement in the mechanical engineering program is recognized by membership in Pi Tau Sigma, the national mechanical engineering honor society.

Further details about the mechanical engineering program, the London Program and electives can be found on the Web at ame.nd.edu. The program below pertains only to the Classes of 2015 and beyond. Prior class requirements are noted below.

### Mechanical Engineering Educational Objectives and Student Learning Outcomes

The Engineering Accreditation Commission of ABET encourages the explicit statement of the Program Educational Objectives and Student Learning Outcomes for all engineering programs. Publication of the objectives and desired outcomes, as well as efforts to determine if these are being achieved, are part of the process of continuous improvement in engineering education.

### Program Educational Objectives

The Department of Aerospace and Mechanical Engineering has established the following Program Educational Objectives that are consistent with the mission of the University and College of Engineering. These objectives have been developed in collaboration with faculty, students, and industry representatives. Program Educational Objectives are “broad statements that describe the career and professional accomplishments that the program is preparing the graduates to achieve.” These are usually recognized as accomplishments in the first few years after graduation.

The mechanical engineering program at Notre Dame appreciates the diverse set of individual goals to which our students aspire, so it has expressed the educational objectives in two forms. Graduates of the program should:

- Assume a technical or managerial leadership role with their organization
- Participate as a volunteer with at least one professional or social service organization

In addition, depending on the career path selected, graduates would be prepared to achieve one or more of the following:

- Be recognized as the key technical specialist within their organization for a particular professional specialty
- Receive a graduate or professional degree
- Start their own company
- Be granted a patent

### First Principles and Problem Solving

Graduates understand fundamental scientific first principles of engineering and can apply them to the solution of problems or systems by way of analytical and numerical treatment.

### Engineering Skills and Professional Practice

Graduates understand the essential role of experimentation in engineering, and they are able to compare and gain insight from a combination of analytical, numerical, and experimental results. They are able to use modern engineering software tools, including CAD, and are capable of programming digital computers, including microprocessors.

### Design

Graduates have a pragmatic understanding of design and the engineering design process and are able to contribute in various ways to the design of a product, system, or process.

### Communication

Graduates are able to communicate well, both orally and in writing, and function effectively in multidisciplinary groups, both in leadership and support roles.

### Professional Responsibility

Graduates are familiar with the responsibilities of professional practice, the roles that mechanical engineers play in society, the kinds of issues they deal with, and their influence in society.

### First Year of Studies

First-year students intending to major in mechanical engineering when they become sophomores will find first-year course requirements on the first page of the College of Engineering section.
The following schedule is applicable to the EG Class of 2019.

**Sophomore Year**

**First Semester**
- MATH 20550. Calculus III 3.5
- PHYS 10520. General Physics II 4
- AME 20221. Mechanics I 3
- AME 20214. Introduction to Engineering Computing 1
- Arts and Letters course+ 3

17.5

**Second Semester**
- MATH 20580. Introduction to Linear Algebra and Differential Equations 3.5
- AME 20222. Mechanics II 3
- AME 20241. Solid Mechanics 4
- AME 20213. Measurements and Data Analysis or AME 30361. Computer Aided Design and Manufacturing 4/3
- AME 20231. Thermodynamics 3

16/15

**Junior Year**

**First Semester**
- AME 30314. Differential Equations, Vibrations and Controls I 3
- AME 20213. Measurements and Data Analysis or AME 30361 Computer Aided Design and Manufacturing 3
- AME 30331. Fluid Mechanics 3
- AME 40423. Mechanisms and Machines 3
- Arts and Letters course+ 3

17.5/16.5

**Second Semester**
- AME 30315. Differential Equations, Vibrations and Controls II 3
- AME 30334. Heat Transfer 3
- AME 30363. Design of Machine Elements 3
- EE 20222. Introduction to Electrical Engineering and Embedded Systems 4
- Arts and Letters course+ 3

16

**Senior Year**

**First Semester**
- AME 30362. Design Methodology 3
- AME Technical Elective** 3
- AME Technical Elective 3
- Technical Elective* 3
- Arts and Letters course+ 3

15

**Second Semester**
- AME 40463. Senior Design Project 4
- AME Elective 3
- AME Elective 3
- Technical Elective* 3
- Arts and Letters course+ 3

16

* A list of approved AME and technical specialization courses is available on the department website.
+ See “Arts and Letters Core” on the first page of the College of Engineering section.

**Second Semester**
- take AME 20212 in the sophomore year instead of CBE 30361, and CBE 30361 in the senior year instead of an additional AME technical elective.

The current information for the degree program course requirements is available on the department website: (ame.nd.edu).

Total for the four years: 131 semester hours.

**Course Descriptions**

All of the courses associated with this academic program can be found online at registrar.nd.edu/students/class_search.php. The scheduled classes for a given semester may be found by clicking on “Class Search” and selecting the subject Aerospace and Mechanical Engineering. Course descriptions can be found by clicking on the subject code and course number in the search results.

A number of introductory graduate-level courses, described in the Graduate School Bulletin of Information and on the department website, are open to advanced undergraduates, with the permission of the department chair, to satisfy upper-level electives.

The traditional role for chemical engineers of providing the principal technical guidance for the chemical and petroleum industries has been greatly augmented in recent years. Chemical engineers now direct the advancement and utilization of technology for the food processing and consumer products industries and are playing increasing roles in the manufacture of the highest density computer chips and in the invention of advanced drug delivery systems. In addition to creating remediation strategies, chemical engineers contribute to the prevention of deleterious impact of society on the environment by the development of new green process technologies that eliminate the use of dangerous solvents. They are the leaders in the field of sustainability which is the implementation of energy sources and raw material supplies that can sustain humankind indefinitely. In all of these areas, complex processes involving chemical changes of matter occur and, as such, sound training in chemistry, physics, mathematics, and allied applied sciences are prerequisites to resolving the challenges posed by these complex systems.
The undergraduate program at Notre Dame is notable for its combination of a strong fundamental focus in chemical engineering courses with a broad humanities and science education provided in courses other than chemical engineering. The science and humanities courses prepare students both for the study of chemical engineering and to understand the complex scientific, social, and moral issues of the world today. Our intention in emphasizing fundamentals is to develop students’ intellect and equip them with enduring knowledge in chemical engineering and related fields. Thus, our undergraduate chemical engineering curriculum provides students with not only a preparation for a career as a chemical engineer, but for a lifetime of learning and a lifelong career in areas that may include law, medicine, or business.

University of Notre Dame Undergraduate Program Goals: Students who have graduated in Chemical Engineering at Notre Dame have successfully pursued a wide range of career paths. The faculty believe that this has resulted from the interests of students who enter our program and is facilitated by our emphasis on fundamental aspects of chemical engineering. Consistent with the mission of the University, the Department of Chemical and Biomolecular Engineering program seeks to develop students who:

1. Pursue knowledge and commensurate understanding and critically evaluate the consequences of these.
2. Communicate clearly and effectively.
3. Demonstrate proficiency in the art and science of chemical engineering with a strong understanding of the fundamental principles of pure and engineering sciences on which chemical engineering practice is based.
4. Appreciate their social and moral responsibilities both within their careers in engineering and through service in their communities.
5. Understand how chemical engineering connects with other major disciplines to produce the goods and services needed by society.

Within the chemical engineering degree program, students can complete concentrations in materials, energy and biomolecular engineering. A suggested course sequence for students interested in going to medical school is also available.

More than one-third of the chemical engineering undergraduates participate in research activities with faculty and graduate students at some time in their careers in areas such as advanced materials, ionic liquids, separations, biomaterials, microfluidic devices, catalysis, fuel cells, and drug delivery techniques.

Further details about the chemical engineering program may be found at cbe.nd.edu. The program below pertains only to the Classes of 2015 and beyond.

**Course Descriptions**

All of the courses associated with this academic program can be found online at registrar.nd.edu/students/class_search.php. The scheduled classes for a given semester may be found by clicking on “Class Search” and selecting one or more of the following subjects:

- Chemical & Biomolecular Engineering
- Energy Studies

Course descriptions can be found by clicking on the subject code and course number in the search results.

Certain graduate courses are open to advanced undergraduates with permission from the department chair or director of undergraduate studies, and the course instructor.
Civil and Environmental Engineering and Earth Sciences

Our professions develop the fundamental and applied technologies that impact people's health, well-being, and ability to thrive through our work on infrastructure (buildings, bridges, tunnels, waterways, ports, roads, dams, offshore energy platforms, wind farms), clean water supply (water resources, water distribution and water treatment), sewage and waste disposal (wastewater treatment), protection from natural hazards (earthquakes, tornadoes, tsunamis, riverine floods, winds, waves, hurricanes), energy systems (offshore oil extraction, wind farms, hydro-electric, nuclear fuel reprocessing), and sustainable environments (pollutants in the atmosphere, groundwater, surface water, active transport of pollutants within these systems, biological and geochemical processes, the interplay of natural processes such as mineral-water-rock-bacteria interactions, and anthropogenic issues such as transport of toxic heavy metals and safe disposal of nuclear waste), and the larger geophysical and geochemical earth system. CEEES strives to provide a stimulating and unique interdisciplinary environment for learning and research by blending traditional disciplines of science and engineering. CEEES offers outstanding educational programs for those aspiring to contribute as leaders in the fields of Civil Engineering, Environmental Engineering, and Environmental Earth Sciences. CEEES educational objective is to provide students with the knowledge, skills, vision and ethical basis to contribute as leaders in design, construction and protection of our civil infrastructure, and understanding, management and remediation of the environment.

CEEEES has very innovative undergraduate programs that synergize classroom teaching with research, field trips, lecture series and hands on experiences that expose students to the realities and professionals in their field. These programs are designed to be inspirational and lead to inquiry as well as lead to life-long connections in the field. All of our students experience in-depth fieldtrips and the majority of our students participate in research programs, thematic professional competitions, and professional lecture series. In addition, our students have a strong tradition of service in programs such as NDSEED, a student organization that proposes, designs, finances and builds bridges for poor communities in Central America, and Engineers Without Borders. The department has a long tradition of placing its graduates from both undergraduate and graduate programs into sectors that truly serve society from their most basic needs of clean water and shelter to the advanced energy and transportation systems that sustain a thriving economy and a high standard of living. Our alumni have a history of success and exemplary leadership in academia, consulting, national laboratories, construction, and industry.

To Table of Contents

Civil and Environmental Engineering and Earth Sciences

Henry J. Massman Chair: Joannes J. Westerink
Associate Chair: Yahya C. Kurama
Henry J. Massman Professor of Civil Engineering: Peter C. Burns
Robert M. Moran Professor of Civil Engineering: Ahsan Kareem
Wayne and Diane Murdy Professor of Engineering and Geosciences:
Harindra J. Fernando
Joseph and Nona Abehorn Professor in Computational Science and Engineering:
Joannes J. Westerink

Professors:
Jerome B. Fein; Robert L. Irvine (emeritus);
Kenneth R. Lauer (emeritus); Patricia A. Maurice;
Clive R. Neal; James I. Taylor (emeritus);
Yahya C. Kurama; Stephen E. Silliman (emeritus)

Associate Professors:
Diogo Bolster; Andrew Kennedy; Lloyd H. Ketchum Jr. (emeritus);
Kapil Khandelwal; Tracy L. Kijewski-Correa; David J. Kirkner (emeritus);
Jerry J. Marley (emeritus); Robert Nerenberg;
Rev. James A. Rigert, C.S.C. (emeritus);
Alexandros Tzanidis; Joshua Shout; Antonio Simoni

Assistant Professors:
Melissa Berke; Kyle Doudrick; Alan Hamlet;
Amy Hixon; George Mavroidis; David Richter;
Ashley Thrall; Na Wei

Assistant Professional Specialists:
Elizabeth A. Kerr; Stefanie Simonetti; Brian Smith

Program of Studies. The Department of Civil and Environmental Engineering and Earth Sciences offers programs of study leading to the degrees of bachelor of science in civil engineering, bachelor of science in environmental engineering, bachelor of science in environmental earth sciences, master of science in civil engineering, master of science in geological sciences (for graduate students entering the program in or prior to the fall of 2012), master of science in environmental engineering, master of science in environmental earth sciences (for graduate students entering the program in or after the fall of 2013), and doctor of philosophy.

Program Goals. The Department of Civil and Environmental Engineering and Earth Sciences (CEEEES) focuses on knowledge related to civil infrastructure, natural and manmade hazards, environment, energy, water, and planet systems. We emphasize a strong foundation in science and engineering with a focus in the areas of structural engineering, environmental engineering, environmental fluid dynamics, and geochemistry.

PROGRAM IN CIVIL ENGINEERING.

This program is accredited by the Engineering Accreditation Commission of ABET, http://www.abet.org. The department presents a well-rounded program for the bachelor's degree with the first two years devoted primarily to the basic principles of science and engineering. The third and fourth years are devoted to courses in the basic areas of civil engineering—structural analysis and design, hydraulics and hydrology, water supply and wastewater disposal, materials of construction, geotechnical engineering, and transportation engineering. A student may emphasize a particular area of interest by selecting either the structures or hydraulics concentrations. Civil engineering electives in the senior year may be regular courses, individualized directed study or research courses. The civil engineering program will culminate with major design experience in the senior year. Student teams will work closely with industry professionals and faculty who act as consultants on a real-world design projects to facilitate the student's understanding of the design process. Additionally, the curriculum for all programs in the CEEES department requires students to take the Challenges and Innovation Seminar series which brings in top engineering professionals from industry, consulting, academia, and government to discuss major problems of interest and their solutions.

The program provides a firm foundation in the many basic disciplines comprising the broad field of civil engineering. This is especially desirable, for often in the course of professional development the civil engineer is asked to coordinate the planning, design, and construction of highly complex systems and must use many or all of these disciplines.

The department has excellent facilities for research available to both graduate and undergraduate students. These facilities include a structural dynamics/structural control laboratory; a materials testing and structural research laboratory; a groundwater hydrology field laboratory; and a number of analytical laboratories for water, wastewater and hazardous waste treatment.

The professional aspects of civil engineering are emphasized and promoted by the activities of a student chapter of the American Society of Civil Engineers, in which all students of the department are eligible and encouraged to participate. In addition, a junior class field trip examines major infrastructure projects and environmental systems including tall buildings, bridges, stadiums, transportation systems, navigations systems, flood protection works, clean water supply, and wastewater systems.

Further details about the civil engineering may be found on the Web at ceees.nd.edu.

First Year of Studies
First-year students intending to major in civil engineering when they become sophomores will find first-year course requirements on the first page of the College of Engineering section.
The following course schedule is applicable to the EG class of 2019.

**Sophomore Year**

<table>
<thead>
<tr>
<th>First Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 20550. Calculus III</td>
</tr>
<tr>
<td>PHYS 10520. General Physics II</td>
</tr>
<tr>
<td>CE 20190. Statics</td>
</tr>
<tr>
<td>CE 20111. Planet Earth</td>
</tr>
<tr>
<td>CE 30160. CE Materials</td>
</tr>
<tr>
<td>CE 23601. Chlg. &amp; Innov. of CE Eng.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Second Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 20580. Introduction to Linear Algebra and Differential Equations</td>
</tr>
<tr>
<td>ACMS 30440. Probability and Statistics</td>
</tr>
<tr>
<td>AME 20241. Solid Mechanics</td>
</tr>
<tr>
<td>CE 20600. Intro to CAD</td>
</tr>
<tr>
<td>CE 20230. Engineering Programming</td>
</tr>
<tr>
<td>CE 23601. Chlg. &amp; Innov. of CE Eng.</td>
</tr>
<tr>
<td>Arts and Letters course+</td>
</tr>
</tbody>
</table>

**Junior Year**

<table>
<thead>
<tr>
<th>First Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 30650. Differential Equations</td>
</tr>
<tr>
<td>CE 30125. Computational Methods</td>
</tr>
<tr>
<td>CE 30200. Intro to Struct. Engrg</td>
</tr>
<tr>
<td>CE 30300. Intro to Env. Engrg</td>
</tr>
<tr>
<td>CE 33601. Chlg. &amp; Innov. of CE Eng.</td>
</tr>
<tr>
<td>CE 30460. Fluid Mechanics</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Second Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>CE 40270. Reinf. Concrete Design</td>
</tr>
<tr>
<td>CE 40450. Hydraulics</td>
</tr>
<tr>
<td>CE 30150. Dynamics &amp; Modeling</td>
</tr>
<tr>
<td>CE 33601. Chlg. &amp; Innov. of CE Eng.</td>
</tr>
<tr>
<td>Arts and Letters course+</td>
</tr>
<tr>
<td>Arts and Letters course+</td>
</tr>
</tbody>
</table>

**Senior Year**

<table>
<thead>
<tr>
<th>First Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>CE 40620. Transportation or CE 40465. Environmental Fluid Mechanics</td>
</tr>
<tr>
<td>Core Concentration Elective**</td>
</tr>
<tr>
<td>CE Elective**</td>
</tr>
<tr>
<td>CE 40701. Principles of Practice</td>
</tr>
<tr>
<td>CE 43601. Chlg. &amp; Innov. of CE Eng.</td>
</tr>
<tr>
<td>CE 30510. Intro to Geotech Engineering</td>
</tr>
<tr>
<td>Arts and Letters course+</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Second Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>CE 40702. Senior Design</td>
</tr>
<tr>
<td>Core Concentration Elective**</td>
</tr>
<tr>
<td>Technical Elective**</td>
</tr>
<tr>
<td>CE Elective**</td>
</tr>
<tr>
<td>CE 43601. Chlg. &amp; Innov. of CE Eng.</td>
</tr>
<tr>
<td>Arts and Letters course+</td>
</tr>
</tbody>
</table>

**Total degree required credits** 134

**Note:** All electives are as defined in the academic guide for the Department of Civil and Environmental Engineering and Earth Sciences on the department’s website.

*Certain graduate courses are open to advanced undergraduates with permission of the department chair.*

**ENVIRONMENTAL ENGINEERING**

Program in Environmental Engineering. The Environmental Engineering program at Notre Dame will be seeking accreditation by the Engineering Accreditation Commission of ABET, [http://www.abet.org](http://www.abet.org). This program was founded by the Department of Civil and Environmental Engineering and Earth Sciences to provide students with a quantitative preparation for professional careers or continued higher education regarding the assessment and remediation of human impact on our environment. It is a unique program that prepares students to look at all aspects of water and environmental problems from a range of perspectives including the Earth system, water movement (hydrology, fluid flow), environmental chemistry, geochemistry, and reactive transport. The Environmental Engineering degree program will prepare students to understand the necessary foundational chemistry, fluid flow and mixing mechanics, all within the context of the Earth system.

The environmental engineering program combines classroom, laboratory and field studies. Students are encouraged to participate in a semester study abroad, such as the Australia program (during the fall semester, junior year), which provides additional opportunity for field-based studies. All students are encouraged to conduct independent research under faculty supervision during their junior and senior years. The environmental engineering program will culminate with major design experience in the senior year. Student teams will work closely with industry professionals and faculty who act as consultants on a real-world design projects to facilitate the student’s understanding of the design process. Additionally, the curriculum for all programs in the CEEES department requires students to take the Challenges and Innovation Seminar series which brings in top engineering professionals from industry, consulting, academia, and government to discuss major problems of interest and their solutions.

The professional aspects of civil and environmental engineering are emphasized and promoted by the activities of a student chapter of the American Society of Civil Engineers, in which all students of the department are eligible and encouraged to participate. In addition, a junior class field trip examines major infrastructure projects and environmental systems including tall buildings, bridges, stadiums, transportation systems, navigations systems, flood protection works, clean water supply, and wastewater systems.

Environmental Engineering students will be ready to work as environmental engineers remediating the environment on local and global scales with opportunities available in engineering consulting firms, government agencies, national laboratories, and industries requiring monitoring and advancement of remediation technologies. Additionally, the environmental engineering degree will prepare students for graduate study in Environmental Engineering programs.

Further details about the environmental engineering program may be found on the Web at [ceees.nd.edu](http://ceees.nd.edu).

**First Year of Studies**

First-year students intending to major in civil engineering when they become sophomores will find first-year course requirements on the first page of the College of Engineering section.

The following course schedule is applicable to the EG class of 2019.

**Sophomore Year**

<table>
<thead>
<tr>
<th>First Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>CE 20110. Planet Earth w/lab</td>
</tr>
<tr>
<td>PHYS 10320. Physics II</td>
</tr>
<tr>
<td>CE 30300. Intro to Env. Eng.</td>
</tr>
<tr>
<td>MATH 20550: Calculus III</td>
</tr>
<tr>
<td>CE 20150. Statics</td>
</tr>
<tr>
<td>CE 23601. Chlg. &amp; Innov. of CE Eng.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Second Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>CE 20300. Global Change, Water &amp; Energy</td>
</tr>
<tr>
<td>CE 20320. Env. Aquatic Chem</td>
</tr>
<tr>
<td>MATH 20580. Linear Alg. Diff. Equations</td>
</tr>
<tr>
<td>ACMS 30440. Prob. &amp; Stats.</td>
</tr>
<tr>
<td>Arts and Letters course+</td>
</tr>
<tr>
<td>CE 20230: Engineering Programming</td>
</tr>
<tr>
<td>CE 23601. Chlg. &amp; Innov. of CE Eng.</td>
</tr>
</tbody>
</table>

**Junior Year**

<table>
<thead>
<tr>
<th>First Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>CE 30455. Env. Hydrology</td>
</tr>
<tr>
<td>CE 30125. Comp. Methods</td>
</tr>
<tr>
<td>CE 20520. Env. Mineralogy</td>
</tr>
<tr>
<td>CE 30460. Fluid Mechanics</td>
</tr>
<tr>
<td>Arts and Letters course+</td>
</tr>
<tr>
<td>CE 33601. Chlg. &amp; Innov. of CE Eng.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Second Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>CE 30320. Water Chemistry &amp; Treatment</td>
</tr>
<tr>
<td>CE 40450. Hydraulics</td>
</tr>
<tr>
<td>CE 40350. Env. Microbiology</td>
</tr>
<tr>
<td>Technical Elective**</td>
</tr>
<tr>
<td>Arts and Letters course+</td>
</tr>
<tr>
<td>CE 33601. Chlg. &amp; Innov. of CE Eng.</td>
</tr>
</tbody>
</table>

**To Table of Contents**
### Senior Year

#### First Semester
- CE 40341. Biological Process Design 3
- CE 40300. Geochemistry 3
- CE 40460. Groundwater Hydrology 4
- CE 40355. Water, Disease & Global Health or CE 40465. Env. Fluid Mechanics 3
- CE 40701. Principles of Practice 1
- Arts and Letters course+ 3
- CE 43601. Chlg. & Innov. of CE Eng. 0

Total credit hours required for degree 15

#### Second Semester
- CE 40420. Reactive Transport 3
- CE 40702. Senior Design 3
- CE Elective** 3
- Technical Elective 3
- Arts and Letters course+ 3
- CE 43601. Chlg. & Innov. of CE Eng. 0

Total credit hours required for degree 17

---

### Total credits required for degree 132

+See “Arts and Letters Core” on the first page of the College of Engineering section.

**All electives are defined in the Academic Guide for the Department of Civil and Environmental Engineering & Earth Sciences, available on the department web site.

---

### ENVI RONMENTAL E ARTH SCIENCES

**Program in Environmental Earth Sciences.**

The Environmental Earth Sciences program at Notre Dame was founded by the Department of Civil and Environmental Engineering and Earth Sciences to provide students with a quantitative preparation for professional careers or continued higher education in the disciplines of the earth and environmental science. This degree program blends the disciplines of fluid dynamics and hydrology, environmental chemistry and geochemistry framed within the larger context of Earth systems and focuses more on the geology side of the environment and planetary systems. The program provides a foundation in the physical sciences, with emphasis on processes that occur near or at the surface of Earth, and the impact of human activity on such processes. Students explore the geochemical, mineralogical and hydrological properties of Earth’s crust, and develop an understanding of the interplay of natural processes such as mineral-water-rock-bacteria interactions, with anthropogenic issues such as transport of toxic heavy metals and safe disposal of nuclear waste.

The environmental earth sciences program combines classroom, laboratory and field studies. Students are encouraged to participate in a semester study abroad, such as the Australia program (during the fall semester, junior year), which provides additional opportunity for field-based studies. All students are encouraged to conduct independent research under faculty supervision during their senior year. Additionally, the curriculum for all programs in the CEEES department requires students to take the Challenges and Innovation Seminar series which brings in top engineering professionals from industry, consulting, academia, and government to discuss major problems of interest and their solutions.

An undergraduate major in Environmental Earth Sciences prepares a student for graduate study (M.S., Ph.D.) in many aspects of earth science and environmental science and engineering, as well as for admission to a variety of professional schools. Graduates with a B.S. degree may enter careers in diverse areas such as the National Park Service, industry, environmental consulting, and government research laboratories. An Environmental Earth Science degree is also ideal background for those planning to teach in secondary schools at all levels.

Below you will see an example of the curriculum that can be followed by an incoming student who wishes to major in environmental earth sciences. However, the flexibility of our undergraduate program allows students to switch to environmental earth sciences if they have followed either an engineering or science track during their first year.

Further details about the environmental earth sciences program may be found on the Web at ceees.nd.edu.

### First Year of Studies

First-year students intending to major in environmental earth sciences when they become sophomores will find first-year course requirements on the first page of the College of Engineering section.

The following course schedule is applicable to the EG class of 2019.

#### Sophomore Year

##### First Semester
- CE 20110. Planet Earth w/ lab 4
- PHYS 10320. Physics II 4
- CE 30300. Intro to Env. Eng w/lab 4
- MATH 20550. Calculus III 3.5
- CE 23601. Chlg. & Innov. of CE Eng. 0

Total credit hours required for degree 15.5

##### Second Semester
- CE 20300. Global Change, Water & Energy 3
- CE 20320. Env. Aquatic Chem 3
- MATH 20580. Linear Alg. Diff. Equations 3.5
- ACMS 30440. Prob. & Stats. 3
- Arts and Letters course+ 3
- CE 20320. Engineering Programming 1
- CE 23601. Chlg. & Innov. of CE Eng. 0

Total credit hours required for degree 16.5

---

### Junior Year

##### First Semester
- CE 30455. Env. Hydrology 3
- CE 30125. Comp. Methods 3
- CE 20520. Environmental Mineralogy 4
- CE 45300. Fall Field Trip 1
- CE 30500. Surficial Processes 3
- Arts and Letters course+ 3
- CE 33601. Chlg. & Innov. of CE Eng. 0

---

### Second Semester
- CE 30540. Petr. Of Earth Matls 4
- CE 30560. Dynamic Earth 4
- CE 45200. Field Trip 1
- Technical Elective 3
- Arts and Letters course+ 3
- CE 33601. Chlg. & Innov. of CE Eng. 0

Total credit hours required for degree 15

---

**MINOR IN ENVIRONMENTAL EARTH SCIENCES**

A minor in environmental earth sciences requires the completion of 16 credit hours in geological sciences as follows.

- CE 20110. Planet Earth 4
- CE 20520. Environmental Mineralogy 4
- CE 45200. Field Trip or CE 45300 1
- EVES Elective 4
- EVES Elective 3

Total credit hours required for degree 16

### COURSE DESCRIPTIONS

All of the courses associated with this academic program can be found online at registrar.nd.edu/students/class_search.php. The scheduled classes for a given semester may be found by clicking on “Class Search” and selecting the subject Civil Engineering. Course descriptions can be found by clicking on the subject code and course number in the search results.
Computer Science and Engineering

Schubmehl/Preis Professor and Department Chair of Computer Science and Engineering:
Kevin W. Bowyer

Ted H. McCounterney Professor of Computer Science and Engineering:
Peter M. Kogge

Professors:
Steven C. Bass (emeritus); Danny Z. Chen;
Eugene W. Henry (emeritus); X. Sharon Hu;
John J. Uhran Jr. (emeritus)

Research Professor:
Gregory R. Madey

Duda Family Professor of Engineering:
Patrick Flynn

Franz Freimann Collegiate Professor of Computer Science and Engineering:
Nitesh Chawla

Associate Professors:
David Chiang; Sidney D’Mello; Jesús A.
Izaguirre; Ronald Metoyer; Tijana Milenkovic;
Michael Niemier; Christian Poellabauer; Yiyu
Shi; Aaron Striegel; Douglas Thain; Chao Li Wang

Clare Boothe Luce Assistant Professor:
Laurel D. Rieck

Assistant Professors:
Collin McMillan; Walter Scheirer; Dong Wang;
Timothy Weninger

Professional Specialist:
Jay B. Brockman

Associate Professional Specialists:
Ranjan K. Bhalwan

Assistant Professional Specialists:
Peter Bui; Shreya Kumar

Research Associate Professor:
Scott Emrich

Program of Studies. The Department of Computer Science and Engineering offers programs of study that lead to the degrees of bachelor of science in computer science and bachelor of science in computer engineering. The program in computer engineering is accredited by the Engineering Accreditation Commission of ABET, http://www.abet.org. The program in computer science is accredited by the Computing Accreditation Commission of ABET, http://www.abet.org. The department also offers programs that lead to a master of science in computer science and engineering, and a Ph.D.

Educational Goals. The goals of the programs in computer science and computer engineering are (1) to prepare all students for careers in the public or private sector; (2) to prepare outstanding students for graduate study; (3) to develop lifelong learning skills in all students; (4) to provide comprehensive education in computer science, including theoretical foundations, software and hardware systems, and applications; and (5) to ensure significant design experience including working in teams.

Program Outcomes. At the time of completion of the undergraduate program, all graduates should possess (1) the ability to specify, design, test, and document software; (2) an understanding of current computer software and hardware technology; (3) an understanding of science, engineering, and mathematics; (4) a comprehensive general education; (5) the ability to continue learning in response to professional needs as well as personal desire for self-improvement; and (6) an understanding of personal and professional responsibility to society.

Programs. Programs in the Department of Computer Science and Engineering follow the four-year curricula listed below. These include required and elective courses in the basic, pure, and applied sciences, as well as the humanities, electrical engineering, computer science, and computer engineering. Emphasis is on developing a mastery of the key principles underlying the organization, operation, and application of modern computers to real problems, with a solid grounding in math and science to permit a quantitative analysis of such solutions. In addition, central to both programs is the development of the ability to function, both independently and in multidisciplinary teams, and to be prepared for continued change in future computing technology and what effects it will have on all aspects of society. Opportunities for specialization in several professional computer disciplines are available. Students are individually assisted and advised in their choices of elective courses.

The Department of Computer Science and Engineering offers concentrations in five areas: Bioinformatics and Computational Biology, Media Computing, Mobile Computing, Cloud Computing, and Cyber Security. Each concentration is designed to offer a structured set of elective courses around an organized theme. Upon a student’s successful completion of a CS/CPEG program with a chosen concentration, the concentration will appear on the student’s transcript.

Further information about computer science and computer engineering programs may be found on the Web at cse.nd.edu.

PROGRAM IN COMPUTER SCIENCE

The Program in Computer Science focuses on the application of computers to real problems, especially in the design, development, and use of software. The program is designed to foster an understanding of the key properties of algorithms (the mathematical statements of how problems are to be solved), and how to recognize and design good algorithms to solve real problems in efficient fashions. The program also includes developing the ability to engineer large, efficient, portable, and scalable pieces of software that implement good algorithms in ways that are useful to the end users, and to do so in ways that use modern software development tools and techniques.

First Year of Studies

First-year students intending to major in computer engineering or in computer science when they become sophomores will find first-year course requirements on the first page of the College of Engineering section.

The following class schedule is applicable to the EG class of 2019.

COMPUTER ENGINEERING PROGRAM

Sophomore Year

First Semester

CSE 20311. Fundamentals of Computing  4
CSE 20110. Discrete Mathematics  3
MATH 20550. Calculus III  3.5
PHYS 10320. General Physics II  4
Arts and Letters course +  3

Second Semester

CSE 20221. Logic Design  4
MATH 20580. Introduction to Linear Algebra and Differential Equations  3.5
Arts and Letters course +  3
CSE 20289. Systems Programming  3
CSE 20312. Data Structures  4

Junior Year

First Semester

CSE 30321. Computer Architecture  4
EE 20224. Electrical Circuit Analysis  2
Free Elective  3
Arts and Letters course +  3
CSE Elective  3
EE 20225. Intro to Electrical Engineering  2

Second Semester

EE 20242. Electronics  4
CSE 30341. Operating System Principles  3
EE 20234. Electric Circuits  3
ACMS 30440. Probability and Statistics  3
Arts and Letters course +  3

EE 20223. Electric Circuits  3
ACMS 30440. Probability and Statistics  3
Arts and Letters course +  3
### Electrical Engineering

#### Senior Year

**First Semester**
- EE 30344. Signals and Systems 3
- CSE Electives* 9
- Free Elective 3

**Second Semester**
- CSE 40522. CPEG Capstone 4
- CSE 40175. Ethics and Professional Issues 3
- CSE Elective* 3
- Arts and Letters course+ 3

Total Program Credits: 132

#### COMPUTER SCIENCE PROGRAM

**Sophomore Year**

**First Semester**
- CSE 20311. Fundamentals of Computing 4
- CSE 20110. Discrete Mathematics 3
- MATH 20550. Calculus III 3.5
- PHYS 10320. General Physics II 4
- Arts and Letters course+ 3

**Second Semester**
- CSE 20221. Logic Design 4
- MATH 20580. Introduction to Linear Algebra and Differential Equations 3.5
- Arts and Letters course+ 3
- CSE 20312. Data Structures 4

Total Program Credits: 17.5

**Junior Year**

**First Semester**
- CSE 30321. Computer Architecture I 4
- CSE Elective* 3
- Technical Elective 3
- Arts and Letters course + 3
- CSE Elective 3

**Second Semester**
- CSE 30151. Theory of Computing 3
- CSE 30341. Operating System Principles 3
- CSE 30332. Programming Paradigms 3
- ACMS 30440. Probability and Statistics 3
- Arts and Letters course + 3

**Senior Year**

**First Semester**
- CSE 40113. Algorithms 3
- CSE Electives* 6
- Technical Elective 3
- Free Elective 3

**Second Semester**
- CSE 40175. Ethics and Professional Issues 3
- CSE Electives* 6
- Arts and Letters course+ 3

Total Program Credits: 129

#### COURSE DESCRIPTIONS

All of the courses associated with this academic program can be found online at registrar.nd.edu/students/class_search.php. The scheduled classes for a given semester may be found by clicking on “Class Search” and selecting the subject Computer Science and Engineering. Course descriptions can be found by clicking on the subject code and course number in the search results.

---

**Statement of Goals and Objectives.** The goals of the Department of Electrical Engineering's academic programs are to provide quality education and to foster leading-edge research as means of training highly qualified engineers and leaders of tomorrow, in keeping with the mission of the University of Notre Dame. The educational objectives through which this goal is met are:

- Graduates will successfully participate in the electrical engineering profession.
- Graduates will enroll in and complete high quality MS, PhD, JD, MBA and MD programs.
- Graduates will exploit the breadth in their education to secure a diverse set of initial positions and will demonstrate professional agility in adapting to varied career paths and changing professional landscapes.
The Department of Electrical Engineering offers programs of study that lead to the degrees of bachelor of science and master of science in electrical engineering and doctor of philosophy. The program leading to the bachelor of science degree is accredited by the Engineering Accreditation Commission of ABET, http://www.abet.org.

### Program in Electrical Engineering
The four-year curriculum, listed below, includes required and elective courses in the pure and applied sciences, the humanities, and electrical engineering. Emphasis is on the mastery of fundamental principles, with added depth and provision for specialization in the major professional areas of communications, control systems, electronic circuit design and analysis, microelectronics and integrated circuit fabrication, photonics, and signal image processing. Students are individually assisted and advised in their choices of elective courses. Departmental facilities include laboratories for electronics, circuits, electrophysics, control systems, communications, integrated circuit fabrication, photonics, microwave circuit/device characterization, and digital signal/image processing.

Further details about the electrical engineering program may be found on the Web at [ee.nd.edu](http://ee.nd.edu).

The following course schedule is applicable to the EG class of 2019.

#### First Year of Studies
First-year students intending to major in electrical engineering when they become sophomores will find first-year course requirements on the first page of the College of Engineering section.

#### Sophomore Year

<table>
<thead>
<tr>
<th>Semester</th>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Semester</td>
<td>MATH 20550. Calculus III</td>
<td>3.5</td>
<td></td>
</tr>
<tr>
<td></td>
<td>PHYS 10320. General Physics II</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td></td>
<td>CSE 20232. C/C++ Programming</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>EE 20224. Introduction to Electric Circuit Analysis</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>EE 20225. Introduction to Electrical Engineering</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Arts and Letters course+</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>17.5</strong></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 20580: Introduction to Linear Algebra and Differential Equations</td>
<td>3.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PHYS 20330. General Physics III</td>
<td>3.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EE 20242. Electronics</td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EE 20234. Electric Circuits</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CSE 20221. Logic Design</td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>18</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Junior Year

<table>
<thead>
<tr>
<th>Semester</th>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Semester</td>
<td>MATH 30650. Differential Equations</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>EE 30344. Signals and Systems</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>EE 30347. Fundamentals of Semiconductors</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>EE 30348. Electromagnetic Fields</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Arts and Letters course+</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>15</strong></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EE 30363. Random Phenomena in EE</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electrical Engineering Electives*</td>
<td>6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Technical Elective</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Arts and Letters course+</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>15</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Senior Year

<table>
<thead>
<tr>
<th>Semester</th>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Semester</td>
<td>EE 41430. Senior Design I</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Electrical Engineering Electives*</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Engineering Science Elective†</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Arts and Letters course+</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>15</strong></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Second Semester</th>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EE 41440. Senior Design II</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electrical Engineering Electives*</td>
<td>6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Technical Elective†</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Arts and Letters course+</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>15</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Total for four years: 131.5 semester hours.

* At least one electrical engineering elective must be chosen from EE 30342, 40446, 40455, 40458, and 40468.

† The engineering science and technical elective course lists may be found on the Electrical Engineering website.

### COURSE DESCRIPTIONS

All of the courses associated with this academic program can be found online at [registrar.nd.edu/students/class_search.php](http://registrar.nd.edu/students/class_search.php). The scheduled classes for a given semester may be found by clicking on “Class Search” and selecting the subject Electrical Engineering (Non-Departmental). Course descriptions can be found by clicking on the subject code and course number in the search results.

* Certain graduate courses are open to advanced undergraduates with permission of the department chair.
## Dual Degree Programs

### DUAL DEGREE PROGRAM WITH THE COLLEGE OF ARTS AND LETTERS

**Coordinators:**
- Michael Ryan
  - Assistant Dean
  - College of Engineering
- Ava Preacher
  - Assistant Dean
  - College of Arts and Letters

**Program of Studies.** The five-year dual degree program between the College of Arts and Letters and the College of Engineering enables the student to acquire degrees from both colleges—the bachelor of arts from the College of Arts and Letters and the bachelor of science degree in a chosen program of the College of Engineering.

This combination program, instituted in 1952, offers students the advantages of both a liberal and a technical education. The student completing one of these combination programs has a background in the humanities and social sciences as well as a degree from one of the programs offered by the College of Engineering. Advisors for the program are available for consultation about the advisability of entering the program and about meeting the particular requirements of each student pursuing this program.

Qualified students are eligible to receive modest scholarship support from the John J. Reilly Endowed Scholarship program during their third, fourth, and fifth years of study.

The decision to enter the program ideally should be made prior to beginning the sophomore year, although students can also enter the program at a later stage. Three sets of requirements must be met by students in the program: University requirements, Arts and Letters requirements and Engineering requirements, as the following table indicates.

### University Requirements

<table>
<thead>
<tr>
<th>Subject</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Philosophy</td>
<td>6</td>
</tr>
<tr>
<td>Theology</td>
<td>6</td>
</tr>
<tr>
<td>Writing and Rhetoric</td>
<td>3</td>
</tr>
<tr>
<td>University Seminar+</td>
<td>3</td>
</tr>
<tr>
<td>History</td>
<td>3</td>
</tr>
<tr>
<td>Social Science</td>
<td>3</td>
</tr>
<tr>
<td>Literature or Fine Arts</td>
<td>3</td>
</tr>
<tr>
<td>Moreau First Year Experience</td>
<td>2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>42/45</td>
</tr>
</tbody>
</table>

### Arts and Letters Requirements

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSEM 23101</td>
<td>3</td>
</tr>
<tr>
<td>Literature or Fine Arts*</td>
<td>3</td>
</tr>
<tr>
<td>History or Social Science*</td>
<td>3</td>
</tr>
<tr>
<td>Language**</td>
<td>6/9</td>
</tr>
<tr>
<td>Major (minimum)</td>
<td>27</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>42/45</td>
</tr>
</tbody>
</table>

### Engineering Requirements

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 10171</td>
<td>4</td>
</tr>
<tr>
<td>MATH 10550, 10560, 20550, 20580</td>
<td>15</td>
</tr>
<tr>
<td>PHYS 10310, 10320</td>
<td>8</td>
</tr>
<tr>
<td>EG 10111, 10112</td>
<td>6</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>33</td>
</tr>
</tbody>
</table>

### Schematic Program of Studies

The exact sequence of courses will vary based on the specific majors selected.

#### First Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>WR 13100. Writing and Rhetoric</td>
<td>3</td>
</tr>
<tr>
<td>Intro to Theology/Philosophy</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 10171. General Chemistry: Fundamental Principles</td>
<td>4</td>
</tr>
<tr>
<td>EG 10112. Introduction to Engineering Systems I</td>
<td>3</td>
</tr>
<tr>
<td>MATH 10550. Calculus I</td>
<td>4</td>
</tr>
<tr>
<td>Moreau First Year Experience</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>18</td>
</tr>
</tbody>
</table>

#### Second Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>University Seminar (Theo/Philo recommended)*</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 10122. General Chemistry: Biological Processes</td>
<td>3</td>
</tr>
<tr>
<td>EG 10112. Introduction to Engineering Systems II</td>
<td>3</td>
</tr>
<tr>
<td>MATH 10560. Calculus II</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 10310. General Physics I</td>
<td>4</td>
</tr>
<tr>
<td>Moreau First Year Experience</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>18</td>
</tr>
</tbody>
</table>

#### Third Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Modern Language</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 10320. General Physics II</td>
<td>4</td>
</tr>
<tr>
<td>MATH 20550. Calculus III</td>
<td>3.5</td>
</tr>
<tr>
<td>Engineering Program†</td>
<td>3</td>
</tr>
<tr>
<td>Engineering Program</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>18.5</td>
</tr>
</tbody>
</table>

#### Fourth Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Theology/Philosophy</td>
<td>3</td>
</tr>
<tr>
<td>CSEM 23101. College Seminar</td>
<td>3</td>
</tr>
<tr>
<td>Modern Language</td>
<td>3</td>
</tr>
<tr>
<td>MATH 20580. Linear Algebra and Differential Equations</td>
<td>3.5</td>
</tr>
<tr>
<td>Engineering Program</td>
<td>3</td>
</tr>
<tr>
<td>Engineering Program</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>18.5</td>
</tr>
</tbody>
</table>

#### Fifth Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>History/Social Science*</td>
<td>3</td>
</tr>
<tr>
<td>History/Social Science*</td>
<td>3</td>
</tr>
<tr>
<td>Engineering Program</td>
<td>3</td>
</tr>
<tr>
<td>Arts and Letters Major†</td>
<td>3</td>
</tr>
<tr>
<td>Engineering Program</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>18</td>
</tr>
</tbody>
</table>

#### Sixth Seminar

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Philosophy/Theology</td>
<td>3</td>
</tr>
<tr>
<td>Engineering Program</td>
<td>3</td>
</tr>
<tr>
<td>Engineering Program</td>
<td>3</td>
</tr>
<tr>
<td>Arts and Letters Major</td>
<td>3</td>
</tr>
<tr>
<td>Arts and Letters Major</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>18</td>
</tr>
</tbody>
</table>

#### Seventh Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Literature*</td>
<td>3</td>
</tr>
<tr>
<td>History/Social Science</td>
<td>3</td>
</tr>
<tr>
<td>Engineering Program</td>
<td>3</td>
</tr>
<tr>
<td>Engineering Program</td>
<td>3</td>
</tr>
<tr>
<td>Arts and Letters Major</td>
<td>3</td>
</tr>
<tr>
<td>Arts and Letters Major</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>18</td>
</tr>
</tbody>
</table>

#### Eighth Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fine Arts*</td>
<td>3</td>
</tr>
<tr>
<td>Engineering Program</td>
<td>3</td>
</tr>
<tr>
<td>Engineering Program</td>
<td>3</td>
</tr>
<tr>
<td>Engineering Program</td>
<td>3</td>
</tr>
<tr>
<td>Arts and Letters Major</td>
<td>3</td>
</tr>
<tr>
<td>Arts and Letters Major</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>18</td>
</tr>
</tbody>
</table>

#### Ninth Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engineering Program</td>
<td>3</td>
</tr>
<tr>
<td>Engineering Program</td>
<td>3</td>
</tr>
<tr>
<td>Engineering Program</td>
<td>3</td>
</tr>
<tr>
<td>Arts and Letters Major</td>
<td>3</td>
</tr>
<tr>
<td>Arts and Letters Major</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>18</td>
</tr>
</tbody>
</table>

#### Tenth Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engineering Program</td>
<td>3</td>
</tr>
<tr>
<td>Engineering Program</td>
<td>3</td>
</tr>
<tr>
<td>Engineering Program</td>
<td>3</td>
</tr>
<tr>
<td>Arts and Letters Major</td>
<td>3</td>
</tr>
<tr>
<td>Arts and Letters Major</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>18</td>
</tr>
</tbody>
</table>

+ The University Seminar may be selected from an appropriate history, social science, fine arts or literature course, or the first course in theology or philosophy.

* The University degree requirement is one course in literature or fine arts and one each in history and social science. The College of Arts and Letters requires a minimum of one course in each subject area, plus one additional course in history or social science.

** Two courses in the intermediate or advanced series complete the requirement. Beginning or elementary series require three semesters' work to fulfill the language requirement.

† Courses specified by the student's major engineering department.

†† Courses necessary to fulfill the requirements for a major in the student's major arts and letters department.
DUAL DEGREE PROGRAM WITH THE COLLEGE OF SCIENCE

Coordinators:
- Michael Ryan
  Assistant Dean
  College of Engineering
- Malgorzata Dobrowolska-Furdyna
  Associate Dean
  College of Science

Program of Studies. The five-year dual degree program between the College of Science and the College of Engineering enables the student to acquire degrees from both colleges—the bachelor of science from the College of Science and the bachelor of science degree in a chosen program of the College of Engineering.

This combination program, instituted in 2013, offers students the advantages of the liberal arts aspects of natural science and mathematics education coupled with a strong technical education. Because a student may enter the program from either college, both colleges have agreed to a certain degree of flexibility in allowing students to meet degree requirements. The following guidelines apply to all students intending to pursue this dual degree program, regardless of the student's initial college:

(1) Students must complete the degree requirements of both colleges, including University requirements (satisfied only once for both degrees), college requirements (with liberal appropriate substitutions for similar courses), and major requirements (with limited appropriate substitutions for similar content). Students may double-count more than one course between both degrees as appropriate to eliminate unnecessary duplication in course content.

(2) Students must earn 30 usable (degree-appropriate) credits past engineering degree requirements. Usable credits are defined as credits—including AP, IB, credit-by-examination and course credits—that are of high enough level that they could be applied to degree requirements. For example, additional AP credits in economics could be used to satisfy a free elective credit in a degree program, but AP credit for statistics (ACMS 101/45) cannot be used in either degree program because the class level is lower than the statistics requirements for any degree program in science or engineering.

(3) Students must complete sequences of courses in mathematics, chemistry and physics, as described in the course sequences below and the corresponding table on the following page. This requirement ensures that all necessary material is covered through a sequence of classes, and that students do not duplicate content by taking classes from more than one approved sequence.

(4) The exact set of courses a student must complete to earn both degrees will be determined by agreement between the appropriate associate/assistant deans of each college and will, naturally, depend on the pair of majors selected. Ordinarily, a student will present a plan of study that incorporates the above rules for approval.

Approved Math Sequences:
1. MATH 10550, 10560, 20550, 20580, 30650, CE, CHEG, EE
   1a. MATH 10550, 10560, 20550, 20580
   AERO, CPEG, CS, EVEG, EVES, ME

2. MATH 10550, 10560, 20550, 20610, 20750
3. MATH 10550, 10560, ACMS 20550, 20750, 20620
4. MATH 10550, 10560, 20550, PHYS 20451, 20452

Approved Chemistry Sequences:
1. CHEM 10171/11171, 10122
   All EG (except CHEG)
2. CHEM 10171/11171, 10122, 10172/11172, 20273
   CHEG
3. CHEM 10171/11171, 10172/11172
4. CHEM 10181/11181, 10182/11182, 20283/22283, 20284/22284

Approved Physics Sequences:
1. PHYS 10510, 10320
   All EG (except EE)
2. PHYS 10510, 10320, 20330
3. PHYS 10411, 10424, 20435, 20464

DUAL DEGREE PROGRAM WITH THE MENDOZA COLLEGE OF BUSINESS

Coordinators:
- Kristin McAndrew
  Director of Admissions
  Master of Business Administration Program
- Michael Ryan
  Assistant Dean
  College of Engineering

Program of Studies. The five-year dual degree program between the Mendoza College of Business and the College of Engineering enables the student to earn the bachelor of science in a chosen field of the College of Engineering and the master of business administration.

This program, instituted in 1991, offers students the opportunity to better integrate study in engineering and in management. The student completing this program has a background in the management sciences, as well as the first professional degree in one of the fields of engineering. Because it is a demanding program, only those students of superior scholastic ability, who have both the aptitude and motivation necessary for the combined graduate and undergraduate program, should apply. Advisors for the program are available for consultation about the advisability of applying for the program and about meeting the particular needs of each student pursuing this program.

This program is open only to those currently enrolled Notre Dame students who have completed three years of a degree program in the College of Engineering. Students interested in the MBA/engineering program should apply to the MBA program during their junior year. To facilitate the application process, students should take the Graduate Management Admission Test (GMAT) by December of their junior year.

An applicant who is not admitted to the dual degree engineering/MBA program continues in the undergraduate engineering program and completes his or her undergraduate engineering program in the usual four-year time frame.

As a general rule, it is expected that a student accepted to this program will take two courses required for the undergraduate engineering degree during the summer session following the junior year. The following schedule of classes is an example of how a program might be accomplished.

* AERO and ME students need not take AME 30314 because it duplicates content of MATH/ACMS 20750. However, they must take the 0-credit Vibrations and Controls make-up sequences through AME.

To Table of Contents
Students in the five-year engineering/MBA program are also required to:

(1) Complete a minimum of 48 MBA credit hours and maintain a GPA of at least 3.0 to successfully complete the program.

(2) Take only MBA courses in their fourth year and be able to complete 16 MBA credits plus all outstanding engineering degree requirements in the fifth year.

(3) Maintain full-time student status (minimum course load of 12 credit hours per semester).

**First Year, Sophomore Year, Junior Year:**

As outlined for individual engineering degree programs in this Bulletin. 98–104 credit hours.

**Summer Session Following Junior Year:**

- Arts and Letters course+ 3
- Arts and Letters course+ 3
- Math Review Workshop* 0
- Accounting Review Workshop* 0

The MBA curriculum divides each semester into two modules.

**Senior Year**

36 credits, all MBA courses

**First Semester, Module 1:**
- ACCT 60100, Financial Accounting 2
- MBET 60340. Conceptual Foundation of Business Ethics 2
- MGT 60100. Statistics 2
- MGT 60300. Organizational Behavior 2

**First Semester, Interterm Week:**
- Professional Development Seminar 1
- Communications Seminar++ 1

**First Semester, Module 2:**
- ACCT 60200. Cost Accounting 2
- FIN 60400. Finance I 2
- FIN 60210. Microeconomic Analysis 2
- MARK 60100. Marketing Management 2

**Second Semester, Module 3:**
- FIN 70600. Finance II 2
- FIN 60220. Macroeconomic Analysis 2
- MGT 60900. Strategic Decision Making 2
- Free Elective 2

**Second Semester, Interterm Week:**
- Values in Decision Making 1
- Required Course (TBD) 1

**Second Semester, Module 4:**
- MGT 60400. Leadership and Teams 2
- MGT 60700. Operations Management 2
- Free Elective 2

**Fifth Year**

12 credits, MBA courses and remainder engineering courses

**First Semester, Module 1:**
- MGT 60200. Problem Solving 2
- Management Communication Elective 2
- (FLOATING OPTIONAL ELECTIVE* 2)

*Students have the option to take one additional two-credit-hour elective now or in any remaining module.

**First Semester, Module 2:**
- Ethics Elective 2
- Management Communication Elective 2
- (FLOATING OPTIONAL ELECTIVE 2)

**Second Semester, Module 3:**
- Free Elective 2
- Free Elective 2
- (FLOATING OPTIONAL ELECTIVE 2)

**Second Semester, Interterm Week:**
- (OPTIONAL: Two one-credit-hour electives OR Corporate Case Studies OR Offshore Program: China or Brussels 2)

**Second Semester, Module 4:**
- Free Elective 2
- Free Elective 2
- (FLOATING OPTIONAL ELECTIVE 2)

**Fifth Year**

12 credits, MBA courses and remainder engineering courses

**First Semester, Module 1:**
- MGT 60200. Problem Solving 2
- Management Communication Elective 2
- (FLOATING OPTIONAL ELECTIVE* 2)

*Students have the option to take one additional two-credit-hour elective now or in any remaining module.

**First Semester, Module 2:**
- Ethics Elective 2
- Management Communication Elective 2
- (FLOATING OPTIONAL ELECTIVE 2)

**Second Semester, Module 3:**
- Free Elective 2
- Free Elective 2
- (FLOATING OPTIONAL ELECTIVE 2)

**Second Semester, Interterm Week:**
- (OPTIONAL: Two one-credit-hour electives OR Corporate Case Studies OR Offshore Program: China or Brussels 2)

**Second Semester, Module 4:**
- Free Elective 2
- Free Elective 2
- (FLOATING OPTIONAL ELECTIVE 2)

Total for both degrees: 128–134 undergraduate, 48 MBA

One MBA course will be accepted as an elective or technical elective by each College of Engineering program. No more than two MBA courses may be accepted toward an undergraduate degree from the College of Engineering. Students are advised to check specific program requirements.

+See “Arts and Letters Core” on the first page of the College of Engineering section.

++Special one/two-week courses. All other MBA courses are seven weeks in length.

*Occurs during August Orientation
Officers of Administration

PETER KILPATRICK, Ph.D.
McCloskey Dean of the College of Engineering

YIH-FANG HUANG, Ph.D.
Senior Associate Dean of the College of Engineering

MARK J. McCREADY, Ph.D.
Senior Associate Dean of the College of Engineering

JAY B. BROCKMAN, Ph.D.
Associate Dean of the College of Engineering

DAVID MURPHY, BA, MBA
Associate Dean of the College of Engineering

LEO H. McWILLIAMS, Ph.D.
Assistant Dean of the College of Engineering

MICHAEL B. RYAN
Assistant Dean of the College of Engineering

ROBERT J. CUNNINGHAM, BSEE, MBA
Director of Budget and Operations

GRETA TRYGVASON, Ph.D.
Chair of the Department of Aerospace and Mechanical Engineering

EDWARD J. MAGINN, Ph.D.
Chair of the Department of Chemical and Biomolecular Engineering

JOANNE J. WESTERINK, Ph.D.
Chair of the Department of Civil and Environmental Engineering and Earth Sciences

KEVIN W. BOWYER, Ph.D.
Chair of the Department of Computer Science and Engineering

THOMAS E. FUJA, Ph.D.
Chair of the Department of Electrical Engineering
Advisory Council

Maj. Gen. JOSEPH A. AHEARN
U.S. Air Force (retired)
Austin, Texas

THOMAS P. BERNHARDT
Austin, Texas

JAMES P. BRADLEY
Dallas, Texas

PATRICK J. BRENNA
Towson, Maryland

ANGELO J. BUFALINO
Lake Forrest, Illinois

MICHAEL J. CHMELL
Rockford, Illinois

DAVID C. CLARKE
San Jose, California

MATTHEW E.. CONNORS
Hingham, Massachusetts

TIMOTHY J. CONNORS
Menlo Park, California

COURTNEY A. DARLINGTON
Chicago, Illinois

THOMAS DEGNAN JR.
Moorestown, New Jersey

LEO A. DILLING
Lusby, Maryland

WILLIAM E. DOTTERWEICH
Fort Wayne, Indiana

DENNIS O. DOUGHTY
Osprey, Florida

GEORGE R. DUNN JR.
Kensington, Maryland

ANTHONY F. EARLEY JR.
Bloomfield Hills, Michigan

MARK E. ENZEN
Webster, New York

EDWARD B. FITZPATRICK JR.
Bayville, New York

MARK A. GALASSO
Cohocttan, New York

DONALD L. GOTHARD
Washington, Michigan

VINCENT N. GREGGO
Wilmingon, Delaware

SUZANNE M. HULL
New Canaan, Connecticut

JAMES H. HUNT JR.
McLean, Virginia

JOHN M. KELLY JR.
Houston, Texas

CHARLES B. KITZ
West Bloomfield, Michigan

LAWRENCE (Larry) J. KUPFER
Kingshill, Virgin Islands

DENNIS M. MALLOY
Houston, Texas

KENNETH R. MARLO
Pittsburgh, Pennsylvania

JOHN A. MARTELL
Cassopolis, Indiana

REX MARTIN
Elkhart, Indiana

DONALD J. MASSARO
Atherton, California

HENRY J. MASSMAN IV
Mission Hills, Kansas

LEO J. MCKERNAN
Naples, Florida

CHARLES R. McNAMEE
Sun Valley, Idaho

WILLIAM D. MENSCH JR.
Gold Canyon, Arizona

WAYNE W. MURDY
Cherry Hills Village, Colorado

DENNIS E. MURPHY
Omaha, Nebraska

VINCENT J. NAIMOLI
Tampa, Florida

MYRON C. NOBLE
South Bend, Indiana

MICHAEL A. O’SULLIVAN
Palm Beach Garden, Florida

JOHN D. REMICK
Rochester, Minnesota

THOMAS M. ROHRS
Los Almi, California

WILLIAM G. ROTH
Marco Island, Florida

ROBERT N. SCHLECKSER
Dallas, Texas

R. DAVID SHEEHAN
Tulsa, Oklahoma

CHRISTOPHER SLATT
Burien, Washington

SEDRA M. SPRUELL
Warren, New Jersey

RICHARD L. STANLEY
Simpsonville, South Carolina

MATTHEW SZULIK
Raleigh, North Carolina

TIMOTHY J. STEIGAUF
Oakdale, Minnesota

LEO A. DILLING

THOMAS DEGNAN JR.

TIMOTHY J. CONNORS
The University of Notre Dame awarded its first bachelor of science degree in 1865. Before that time, courses had been taught in mathematics (from 1842), in biology (from 1844), and in chemistry (from 1850). In 1867, a program in general science was formulated. Subsequently, specialized programs were added, leading to the degree of bachelor of science in botany and in zoology (both now covered by one degree in biological sciences), in environmental sciences, in biochemistry, in chemistry, in physics, in mathematics, and in preprofessional studies.

**Departments of the College of Science**

**The Department of Applied and Computational Mathematics and Statistics** is housed in Hurley Hall, in the academic center of campus. The facilities include office space for faculty members, graduate students and postdoctoral associates, as well as space for these department members to collaborate with undergraduate students in research and educational activities. The department has access to the computing resources of the Center for Research Computing and computing facilities dedicated to department research groups.

**The Department of Biological Sciences**, located in the Galvin Life Science Center, has well-equipped laboratories for undergraduate and graduate research. The facilities include controlled-environment rooms; an optics facility containing confocal microscopes, scanning and transmission electron microscopes; molecular analysis facilities for DNA sequencing, microarrays, cell sorting; and extensive data storage and retrieval equipment.

**The Hank Center for Environmental Science** provides more than 20,000 square feet of state-of-the-art research space for aquatic, terrestrial, and environmental studies that includes greenhouses, wet laboratories, and a field sample processing room.

**The Freimann Life Science Center** provides additional laboratories, vertebrate animal care, and associated specialized modern research facilities to serve the expanding needs of life science research at Notre Dame.

**The Jordan Hall of Science** contains 16 state-of-the-art biology laboratories for teaching undergraduate and graduate life science laboratory courses. In addition, the collections of museum specimens, including the Greene-Nieuwland Herbarium and the Museum of Biodiversity, are available for research and teaching, housed in superb facilities in Jordan Hall.

The Department of Chemistry and Biochemistry, located in Nieuwland Science Hall and Stepan Hall of Chemistry and Biochemistry, has laboratories devoted to research in several areas of chemistry: physical, inorganic, organic, and biochemistry. The laboratories are equipped with all necessary facilities for undergraduate students, graduate students, postdoctoral investigators, and faculty. Undergraduate researchers have access to seven high-field NMR spectrometers and three state-of-the-art single crystal X-ray diffractometers, plus many other pieces of equipment such as infrared, ultraviolet, Raman, mass spectrometer; photoelectron spectroscopy; potentiostats; analytical and preparative HPLC and GC equipment; special apparatus for studying mechanisms and rates of reactions; and cell culture facilities. For theoretical work, two large parallel cluster supercomputers are available. The facilities of the Radiation Research Laboratory are used by some faculty of the chemistry department for research in physical chemistry.

The new Jordan Hall of Science houses all of the undergraduate teaching laboratories for chemistry and biochemistry. Included are spacious facilities for introductory and organic chemistry; analytical, physical, and inorganic chemistry; and biochemistry. The building also contains a new NMR spectrometer. Also within Jordan Hall are two large lecture rooms specially designed for teaching introductory science courses, along with a 150-seat multimedia visualization center.

**The Department of Mathematics** is housed in Hayes-Healy Center/Hurley Hall, conveniently located in central campus. The facilities for undergraduate and graduate instruction and research in mathematics include a first-rate research library; a faculty room; offices for the faculty, postdoctoral investigators, and other visitors, graduate students, and staff; several research seminar and conference rooms; and several large classrooms with state-of-the-art media capability.

**The Department of Physics**, located in Nieuwland Science Hall, has teaching facilities and laboratories for both undergraduate and graduate research. There are facilities for experimental work in astrophysics, biophysics, condensed-matter physics, elementary particle physics, and nuclear physics. There are three atomic spectroscopy laboratories, and some additional use is made of facilities at Argonne National Laboratory. Elementary particle experiments are done at the Stanford and Fermi national laboratories, and at CERN in Geneva, Switzerland. Detector development for the major accelerators is also being done in the department. The Nuclear Science Laboratory has two accelerators dedicated to nuclear astrophysics. This facility is home to the second largest low-energy nuclear physics program in the country. A variety of solid state facilities are available for the study of metals, high-Tc superconductors, and semiconductors. Off-site facilities at Argonne, the National High Magnetic Field Laboratory, and the National Institutes of Standards and Technology are also heavily used. Notre Dame is a partner in the Large Binocular Telescope project. This will be one of the most capable facilities in the world for cutting-edge cosmology and astrophysics research. Research is conducted in many major areas of theoretical physics, including all of the above areas as well as statistical mechanics, field theory, general relativity, and astrophysics. The department has a substantial machine shop and research library and a variety of staff technicis. Many faculty members and research groups have computing facilities, and all have access to the Office of Information 'Technologies' very large computers.

Jordan Hall of Science houses all of the undergraduate teaching laboratories for physics, including spacious facilities for introductory mechanics, electricity and magnetism, and modern physics. Within Jordan Hall are also a laser and optics lab and an advanced laboratory for physics majors. The building also hosts a rooftop observatory equipped with a dozen small telescopes for introductory astronomy courses, along with a separate dome housing a large, research-quality telescope for physics and astronomy students. Jordan Hall is also home to a 150-seat digital visualization theatre that serves as a planetarium for a variety of astronomy and astrophysics courses.

**The Department of Preprofessional Studies** is located in the Center for Health Sciences Advising in the Jordan Hall of Science. This center centralizes the advising process for all University students interested in the health professions. All courses for students enrolled in the preprofessional program and collegiate sequence programs are provided by the other departments of the College of Science and the other colleges of the University.

**Undergraduate Education**

The aim of the program of undergraduate education in the College of Science is to produce intellectually able graduates who are grounded in the broad fundamental principles of the basic sciences, versed in the advanced concepts of their chosen scientific discipline and educated in the humanitarian and social studies. Each graduate should be a good scientist in his or her own field; a fully developed person, aware of his or her responsibilities to society and prepared to participate fruitfully in the affairs of society.

Education in science at Notre Dame is a coordinated program involving the basic sciences, the chosen advanced science, and the humanitarian and social
The College of Science offers curricula leading to the degree of bachelor of science in each of six undergraduate departments:

- Applied and Computational Mathematics and Statistics
- Biological Sciences
- Chemistry and Biochemistry
- Mathematics
- Physics
- Preprofessional Studies

The following are degree programs offered by these departments:

- Applied and Computational Mathematics and Statistics
- Biochemistry
- Biological Sciences
- Chemistry
- Chemistry combined with Business
- Chemistry combined with Computing
- Environmental Sciences
- Mathematics
- Mathematics (combined with other programs)
- Neuroscience and Behavior
- Physics
- Physics-in-medicine
- Preprofessional Studies
- Science-Business
- Science-Computing
- Science-Education
- Statistics

These degree programs are described in detail in later sections of this Bulletin.

See also the bachelor of science degree programs offered by the College of Engineering:

- Computer Science
- Environmental Geosciences

Each College of Science student must enroll in the department of his or her major beginning with the sophomore year; however, a student may change primary majors in the College of Science at any point up until the last drop day of the 7th semester in consultation with their advisor and dean. Concentrations, second and supplementary majors, and minors may be changed at any time.

The College of Science maintains a website at science.nd.edu. Further information related to programs offered by the college may be found at that location.

Listed below are the allowed options for students interested in double science majors, double majors between colleges, second majors in the College of Science, and supplementary majors and minors in the College of Arts and Letters.

Students pursuing one of these combination programs must have superior scholastic ability and be formally accepted by the dean of both colleges involved. Approval will not be granted if there is substantial overlap between the two programs.

Note: Courses taken toward the completion of an additional major, supplementary major or minor may not also be counted toward the student's other major, supplemental major, supplemental major or minor.

**Double Science Majors.** In certain instances, students will have the option of pursuing majors in two departments of the College of Science. Details on the double science major option and lists of combinations that are normally approved are found under “Special Programs,” later in this section of the Bulletin.

**Dual Degree.** Notre Dame students pursuing majors in two of the undergraduate colleges may qualify for a five-year dual-degree program.

The requirements for a dual degree generally are as follows: The student completes all of the university requirements, all of the requirements for both colleges, all of the requirements for both majors, and the total number of degree credits specified for a dual degree in the two colleges. While the total number of hours required does depend on the two major programs, the minimum required total number of degree credits is set to be 30 degree credits beyond the college total for the college with the greatest required number of degree credits.

**Double Majors in Two Colleges.** Qualified Notre Dame students pursuing majors in one of the other undergraduate colleges or schools may add another major in the College of Science. Additionally, qualified Notre Dame students pursuing a major in the College of Science may also add another major in one of the other undergraduate colleges or schools.

The requirements for a double major between colleges generally are as follows: The student completes all the University requirements, the requirements of his or her college or school, and the requirements of both majors. In general, a single course may not satisfy requirements for both majors.

**Supplementary Majors and Minors.** Qualified Notre Dame students pursuing majors in the College of Science may add a supplementary major or minor. Options include programs offered through the College of Arts and Letters and the Environmental Geosciences minor offered through the College of Engineering.

Science students may not add the Arts and Letters Preprofessional Studies supplementary major.

**Supplementary Majors, Minors, and Concentrations in the College of Science.** In the College of Science, the term “second major” is used for a supplementary major. Three departments offer a second major program specifically for students in the other colleges: Mathematics as a second major, physics as a second major, and environmental sciences as a second major. For details, see the departmental sections of this Bulletin.

Three departments in the College of Science offer concentration programs: Applied and Computational Mathematics and Statistics, Mathematics and Physics. For details, see the departmental sections of this Bulletin.

**Combination Five-Year Program with the Mendoza College of Business.** The College of Science and the Mendoza College of Business have established a competitive cooperative program in which a student may simultaneously earn a bachelor of science and a master of business administration degree. The program is structured so that the student who has completed the three years of a science bachelor’s degree program, if accepted, completes the master of business administration and the bachelor of science in a major in the College of Science in a summer session and two subsequent academic years.

Students who wish to pursue this program should have a superior scholastic record in their major program and must make application to, and be accepted by, the MBA program.

The general sequence of courses in the five-year Science-MBA program may be found under “Dual Degree Program with the Mendoza College of Business,” later in this section of the Bulletin.
University and College Requirements

A minimum of 124 credit hours is required for graduation from the College of Science. A minimum of 60 credit hours must be in science; however, each department may specify more than 60 credit hours for any of its programs.

All College of Science majors must fulfill University requirements, which include:

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>WR 13100</td>
<td>3</td>
</tr>
<tr>
<td>*Theology</td>
<td>6</td>
</tr>
<tr>
<td>*Philosophy</td>
<td>6</td>
</tr>
<tr>
<td>*History</td>
<td>3</td>
</tr>
<tr>
<td>*Social Science</td>
<td>3</td>
</tr>
<tr>
<td>*Fine Arts or Literature</td>
<td>3</td>
</tr>
<tr>
<td>Moreau First Year Experience</td>
<td>2</td>
</tr>
</tbody>
</table>

* One of these courses must be a University seminar.

In addition, all College of Science majors must take courses in:

- Chemistry (10171 and 10172 or 10122) or 10181, 10182)
- Mathematics (10350, 10360 or 10550, 10560 or 10850, 10860)
- Physics (10310, 10320 or 10411, 10424, 20435 or 30210, 30220).

The appropriate sequence for a student depends on the student's major.

The College of Science requires language proficiency through intermediate level in one of the following languages: Arabic, Chinese, French, German, Greek, Irish, Italian, Japanese, Korean, Latin, Portuguese, Russian, and Spanish. "Intermediate proficiency" is defined differently in each of the languages, depending on the complexity of the language and the intensity of the course. Students may complete the language requirement by either completing a course taught at intermediate level or by demonstrating proficiency through placement examination. The college office maintains a list of language courses at intermediate level. (See the college website, science.nd.edu under Academic Information Frequently Asked Questions.)

Students with no previous background in a language should start with a beginning-level course. They take typically either nine credits over a three-semester period, eleven credits over a three semester sequence, or two semesters of an intensive language sequence (10 credits total). Students with Advanced Placement or SAT II credit may receive up to eight credit hours of language toward their degree. If for some reason more than eight credits appear on the transcript, only eight credits will count toward the required 124 credits. Students who arrive with some background in the language they elect, but without AP or SAT II credit, will be placed by departmental examination but will receive no credit hours.

The College of Science will count a maximum of one credit hour from the following types of activity courses:

- Band (Marching and Concert)
- Orchestra
- Chorale
- Glee Club
- Liturgical Choir
- Folk Choir
- Music Lessons and Ensembles
- Dance
- Debate
- Science in the Classroom

Additionally, a maximum of six credit hours of upper-level (30000- or 40000-level) ROTC courses can be counted toward the 124-credit-hour requirement. These courses will be counted as free electives.

The College of Science works with the Center for Social Concerns (see page 27 of the Bulletin) to develop relevant, community-based opportunities. Science majors may count as general electives up to 3 credits for approved Summer Service Learning Program courses (e.g., THEO 33936) or Social Concerns Seminars (e.g., CSC 33951).

Not all science courses will count toward degree credit or science elective credit for science majors. The survey science courses offered as options for non-science majors for their University science requirement will not count as a science elective or toward the minimum science credit hour requirement. Because of overlap in content with required courses for science majors, many of these courses will also not count toward the degree credit requirement (see "Science Degree Credit," later in this section of the Bulletin).

Some major programs have a science elective requirement. For a course to be a science elective, it must meet the following rules: (1) It is offered through one of the departments of the College of Science or through the college itself. (2) It is major’s level; that is, other science majors are required to take this course to meet a major requirement or it has a prerequisite course that is offered for science majors, or the Bulletin description for the course states that it is a science elective in the College of Science. Finally, the departments may place additional restrictions on allowed science electives, e.g., in the Department of Biological Sciences, a science elective must be a non-biology course.

All College of Science courses offered by a major program must be taken at the University of Notre Dame. If a student wants to take a course outside Notre Dame for credit toward the Notre Dame degree, prior approval of the dean’s office must be obtained. This does not apply to the courses taken by a transfer student prior to attending Notre Dame.

Advising. All Notre Dame science majors have been assigned an advisor in the department of their major. All advisors are members of the faculty of the College of Science. In some departments, the director of undergraduate studies for the department advises all students. In others, the director of undergraduate studies or the department office may be contacted to find out the name of the student’s advisor. A complete list of names of advisors is kept on the science website.

Notre Dame students who have questions concerning the choice of a major or considering a change of major are urged to make appointments with the advisors of the departments involved. Students needing help choosing from similar majors may request an advising appointment with the associate or assistant dean of undergraduate studies of the College of Science, 215 Jordan Hall. Any Notre Dame student who is considering a health profession can receive advising in the Center for Health Sciences Advising in 219 Jordan Hall.

Student Organizations and Activities

In addition to participation in University-wide student activities, the undergraduate students of the College of Science may participate in activities directly related to science, including the undergraduate departmental science organizations: the Biology Club, the Notre Dame Chapter of Student Affiliates of the American Chemical Society, the Mathematics Club, the Society of Physics Students, the Premed Club (preprofessional), the Prevet Club, the Science-Business Club, and the Notre Dame Chapter of Alpha Epsilon Delta (premedical honorary fraternity).

Student Council. The Student Council of the College of Science is composed of representatives of the majors of the College of Science. The student council serves as the official body representing the undergraduate students before the administration of the College of Science.

Student Awards and Prizes

The Dean’s Award. Presented to a graduating senior in the College of Science in recognition of exemplary academic achievements, leadership, and service to society.

The Dean’s Research Award. Presented to a graduating senior in the College of Science in recognition of exceptional research that advances scientific knowledge in their field through publications and presentations.

Outstanding Senior Biological Scientist(s). To the senior(s) who has/have demonstrated the most promise in the biological sciences as evidenced by both academic performance and research participation.

Outstanding Biology Student Leader Award. Seniors nominated for this award must be exemplary
Outstanding Biochemist Award. For leadership, academic achievements, research and scholarship in biochemistry.

Outstanding Chemist Award. For academic and research achievements in chemistry as an undergraduate.

William R. Wischerath Outstanding Chemistry Major Award. For academic achievements of a graduating senior chemistry major.

Chemistry-Education Award. For academic achievements in preparation for teaching of chemistry in a secondary education system.

The General Electric Prizes for Honors Majors in Mathematics. Awarded to senior honors majors in the Department of Mathematics who, in the opinion of the members of the faculty, excelled in mathematics during their undergraduate career.

The George Koletis Award in Mathematics. An award established by the late Prof. George Koletis, for a graduating senior who excelled in mathematics and contributed notably to the esprit de corps of the mathematics student body.

The Aumann Prize for First Year Students in Mathematics. A prize given by Ms. Monika Caradonna in honor of her father, Prof. Georg Aumann, awarded on the basis of a competition among First Year honors mathematics students.

The Norman and Beatrice Haaser Mathematics Scholarships. These scholarships, made possible by the generosity of Professor and Mrs. Haaser, are awarded to worthy, needy students majoring in mathematics.

R. Catesby Taliaferro Competition for Sophomore Mathematics Honors Students. Friends and students of the late Professor Taliaferro established this prize, which is awarded to a sophomore mathematics major on the basis of an essay submitted by the student.

J & C Sophomore Award in Mathematics. Exemplary performance in mathematics classes by a non-honors math major sophomore female or minority (African-American, Asian, Hispanic, Native American) student.

Outstanding Senior Physics Major. This award is given to the outstanding senior physics major, who, in the judgment of the departmental faculty, shows the most promise for a distinguished career in physics. Course grades, the opinion of those who have taught the candidates, and any research performance are considered in making the award.

Paul Chagnon Award. An award to be given to a senior physics major for demonstrated character and leadership and for service to the University, the physics department, and to his or her fellow physics majors.

Physics Outstanding Undergraduate Research Award. A monetary award given for excellence in research to an undergraduate physics major.

DiNardo Award. To the outstanding junior preprofessional student.

Emil T. Hofman Scholarships. To six outstanding students pursuing premedical studies.

J.C. Langren, M.D., Scholarships. Awarded to three outstanding science preprofessional students.

The Lawrence H. Baldinger Award. To seniors in the preprofessional program who excelled in scholarship, leadership, and character.

The Patrick J. Niland, M.D., Award. A monetary award given to a preprofessional studies senior to purchase books for the first year of medical school.

The Samuel Chmell, M.D., Award. To an outstanding senior in preprofessional studies who exemplifies high academic achievement and uncompromising integrity within the program.

The Rev. Joseph L. Walter, C.S.C., Award. To a senior with a keen social awareness who shows great promise as a concerned physician.

Glynn Family Honors Program. In the fall of 1983, the University inaugurated an honors program for a small number of outstanding students in the College of Arts and Letters and the College of Science.

A limited number of students with academic intent for each college are identified at the time of admission. Although selection criteria include the promise of outstanding academic performance as demonstrated by standardized test scores and high school performance, the program is looking for more than mere academic ability. It hopes to identify students with a deep intellectual curiosity.

The program offers honors sections to fulfill most of the University and college requirements in the students' freshman and sophomore years. At present, there is the yearlong Honors Seminar (satisfying the writing and literature requirements). Honors Calculus, Honors Philosophy, Honors Theology, Honors Biology, Honors Physics, and an array of Honors Social Science courses. Since these courses are restricted to honors students, they are smaller than non-honors sections and are usually taught in a seminar format. The teachers for honors sections are chosen from the most outstanding teachers in each college. After the first year, each student's academic work will be mainly centered in his or her major field (or fields) of study, but two or more honors electives are also taken during these years.

In the fall of the senior year, there is an "Honors Thesis/Research Seminar," which is followed by the "Senior Seminar" in the spring. The fall seminar is intended to be a spur to the students' capstone project, whereas the senior seminar brings the honors students from diverse majors back together
for some concluding topical discussions. All honors students will also be expected to complete a special six-hour senior research honors project in their major field of study. In science, this is the culmination of a research project begun earlier, and in arts and letters, it is a two-semester project culminating in a thesis. Those writing senior theses work individually under the direction of a faculty advisor of their choosing in their major field. Funds are available for research projects during summers either at Notre Dame or other universities.

In addition to the more narrowly academic features of the honors program, students will be offered various opportunities for broadening personal, cultural, and spiritual growth. Regular colloquia, informal discussions, and cultural excursions are available.

Further information on the structure and content of the Honors Program may be obtained by contacting Prof. Chris Kolda or Prof. Paul Weithman, 323 O'Shaughnessy Hall, Notre Dame, IN 46556, 574-631-5398.

The Environmental Research Center (UNDERC), a University facility, is composed of approximately 7,500 acres located primarily in the Upper Peninsula of Michigan. Research is conducted at UNDERC by undergraduate as well as graduate students on a variety of environmental problems, including the manipulation of ecosystems. Internships are available to support student participation in BIOS 35502, 35503, and 35504 at UNDERC each summer semester.

Study Abroad. Students from any of the majors in the College of Science may participate in one of the University of Notre Dame’s study abroad programs. Science students who go abroad generally do so in one of the two semesters of their junior year. Students applying to medical or dental school during the summer following their junior year (to enter after the senior year) should not study abroad in the spring semester of their junior year. Science students interested in study abroad should discuss their plans with their advisor and with the associate dean, Sr. Kathleen Cannon, 248 Nieuwland Science Hall. Further information can be obtained through Study Abroad, 105 Main Building.

Applied and Computational Mathematics and Statistics

Chair: Andrew Sommese
Associate Chair: Vincenzo Nastri
Director of Graduate Studies: Alan Huckle
Director of Undergraduate Studies: Vincent F. Duncan
Professor of Mathematics: Andrew Sommese
Professors: Steven Buechler; Bei Hu
Associate Professors: Jonathan Hauenstein; Zhiliang Xu; Yongtao Zhang
Assistant Professors: Martina Bukac; Alexandra Jilkine; (20273) 1
Jin; Jun Li; Lizhen Lin; Alan Lindsay; Fang Liu: Dong Quan Ngoc Nguyen; (ALMS 10550, 20750) 3
Daniele Schiavazzi
Assistant Professor of the Practice: Raya Ghiaseddin
Assistant Professor of the Practice: Alan Huckle; Huy Huynh; Ankita Jain; Jeffrey Zheng

Program of Studies. The partnership of applied mathematics, computational mathematics and statistics brings the tools of modeling, simulation and data analysis to bear on real-world problems, producing solutions with the power to predict and explain complex phenomena. These methods, often applied computationally, are being used in a wide variety of areas in business, engineering, the natural sciences, and the social sciences.

The Department of Applied and Computational Mathematics and Statistics (ACMS) offers programs of study leading to the bachelor of science degree in applied and computational mathematics and statistics and to the bachelor of science in statistics. Computational skills, which are often required to solve real-world problems, will be developed continuously throughout the curriculum. For many students, significant work in an area of application will complement their core studies. Graduates of the program will be well prepared for the following post-graduate opportunities.

- Employment and further study in actuarial science and quantitative methods in business and economics.

In addition to the core bachelor of science in ACMS major, ACMS offers a concentration in biological sciences, which will prepare students for further study or employment in computational biology, bioinformatics, ecological modeling, or epidemiology.

ACMS also offers supplementary majors in applied and computational mathematics and statistics and in statistics. Students in numerous areas of study can benefit from advanced study in applied and computational mathematics and statistics. This is true for students in business and the social sciences as well as those in the natural sciences and engineering. These supplementary majors are well suited for these students.

BACHELOR OF SCIENCE WITH A MAJOR IN APPLIED AND COMPUTATIONAL MATHEMATICS AND STATISTICS

The requirements for the degree include courses that develop a strong foundation in the methods of applied mathematics and data analysis, while allowing students to also take courses in a wide variety of application areas. The specific requirements for the bachelor of science in applied and computational mathematics and statistics, beyond the university and college requirements are as follows.

Chemistry (CHEM 10171, 10122 or CHEM 10171, 10172) 1
Physics (PHYS 10310, 10320) 3
Calculus I, II (MATH 10550, 10560) 1
Introduction to Applied Mathematics Methods, I, II (ACMS 20550, 20750)
Scientific Computing (ACMS 20210)
Applied Linear Algebra (ACMS 20620)
Introduction to Probability (ACMS 30530)
Mathematical Statistics (ACMS 30540) or Statistical Methods and Data Analysis 1 (ACMS 30600)
Mathematical/Comp Modeling (ACMS 40730) or Mathematical/Comp Modeling in Neuroscience (ACMS 40740) or Stochastic Modeling (ACMS 40760)
Numerical Analysis (ACMS 40390)
ACMS electives (6 credits in ACMS courses numbered 30000 and above) 2
MATH or ACMS elective (3 credits in MATH or ACMS courses numbered 30000 or above) 2, 3, 4
Science elective (3 credits)
These requirements total 43 credits in ACMS and MATH and 61 credits in Science.

Concentration in biological sciences. The required courses for this concentration are as follows.

Introduction to Chemical Principles (CHEM 10171) 1
Organic Chemistry (CHEM 10172, 20273, 21273) 1

To Table of Contents
Applied and Computational Mathematics and Statistics

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYSICS (PHYS 10310, 10320)</td>
<td>4</td>
</tr>
<tr>
<td>Biological Sciences I, II (BIOS 10161, 10162 or 20201, 21201, 20202, 21202)</td>
<td>3</td>
</tr>
<tr>
<td>Calculus I, II (MATH 10550, 10560)</td>
<td>3</td>
</tr>
<tr>
<td>Introduction to Applied Mathematics Methods, I, II (ACMS 20550, 20750)</td>
<td>3</td>
</tr>
<tr>
<td>Scientific Computing (ACMS 20210)</td>
<td>3</td>
</tr>
<tr>
<td>Applied Linear Algebra (ACMS 20620)</td>
<td>3</td>
</tr>
<tr>
<td>Introduction to Probability (ACMS 30530)</td>
<td>3</td>
</tr>
<tr>
<td>Mathematical/Comp Modeling (ACMS 40730)</td>
<td>3</td>
</tr>
<tr>
<td>or Mathematical/Comp Modeling in Neurosci (ACMS 40740)</td>
<td>3</td>
</tr>
<tr>
<td>or Stochastic Modeling (ACMS 40760)</td>
<td>3</td>
</tr>
<tr>
<td>Numerical Analysis (ACMS 40390)</td>
<td>3</td>
</tr>
<tr>
<td>ACMS electives (6 credits in ACMS courses numbered 30000 and above)</td>
<td>3</td>
</tr>
<tr>
<td>Genetics (BIOS 20303)</td>
<td>3</td>
</tr>
<tr>
<td>Cellular Biology (BIOS 30341)</td>
<td>3</td>
</tr>
<tr>
<td>or Ecology (30312)</td>
<td>3</td>
</tr>
<tr>
<td>Biology Elective (3 credits in BIOS which has BIOS 10162 or BIOS 20202 as a prerequisite)</td>
<td>3</td>
</tr>
<tr>
<td>Elective in Biology, Chemistry or Physics (3 credits)</td>
<td>3</td>
</tr>
<tr>
<td>These requirements total 40 credits in ACMS and MATH and 79 credits in Science.</td>
<td></td>
</tr>
</tbody>
</table>

### ACMS Sample Curriculum:

#### First Year

<table>
<thead>
<tr>
<th>Semester</th>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>First</td>
<td>MATH 10550. Calculus I</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>CHEM 10171. Chemical Principles</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>PHYS 10310. General Physics I</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>History or Social Science</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>WR 13100. Writing and Rhetoric</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Moreau First Year Experience</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td><strong>19</strong></td>
<td></td>
</tr>
<tr>
<td>Second</td>
<td>MATH 10560. Calculus II</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>CHEM 10172 or 10122</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>PHYS 10320. General Physics II</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>History or Social Science</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Philosophy or Theology</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Moreau First Year Experience</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td><strong>19</strong></td>
<td></td>
</tr>
</tbody>
</table>

#### Sophomore Year

<table>
<thead>
<tr>
<th>Semester</th>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>First</td>
<td>MATH 10550. Applied Math Methods I</td>
<td>3.5</td>
</tr>
<tr>
<td></td>
<td>ACMS 20620. Applied Linear Algebra</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Language</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Philosophy or Theology</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Moreau First Year Experience</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td><strong>15.5</strong></td>
<td></td>
</tr>
<tr>
<td>Second</td>
<td>MATH 10560. Calculus II</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>CHEM 10172</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>BIOS 10162. Biological Sciences II</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>History or Social Science</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Philosophy or Theology</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Moreau First Year Experience</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td><strong>19</strong></td>
<td></td>
</tr>
</tbody>
</table>

### Sophomore Year

<table>
<thead>
<tr>
<th>Semester</th>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>First</td>
<td>ACMS 20550. Applied Math Methods I</td>
<td>3.5</td>
</tr>
<tr>
<td></td>
<td>ACMS 20620. Applied Linear Algebra</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>CHEM 20273/21273</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Language</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Philosophy or Theology</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>16</strong></td>
<td></td>
</tr>
<tr>
<td>Second</td>
<td>ACMS 20750. Applied Math Methods II</td>
<td>3.5</td>
</tr>
<tr>
<td></td>
<td>ACMS 20210. Scientific Computing</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>ACMS 30530. Introduction to Probability</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Language</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Philosophy or Theology</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>16</strong></td>
<td></td>
</tr>
</tbody>
</table>

#### Junior Year

<table>
<thead>
<tr>
<th>Semester</th>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>First</td>
<td>ACMS 30600. Stat. Methods &amp; Data Analysis I</td>
<td>3.5</td>
</tr>
<tr>
<td></td>
<td>ACMS 40390. Numerical Analysis</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Language</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Philosophy or Theology</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Elective</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>15.5</strong></td>
<td></td>
</tr>
<tr>
<td>Second</td>
<td>ACMS 3040. Mathematical Statistics</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>ACMS/MATH Elective</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Literature or Fine Arts</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Science Elective</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Elective</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>16</strong></td>
<td></td>
</tr>
</tbody>
</table>

#### Senior Year

<table>
<thead>
<tr>
<th>Semester</th>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>First</td>
<td>ACMS 30600. Stat. Methods &amp; Data Analysis I</td>
<td>3.5</td>
</tr>
<tr>
<td></td>
<td>PHYS 10310. General Physics I</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>BIOS 30341 or 30312</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Language</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Philosophy or Theology</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>16</strong></td>
<td></td>
</tr>
<tr>
<td>Second</td>
<td>ACMS 40390. Numerical Analysis</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>ACMS 40730. Mathematical Modeling (ACMS 40730)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>or Mathematical/Comp Modeling in Neurosci (ACMS 40740)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>or Stochastic Modeling (ACMS 40760)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>ACMS Elective</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Elective</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td><strong>15</strong></td>
<td></td>
</tr>
<tr>
<td>Second</td>
<td>ACMS Elective</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Electives</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td><strong>12</strong></td>
<td></td>
</tr>
</tbody>
</table>

### ACMS/BIOS Sample Curriculum:

#### First Year

<table>
<thead>
<tr>
<th>Semester</th>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>First</td>
<td>MATH 10550. Calculus I</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>CHEM 10171. Chemical Principles</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>BIOS 10161. Biological Sciences I</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>History or Social Science</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>WR 13100. Writing and Rhetoric</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Moreau First Year Experience</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td><strong>19</strong></td>
<td></td>
</tr>
<tr>
<td>Second</td>
<td>MATH 10560. Calculus II</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>CHEM 10172</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>BIOS 10162. Biological Sciences I</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>History or Social Science</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>WR 13100. Writing and Rhetoric</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Moreau First Year Experience</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td><strong>19</strong></td>
<td></td>
</tr>
</tbody>
</table>

#### Sophomore Year

<table>
<thead>
<tr>
<th>Semester</th>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>First</td>
<td>MATH 10550. Applied Math Methods I</td>
<td>3.5</td>
</tr>
<tr>
<td></td>
<td>ACMS 20620. Applied Linear Algebra</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Language</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Philosophy or Theology</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Moreau First Year Experience</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td><strong>15.5</strong></td>
<td></td>
</tr>
<tr>
<td>Second</td>
<td>MATH 10560. Calculus II</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>CHEM 10172</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>BIOS 10162. Biological Sciences II</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>History or Social Science</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Philosophy or Theology</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Moreau First Year Experience</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td><strong>19</strong></td>
<td></td>
</tr>
</tbody>
</table>

#### Notes:

1. Equivalent or higher sequences in science may be substituted, e.g., MATH 10850, 10860 for MATH 10550, 10560.
2. Some ACMS courses, ACMS 30440 in particular, are not acceptable as electives for the major. The list of acceptable courses for ACMS majors can be obtained from the student's advisor.
3. Introduction to Mathematical Reasoning (MATH 20630) is also an acceptable ACMS/MATH elective.
4. Students with an interest in attending graduate school in mathematics or applied mathematics are encouraged to take Algebra (MATH 30710) and Functional Analysis (ACMS 50550).

5. An appropriate class in bioinformatics, biophysics, or a related topic, may be substituted for 3 credits in ACMS coursework with the permission of the Director of Undergraduate Studies.

6. A student should take three core requirement courses during the first year, including one course that is designated a University Seminar. It is recommended that one course in history or social sciences be taken in the first year and one philosophy and one theology be taken by the end of sophomore year.

7. One of the two of these courses (ACMS 30600, ACMS 30540) is a required course. If both courses are taken, the other course can be counted as an ACMS elective.

8. One of the courses satisfies the modeling course requirement. If more than one course is taken, the other can be counted as an ACMS elective.

BACHELOR OF SCIENCE WITH A MAJOR IN
STATISTICS

The requirements for the degree include courses that develop a strong foundation in the methods of applied mathematics and data analysis, while allowing students to also take courses in a wide variety of application areas. The specific requirements for the bachelor of science in statistics, beyond the university and college requirements are as follows.

Chemistry (CHEM 10171, 10122 or CHEM 10171, 10172)¹

Physics (PHYS 10310, 10320)²

Calculus I, II (MATH 10550, 10560)¹

Introduction to Applied Mathematics Methods, I, II (ACMS 20550, 20750)

Scientific Computing (ACMS 20210 or approved alternative computing course in science)

Applied Linear Algebra (ACMS 20620)

Introduction to Probability (ACMS 30530)

Mathematical Statistics (ACMS 30540)

Statistical Methods and Data Analysis I (ACMS 30600)

ACMS statistics electives (9 credits in ACMS statistics courses chosen from a list of approved courses)²

MATH or ACMS elective (3 credits in MATH or ACMS courses numbered 30000 or above)³

Science elective (3 credits)

These requirements total 43 credits in ACMS and MATH and 61 credits in Science.

Statistics Sample Curriculum:

First Year
First Semester
MATH 10550. Calculus I 4
CHEM 10171. Chemical Principles 4
PHYS 10310. General Physics I 4
History or Social Science⁴ 3
FYC 13100. Composition 3
Moreau First Year Experience 1

Second Semester
MATH 10560. Calculus II 4
CHEM 10172 or 10122 4
PHYS 10320. General Physics II 4
History or Social Science⁵ 3
Philosophy or Theology⁶ 3
Moreau First Year Experience 1

Sophomore Year
First Semester
ACMS 20550. Applied Math Methods I 3.5
ACMS 20620. Applied Linear Algebra 3
Language 3
Philosophy or Theology 3
Elective 3

Second Semester
ACMS 20750. Applied Math Methods II 3.5
ACMS 20210. Scientific Computing 3.5
ACMS 30530 Intro Probability 3
Language 3
Philosophy or Theology 3
Elective 3

Junior Year
First Semester
ACMS 30600. Stat. Mthds Data Anal. 3.5
ACMS 30540. Mathematical Statistics 3
Language 3
Philosophy or Theology 3
Elective 3

Second Semester
ACMS Statistics Elective 3
ACMS/MATH Elective 3
Literature or Fine Arts 3
Science Elective 3
Elective 3

Senior Year
First Semester
ACMS Statistics Elective 3
Science Elective 3
Elective 9

Second Semester
ACMS Statistics Elective 3
Electives 9

Notes:
1. Equivalent or higher sequences in science may be substituted, e.g., MATH 10850, 10860 for MATH 10550, 10560.
2. The acceptable elective courses are:
   a. ACMS 40842 Time Series Analysis
   b. ACMS 40852 Statistical Methods in the Biological and Health Sciences
   c. ACMS 40860 Statistical Methods in Molecular Biology
   d. ACMS 40870 Statistical Methods in Social Sciences
   e. ACMS 40880 Statistical Methods in Pattern Recognition and Prediction
   f. ACMS 40890 Statistical Methods in Financial Risk Management
   g. ACMS 40950 Topics in Statistics
   h. Any graduate ACMS course in statistics or probability
3. Introduction to Mathematical Reasoning (MATH 20630) is also an acceptable elective.
4. A student should take three core requirement courses during the first year, including one course that is designated a University Seminar. It is recommended that one course in history or social sciences be taken in the first year and one philosophy and one theology be taken by the end of sophomore year.

SUPPLEMENTARY MAJOR IN STATISTICS

The supplementary major in statistics requires 37 credits in ACMS and Mathematics. The specific requirements are as follows.

Calculus I, II (MATH 10550, 10560)
Introduction to Applied Mathematics Methods, I, II (ACMS 20550, 20750)
Scientific Computing (ACMS 20210 or approved alternative computing course in science)
Applied Linear Algebra (ACMS 20620)
Introduction to Probability (ACMS 30530)
Mathematical Statistics (ACMS 30540)
Statistical Methods and Data Analysis I (ACMS 30600)
ACMS statistics electives (6 credits)

Difference from the full major. The full Statistics major requires 43 credits in ACMS and MATH courses. This supplementary major requires one fewer statistics elective and one fewer ACMS elective.

Double counting issues. A student is permitted to double count Calculus I and II for a first major and this supplementary major. A student whose first major requires Calculus III and Ordinary Differential Equations is exempt from ACMS 20550 and 20750, but must complete an additional 6 credits of electives in ACMS. The same principle applies to any other courses required by a first major and this program.
SUPPLEMENTARY MAJOR IN APPLIED AND COMPUTATIONAL MATHEMATICS AND STATISTICS

The supplementary major in applied and computational mathematics and statistics requires 37 credits in ACMS and Mathematics. The specific requirements are as follows.

**Calculus I, II (MATH 10550, 10560)**
Introduction to Applied Mathematical Methods I, II (ACMS 20550, 20750)

Scientific Computing (ACMS 20210)
Applied Linear Algebra (ACMS 20620)
Introduction to Probability (ACMS 30530)
Mathematical Statistics (ACMS 30540) or Statistical Methods and Data Analysis I (ACMS 30600)
Mathematical/Comp Modeling (ACMS 40730) or Mathematical/Comp Modeling in Neurosci (ACMS 40740) or Stochastic Modeling (ACMS 40760) 1

Numerical Analysis (ACMS 40390)
ACMS electives (3 credits in ACMS courses numbered 30000 and above, except those overlapping in content with one of the above)

1. One of the courses satisfies the modeling course requirement. If more than one course is taken, the other can be counted as an ACMS elective.

HONORS IN ACMS

Junior majors in ACMS may apply for the departmental honors program to receive the designation “Honors in Applied and Computational Mathematics and Statistics”.

Here are the requirements:

- A minimum of Cum GPA of 3.5.
- Complete a minimum of two semesters in undergraduate research ACMS 48498 during the junior or senior year, potentially including a summer semester.
- Complete an undergraduate thesis, ACMS 48500.
- Presentation of the thesis in a seminar or a conference, on campus or outside campus.

Before the end of the junior year, students interested in the Honors option must apply to the director for undergraduate studies, who will make suggestions to students for an appropriate advisor. The subject matter should be in an area of expertise of at least one member of the department. The student will work with the advisor to complete a thesis, which must be signed off by the advisor and then submitted to the Director of Undergraduate Studies by April 15 of the senior year. If approved, the student will receive credit for ACMS 48500, Undergraduate Thesis.

The undergraduate thesis must go beyond what is found in an undergraduate course, and present a novel approach to a subject.

COURSE DESCRIPTIONS

All of the courses associated with this academic program can be found online at registrar.nd.edu/students/class_search.php. The scheduled classes for a given semester may be found by clicking on “Class Search” and selecting the subject Applied & Computational Mathematics and Statistics. Course descriptions can be found by clicking on the subject code and course number in the search results.

Biological Sciences

Chair:
Crislyn D’Souza-Schorey

Associate Chair:
Nora Besansky

Assistant Chair:
Michelle Whaley

Director of Undergraduate Studies:
David Veselik

Professors:
Gary Belovsky; Nora Besansky; Sunny Boyd; Frank Collins; Crislyn D’Souza-Schorey; John Duman; Jeffrey Fedor; Michael Ferdig; Malcolm Fraser; Kasturi Haldar; David Hyde; Gary Lamberti; Edwin Michael; Joseph O’Tousa; Matthew Ravosa; Jeanne Romero-Severson; Jeffrey Schorey; Robert Schulz; David Severson; Jennifer Tank

Associate Professors:
Elizabeth Archie; Patricia Champion; Giles Duffield; Hope Hollocher; Stuart Jones; Shaun Lee; Lei Li; Mary Ann McDowell; Jason McLachlan; David Medvigy; Michael Pfrender; Zachary Schafer; Cody Smith; Kevin Vaughan; Rebecca Wingert

Assistant Professors:
Reginald Hill; Xin Lu; Miguel Morales; Athanasia Panopoulos; Adrian Rocha; Cody Smith; Zain Syed; Siyuan Zhang

Emeritus Professors:
Paul Grimstad; Ronald Hellowth; Charles Kulpa; David Lodge; Kenyon Tweedell

Special Professional Faculty:
Lacey Ahern; Heidi Beidinger-Burnett; Anjuli Datta; Karen Deak; Marie Donahue; Kenneth Flitchak; Barbara Hellowth; Kristin Lewis; Xuemin Lu; Nancy Michael; Marie Denise Milord; Rachel Novick; T. Mark Olsen; Jennifer Robichaud; Amy Stark; Thomas Streit; David Veselik; Michelle Whaley

Concurrent Faculty:
Melissa Berke; Michael Cramer; Scott Emmrich; David Flagel; Holly Goodson; Alan Hamlet; Kristin Shrader-Frechette; Joshua Shrou; Sharon Stack; Kay Stewart

Adjunct Faculty:
Michael Blakesley; David Boone; Richard Dahl; David Halperin; David Lege; Jennifer Prosperi; Kenneth Olson; Molly Scheel; Patrick Sheets

Program of Studies. The Department of Biological Sciences offers programs of study leading to the degrees of bachelor of science with a major in biological sciences or bachelor of science with a major in environmental sciences, master of science in biological sciences and doctor of philosophy. Also offered is a second major in environmental sciences for students in the College of Arts and Letters or in the College of Business Administration.

Program in Biological Sciences. The Department of Biological Sciences at Notre Dame is committed to understanding the fundamental mechanisms by
which living systems operate. The Department is highly interdisciplinary and in excellent position to fulfill the promise of the new integrative approach to biology. Basic research is at the center of our endeavors and fuels and inspires our teaching and training. We seek solutions to human health and environmental crises facing our society—such as finding treatments, cures and preventions for human diseases, maintaining biodiversity on land and in our natural water sources, ensuring an adequate supply of food and fresh water, and reversing the effects of pollution and climate change.

Research in the department spans the wide realm of the life sciences, across scales of complexity—from cells and organs to whole organisms and ecosystems—and across foci as varied as infectious disease, cancer, organ regeneration, climate change and biodiversity. United through the ultimate goal of fostering human and environmental health, we believe that real-world solutions require integrative biological inquiry and multidisciplinary collaboration. Our department serves as a hub connecting different academic units across campus and different universities worldwide, through life science-related investigation and problem solving.

Students choosing an undergraduate major in biological sciences will be prepared for graduate study (M.S., Ph.D., M.D./Ph.D.) leading to a research career, or for admission to medical, veterinary, and other professional schools. Graduates with a bachelor’s degree may enter careers in industry, government, or health-related research laboratories. Those who wish to teach at the elementary or secondary level should be sure to include required courses and sufficient numbers of BIOS electives to complete the 41-credit-hour requirement. All majors are strongly encouraged to complete the sequence Biological Sciences I and II (BIOS 10161–10162) in their first year to ensure the completion of all requirements in four years. Students may begin the core with General Biology A and B (BIOS 20201–20202); however, they will be at a considerable disadvantage in scheduling requirements in the two remaining years; they also will have one year less to explore their interests in biology.

BACHELOR OF SCIENCE WITH A MAJOR IN BIOLOGICAL SCIENCES

The biological sciences majors take the following basic sequence of courses in the College of Science:

- General Chemistry (CHEM 10171 and 20274)
- Organic Chemistry (CHEM 10172 and 20273)
- Physics (PHYS 30210–30220)
- Calculus (MATH 10350–10360 or 10550–10560)

There are seven components to the biology core requirement, consisting of courses in the following areas:

Core I: Introductory Biology

a. Metabolism and Genetics
b. Ecology, Diversity, and Physiology

Students choose from either:
- Biological Sciences I and II (BIOS 10161–10162) (includes two labs)\(^3\) or
- General Biology A and B (BIOS 20201–20202) (includes two labs)\(^3\)

These labs are designated Lab #1 and Lab #2 of the six required for the major.

Core II: Genetics

Classical and Molecular Genetics (BIOS 20250 and 30421)\(^3\)

Optional labs available are BIOS 27241, a research oriented 2-credit laboratory\(^4\), or BIOS 31341, a basic 1-credit cell biology laboratory. Students may not take both cell labs.

Core III: Cellular Biology

- Molecular Cell Biology (BIOS 20241)\(^3\)

Optional lab available is BIOS 27241, a research oriented 2-credit laboratory\(^4\), or BIOS 31341, a basic 1-credit cell biology laboratory. Students may not take both cell labs.

Core IV: Physiology

Students choose from either:
- Vertebrate (Human) Physiology (BIOS 30344)\(^3\) or
- Integrative Comparative Physiology (BIOS 30421) (not available all years)

Optional lab available is BIOS 41344

Core V: Evolutionary Biology

Students choose from either:
- Evolution (BIOS 30305) or
- The History of Life (BIOS 30310)

Core VI: Ecology

Students choose from either:
- General Ecology (BIOS 30312; optional lab BIOS 31312 is offered fall semesters only)
- Aquatic Ecology (BIOS 30420 and required lab BIOS 31420—offered fall only)

Core VII: Laboratory Courses

Students complete six laboratory courses. Three semesters of undergraduate research can fulfill one of six laboratory courses.

Note that select overseas courses that have been approved for science credit may satisfy the Core II through VI requirement if approved by the Director of Undergraduate Studies in Biological Sciences before taking the class.

TRACKS

The Department of Biological Sciences offers eight tracks within the Biological Sciences major. Tracks provide structure to electives to assist students’ development in their fields of interest, and provide experience in a field within biology for students seeking admission to graduate school, medical school, or other programs/jobs.

Each track requires at least 14 credits, two of which can be used for Undergraduate Research. These credits are in addition to the core requirements of the Biological Sciences major listed above. Note that courses listed in more than one track will not count twice.

Tracks include:
- Biomedical Sciences
- Cell and Developmental Biology
- Computational Biology
- Ecology and Environment
- Evolution and Genomics
- Infectious Disease and Global Health
- Integrative Biology
- Neurobiology

For full descriptions of each track, see biology.nd.edu/undergraduate/programs-of-study.

BIOS ELECTIVES

The minimum required credits in the core including labs is 27. An additional 14 credits of electives in biological sciences are chosen to complete the required total of 41 credits.\(^5\) All biological sciences majors are encouraged to include non-science among their “free electives.”

Notes:
1. Students are required to take a total of six laboratories; three of the six labs will be part of the Core (Core I(a,b), II, and the remaining three of the six laboratories are chosen among the core III through Core VI and/or BIOS electives, including 50000- and
60000-level courses. Thus, there are three required “named” BIOS labs and three additional elective BIOS labs. As an option, students who conduct a minimum of three semesters of undergraduate research (BIOS 48498) in the same laboratory or research group at Notre Dame and earn a minimum of 3 credits (i.e., 3 x 1.0 credit), may substitute those research semesters for one of the six required labs.

2. Majors in biological sciences, as well as those considering a professional school (medicine, veterinary science, others), will take Molecular Cell Biology (BIOS 20241) and Classical and Molecular Genetics (BIOS 20250). These should be taken in the sophomore year but no later than the junior year. The two-credit cell research lab (BIOS 27241) is especially ideal for those interested in obtaining summer research internships, doing undergraduate research at Notre Dame or elsewhere, and is especially critical to any graduate research career. Only one of the two available cell biology labs may count toward the required six, however.

3. Physiology should be completed by the end of the junior year for students planning to take the MCAT exam or the seventh semester for students planning to take the GRE biology subjects exam.

4. Most graduate (60000-level) courses (through 60579) are open to eligible juniors and seniors.

5. Students may choose additional courses in the Core areas III through VI or among courses not assigned to the core (e.g., BIOS 40411, Biostatistics, or BIOS 48498, Undergraduate Research), or 60000-level courses as BIOS electives, to meet the required total of 41 credit hours in biological science courses.

6. Select non-BIOS major-level College of Science courses (i.e., those taken to meet science-major requirements and not among those designated as “Recommended University electives”) that are not being used to fulfill other specific graduation requirements can be chosen with the consent of the director of undergraduate studies for the Department of Biological Sciences and counted toward the BIOS elective credit. While majors are allowed to take one 3-credit, non-BIOS lecture course and have that count toward the 41 required credits, students may also include one non-BIOS lab if it is required for that non-BIOS lecture and have that laboratory satisfy one of the six required laboratories. For example, Physical Geology (SC 20110, ENVG 10110/20110) has a required laboratory, and majors who choose BIOS electives based on their environmental or ecological interests may elect to take Physical Geology for a total of 4 credits toward the 41 required credits. Majors who might have transferred into BIOS from BCHM and had taken the required biochemistry (CHEM 30341) lecture and laboratory course will be allowed to count both the lecture and laboratory toward the 41 credits. The same would be true of other relevant science courses (e.g., analytical chemistry, physical chemistry) as approved by the director of their major and the associate dean of the College of Science.

7. Undergraduate Research (BIOS 48498) and Directed Readings (BIOS 46497) count toward the

### SUMMARY OF REQUIREMENTS FOR GRADUATION FOR ANY BIOLOGICAL SCIENCES MAJOR

<table>
<thead>
<tr>
<th>Biological Sciences*</th>
<th>41</th>
<th>all</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemistry (10171–10172 or 10181–10182)</td>
<td>8</td>
<td>First year</td>
</tr>
<tr>
<td>Physics (30210–30220 with labs)</td>
<td>8</td>
<td>Junior</td>
</tr>
<tr>
<td>Mathematics (10350–10360 or 10550–10560)</td>
<td>8</td>
<td>First year</td>
</tr>
<tr>
<td>Total Science:</td>
<td>73</td>
<td></td>
</tr>
<tr>
<td>History**</td>
<td>3</td>
<td>First year</td>
</tr>
<tr>
<td>Social Science**</td>
<td>3</td>
<td>First year</td>
</tr>
<tr>
<td>Philosophy**</td>
<td>6</td>
<td>Sophomore/Junior</td>
</tr>
<tr>
<td>Theology**</td>
<td>6</td>
<td>Sophomore/Junior</td>
</tr>
<tr>
<td>WR 13100</td>
<td>3</td>
<td>First year</td>
</tr>
<tr>
<td>Language Intermediate Level Competency (3)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Literature/Fine Arts**</td>
<td>3</td>
<td>Junior/Senior</td>
</tr>
<tr>
<td>Free Electives</td>
<td>24+</td>
<td>Sophomore/Senior</td>
</tr>
<tr>
<td>Moreau First Year Experience</td>
<td>2</td>
<td>First year</td>
</tr>
</tbody>
</table>

6. Select non-BIOS major-level College of Science courses (i.e., those taken to meet science-major requirements and not among those designated as “Recommended University electives”) that are not being used to fulfill other specific graduation requirements can be chosen with the consent of the director of undergraduate studies for the Department of Biological Sciences and counted toward the BIOS elective credit. While majors are allowed to take one 3-credit, non-BIOS lecture course and have that count toward the 41 required credits, students may also include one non-BIOS lab if it is required for that non-BIOS lecture and have that laboratory satisfy one of the six required laboratories. For example, Physical Geology (SC 20110, ENVG 10110/20110) has a required laboratory, and majors who choose BIOS electives based on their environmental or ecological interests may elect to take Physical Geology for a total of 4 credits toward the 41 required credits. Majors who might have transferred into BIOS from BCHM and had taken the required biochemistry (CHEM 30341) lecture and laboratory course will be allowed to count both the lecture and laboratory toward the 41 credits. The same would be true of other relevant science courses (e.g., analytical chemistry, physical chemistry) as approved by the director of their major and the associate dean of the College of Science.

7. Undergraduate Research (BIOS 48498) and Directed Readings (BIOS 46497) count toward the

<table>
<thead>
<tr>
<th>Credits Taken</th>
<th>Year Usual</th>
</tr>
</thead>
<tbody>
<tr>
<td>41</td>
<td>all</td>
</tr>
<tr>
<td>8</td>
<td>First year</td>
</tr>
<tr>
<td>8</td>
<td>Sophomore</td>
</tr>
<tr>
<td>3</td>
<td>Junior</td>
</tr>
<tr>
<td>6</td>
<td>Sophomore/Junior</td>
</tr>
<tr>
<td>6</td>
<td>Sophomore/Junior</td>
</tr>
<tr>
<td>3</td>
<td>First year</td>
</tr>
<tr>
<td>24+</td>
<td>Sophomore/Senior</td>
</tr>
<tr>
<td>2</td>
<td>First year</td>
</tr>
</tbody>
</table>

* It is essential for prospective biology majors to begin their general biology courses in the first year to schedule all required core curriculum courses within a four-year period.

** One of these courses must be a University Seminar.

+ Minimum number of free electives based on the assumption that intermediate-level competency in language was achieved by taking a minimum of one three-credit course.

124 credits
## Biological Sciences

### Sophomore Year

**Fall Semester**
- BIOS 20250 (Core II: Genetics) 4
- BIOS 21250 (required LAB #3) 1
- CHEM 20273 4
- Theology/Philosophy 3
- Language 4

**Spring Semester**
- BIOS 20241 (Core III: Cell Biology) 3
- Elective Lab 4 (e.g., 27241 Cell Biology) 2
- CHEM 20274 4
- Theology/Philosophy 3
- Language 4

### Junior Year

**Fall Semester**
- BIOS Core V (Evolutionary Biology) 3
- Physics 30210, 31210 4
- Free Elective 3
- Theology/Philosophy 3
- Language 3
- Elective BIOS Lab #4 1

**Spring Semester**
- BIOS 40411 (Biostatistics) 4
- BIOS Core IV (Physiology) 3
- Physics 30220, 31220 4
- Fine Art/Literature 3

### Senior Year

**Fall Semester**
- BIOS Core VI (Ecology) 3
- BIOS or Science Elective 4
- Free Elective 3
- Free Elective 3
- Elective BIOS Lab #5 1

**Spring Semester**
- BIOS Elective 3
- BIOS Elective 3
- Free Elective 3
- Free Elective 3
- Elective BIOS Lab #6 3

---

**TOTAL:** 124 minimum

1. Students who begin with the CHEM 10181–10182 sequence and select BIOS as their major would complete the four-semester sequence with CHEM 20273–20274.
2. One of these courses must be a University seminar.
3. For premedical students, it is strongly recommended that the student take a 20000-level English literature course. This ensures that the student will be able to meet the standard medical-school admission requirement of two English courses. Medical ethics and biochemistry are also generally required or highly recommended.

### BIOLOGICAL SCIENCES HONORS PROGRAM

The goal of the biology honors program is to give our most talented students an exceptional background in biological research. Participation in this program will increase their level of commitment and productivity while preparing them for successful postgraduate research work.

The program will accept junior biological sciences and environmental science majors in good academic standing who have already completed one semester of undergraduate research at Notre Dame. Selection by the Undergraduate Research Committee will be based on a research statement, transcript, a minimum GPA of 3.25 in College of Science courses, and a recommendation letter from their research advisor.

To graduate with honors, students will have to complete:

1. At least three semesters (for at least 4 credits total) and one summer of independent research at Notre Dame. Students are expected to apply for REU, COS-SURF or other summer funding as appropriate.
2. A thesis of at least 25 pages (a manuscript can substitute only if the student has made substantial writing contributions to the work).
3. A graduate-level course in the area of research.
4. A presentation at a national or regional meeting.
5. One disciplinary research seminar each year (1 credit seminar, see below).

### Thesis Requirements:

Students will write a draft of their thesis in the senior research seminar under the guidance of the advisor and the seminar coordinator. The final draft of the thesis will be written with the advisor, and will be submitted by April 1. Each thesis will be reviewed by one member of the Undergraduate Research Committee. If the thesis is not approved, a second committee member will read the thesis and confer. The students will be notified by April 15 if a rewrite is needed. The rewrite will be due May 1. Guidelines for the thesis and thesis reviewers will be provided.

### Research Seminar (Graded S/U)

The purpose of these seminars is to create a small learning community where students and practicing scientists can connect. The seminar learning goals are to support and develop each student’s independence, scientific communication skills, critical review skills, and understanding of their research in the context of the larger field. The seminar will have the added benefit of helping students prepare for graduate applications and fellowships.

**Seminar Coordinator:** Michelle Whaley

**Junior year topics** (offered each spring):
1. Critical reading of research articles
2. Project/experimental design, creativity in research
3. Research presentations (posters and talks)
4. Proposal writing
5. Career exploration that includes guest speakers.
Senior year topics (offered each fall):
1. Thesis writing
2. The publication process
3. Graduate fellowship and graduate school personal statements
4. Attend biology seminars and discuss research statements
5. Research presentations.

UNDERC FIELD BIOLOGY PROGRAMS
Seven-credit programs for undergraduates that emphasize field biology are offered at the University’s Environmental Research Centers (Michigan and Montana). The programs entail course work, group research projects, and an independent research project. Application to the programs occurs in the fall of the sophomore and junior years and enrollment is limited by housing at each location. If selected, students enroll in BIOS 35501 during the spring semester and BIOS 35502 during the summer. To participate in the Montana (BIOS 35503) or other programs (BIOS 35504, 35505), one must first participate in the Michigan program.

ENVIRONMENTAL SCIENCES
Director of Undergraduate Studies: Kenneth Filchak

Program in Environmental Sciences. All life, including humans, directly depends on the functioning of Earth’s ecosystems. Further, it has become apparent that human activities have altered Earth’s environments. Factors such as pollution, invasive species introductions, anti-biotic resistance, and global climate change can all be traced to human activity. Increasing the knowledge and awareness of the link between humans and the environment is one of the most important endeavors of the twenty-first century.

The environmental sciences major stresses interdisciplinary knowledge and logic. The curriculum is designed to expose students to a scientific understanding of our environment from biological, chemical, and geological perspectives. Particular emphasis is placed on understanding how humans interact chemically and biologically with the environment. Material and energy resource limitations, chemical and thermal pollution, and effects of environmental pollution on public health are major considerations within the environmental sciences curriculum. Emphasis is also placed on understanding interactions between human societies and the environment from social, ethical, economic, anthropological, and governmental points of view. Students are also encouraged to strengthen their mathematical and computational skills and to participate voluntarily in environmentally oriented research projects or summer internships.

Concentrations in Earth Science. With this collaboration students will explore how geologic processes affect humans and how human activity is changing earth systems, studying a range of topics including earthquakes, volcanic activity, global climate change, subsurface transport of toxic heavy metals, carbon sequestration, and safe disposal of nuclear waste. The Earth Science concentration program combines classroom, laboratory and field studies, and all students are encouraged to conduct independent research under faculty supervision. The flexibility of the undergraduate program allows students to switch to this concentration if they have followed either an engineering or science track during their first or even their second years.

An undergraduate major in Environmental Science with a concentration in Earth Science prepares a student for graduate study (M.S., Ph.D.) in many aspects of geological and environmental science, as well as for admission to a variety of professions. Graduates with a B.S. degree may enter careers in diverse areas such as state geological offices, the National Park Service, oil and mining industries, environmental consulting, and government national research laboratories or policy offices.

The First Major. College of Science students who major in Environmental Sciences will earn the degree of bachelor of science. Students following the Environmental Sciences first major program complete a total of 69 credits of science.

The Second Major for Arts and Letters and Business: Most students in the College of Arts and Letters or in the Mendoza College of Business may participate in the Environmental Sciences Program as a second major. Second majors are required to complete a minimum of 37 credits of science. Students considering this program should investigate options brought to a first major by adding course work in environmental sciences. For example, students majoring in government and in environmental sciences could consider postgraduate study or careers in public policy. Students majoring in economics and in environmental sciences would have a good background for the developing field of environmental economics. A second major in Environmental Sciences also complements majors in the other societal fields of anthropology, psychology, or sociology. Similarly, business students will likely find environmental sciences to be useful background when working with local or federal governments on issues of environmental compliance or when considering the impact of business decisions on the environment (environmental assessment). All students are urged to discuss their long-range career plans with advisors in both majors.

Relationship with Other Programs: The Environmental Sciences Major Program has a special collaborative relationship with the Science, Technology, and Values (STV) Concentration program housed in the Reilly Center in O’Shaughnessy Hall. Select courses required of environmental sciences first majors are also cross-listed as STV courses. Thus, students in the STV program from across the university are expected to benefit from the curricular endeavors of the Environmental Sciences Program. Environmental sciences first majors often enroll in the STV program. (Environmental science students with flexibility in their program often have room to complete an STV concentration by taking STV courses beyond those required by the first major or university requirements.) However, arts and letters students with second majors in environmental science will be encouraged to participate in further interdisciplinary course work through the STV concentration. Second majors are especially encouraged to take the capstone course, SC 40491, Current Topics in Environmental Science, provided it completes that second program.

BACHELOR OF SCIENCE WITH A MAJOR IN ENVIRONMENTAL SCIENCES
All environmental sciences first majors take the following courses in science:

- Introductory Biology (BIOS 10161–10162 and 11161–11162) or (20201–20202 and 21201–21202)
- Chemistry (CHEM 10171 and 10172)
- Calculus (MATH 10350–10360) or (10550–10560)\(^1\),\(^2\),\(^3\)
- Planet Earth (SC 20110/21110)
- Physics (PHYS 10310–10320 or 30210–30220)
- Biostatistics (BIOS 40411)\(^4\)
- General Ecology (BIOS 30312 and 31312)
- Chemistry Elective\(^5\)

Current Topics in Environmental Science (SC 40491)

Students also will choose science electives chosen from an approved list,\(^6\) completing a required minimum total of 69 credits in science.

Also required for the major are the following non-science courses:

- An ethics course with emphasis on environmental biology or life science issues, i.e., Environmental Ethics or Science, Technology, and Society, or other approved arts and letters courses.\(^7\)
- Introduction to Microeconomics (ECON 10010 or 20010)\(^8\),\(^9\)

Students are also urged to choose their electives from a recommended list of arts and letters courses.\(^10\)

Requirements for the program are summarized in the table in this section.

Notes:
1. Equivalent or higher-level sequences in mathematics may be substituted, e.g., MATH 10850–10860 for MATH 10350–10360.
2. Students interested in the area of ecological modeling are strongly urged to take MATH 10550–10560 for their mathematics requirement. Other mathematics courses should be taken as science electives.
3. Students who have completed only six hours of mathematics in their first year may transfer into the program, but they will be required to complete a mathematics sequence equivalent to MATH 10350–10360 or MATH 10550–10560. Students having taken...
MATH 10250, 10110 (or 10260 or 10270) may do this by taking MATH 10360, while those who have taken only one semester of lower-level calculus should take both MATH 10350, 10360. (See also the discussion on science degree credit found later in this section of the Bulletin.)

4. Students transferring into the ES or ES2 major, or transfer students who have previously taken a statistics course equivalent to ACMS 20340, MAY BE allowed to have this course count for BIOS 40411 (Biostatistics) with the permission of the ES Director. Students will be allowed to substitute ACMS 20340, or an equivalent statistics course (e.g., PSY 30100) as ES or ES2 majors in exceptional cases with the permission of the director of their major and the associate dean of the College of Science.

5. The 4-credit chemistry elective requirement is satisfied by either one additional course in organic chemistry (CHEM 20273) or Inorganic Chemistry (CHEM 20243) or by Analytical Chemistry (CHEM 30333, 31333) or by an alternative 4-credit CHEM course as approved by the director of their major and by the associate dean of the College of Science. Students are also allowed to take the 3-credit CHEM 10122 lecture or CHEM 20204 with the understanding that if/when a laboratory is established for that course, they will be required to take that lab prior to graduation.

6. The following are examples of many approved science electives for this program:

   - Botany (BIOS 30304) or at St. Mary's
   - Evolution (BIOS 30305)
   - The History of Life (BIOS 30310)
   - Genetics (BIOS 20250 or 20303)
   - Principles of Microbiology (BIOS 30401)
   - Animal Behavior (BIOS 30407)
   - Aquatic Ecology (BIOS 30420)
   - Stream Ecology (BIOS 60527)
   - Numerous other BIOS courses as designated by the ES director, including 60000-level graduate courses are accepted.

   - Environmental Chemistry (CHEM 20204)
   - Further chemistry electives (from Note 6 above)
   - Second course in general chemistry (CHEM 20274)
   - Principles of Biochemistry (CHEM 40420)
   - Computer Programming and Problem Solving (MATH 20210)
   - Calculus III (MATH 20550)
   - Introduction to Linear Algebra and Differential Equations (MATH 20580)
   - Differential Equations (MATH 30650)
   - Topics in Computing
   - Historical Geology (SC 20120)
   - Mineralogy and Optical Mineralogy (SC 20220)
   - Environmental Geology (SC 30311)
   - Sedimentation and Stratigraphy (SC 30230)
   - Geochemistry
   - Paleontology (SC 40350)

Select CE courses may be allowed with the approval of the associate dean, College of Science.

Other SC courses as approved by the ES director may be included as they become available. Select courses offered in Study Abroad (UC-Dublin, UWA-Perth) also may be counted toward the ES science electives as well as select ENVG courses not cross-listed with SC, with permission of the ES director.

Students interested in attending graduate school in environmental sciences should consider taking science electives beyond requirements of this major. For example, for admission into some graduate programs, a year of organic chemistry would be a requirement. Deviations from the approved list of science electives must be approved by the advisor for the major.

7. For this major, the University requirement of a second philosophy or theology or other University-required course may be fulfilled by one of these courses.

8. The economics requirement for this major is fulfilled by taking Introduction to Economics (Microeconomics) either in the first year (ECON 10010) or in the second through fourth years (ECON 20010). Note, the course ECON 13181 (Social Science University Seminar) will not fulfill the economics requirement for this major.

9. For this major, the University social science requirement will be fulfilled by the required microeconomics course.

10. Numerous STV courses are recommended as electives, including Environment and Environmentalism in History (STV 30175); Self, Society and the Environment (STV 40319) and others as approved by the ES director. The STV courses may be taken either under the STV label or from the primary departmental cross-list.

11. As is the case for science first majors, six credits of the science course work in this program may also be counted toward the student's university science requirement.

12. While Biostatistics (BIOS 40411) is the preferred course, other 3- or 4-credit statistics courses required for completion of a first major (i.e., economics, psychology) may be substituted for BIOS 40411 with the permission of the ES director. MATH 101430 is not an acceptable substitute for BIOS 40411 or other statistics course, however. Although mathematics course work is not specifically required of this program, several required courses (BIOS 40411 or some of the first courses in physics) do have a prerequisite of one year of calculus (MATH 10350–10360 or equivalent). For all students in the College of Arts and Letters or the Mendoza College of Business, the mathematics sequence MATH 10350–10360 is acceptable for completion of the university mathematics requirement; thus, this sequence is recommended for students considering Environmental Sciences as a second major. Students lacking this mathematics background may have to take further course work in mathematics to meet the prerequisites in mathematics of courses in this program.

14. Chosen from approved biology or geology electives listed in note 7 above or one first course in physics (PHYS 10111 or 10310 or 10411 or 30210) or an approved survey course: Concepts of Energy and the Environment (PHYS 10052) or Energy and Society (PHYS 20051) and others as designated.

**Sample Curriculum (B.S. Degree Majors):**

**First Year**

1. **First Semester**
   - Biological Sciences I and lab 4
   - Calculus A 4
   - General Chemistry I and lab 4
   - WR 13100 or History** 3
   - Theology I** or Philosophy I** 3
   - Moreau First Year Experience 1
   - 19

2. **Second Semester**
   - Biological Sciences II and lab 4
   - Calculus B 4
   - Organic Chemistry I and lab 4
   - WR 13100 or History** 3
   - Theology I** or Philosophy I** 3
   - Moreau First Year Experience 1
   - 19

**Sophomore Year**

1. **First Semester**
   - Planet Earth and lab 4
   - General Ecology and lab 4
   - Language I 4
   - Microeconomics 3
   - 15

2. **Second Semester**
   - Chemistry Elective and lab 3
   - Biostatistics 4
   - Language II 4
   - General Elective 3
   - 15

**Junior Year**

1. **First Semester**
   - Physics I and lab 4
   - Theology II** or Philosophy II** 3
   - Language III (intermediate level) 4
   - Science Elective #1 3
   - Science Elective #2 3
   - 16

2. **Second Semester**
   - Physics II and lab 4
   - Science Elective #3 3
   - Theology II** or Philosophy II** 3
   - General Elective 3
   - Conservation Seminar 1
   - 14

**Senior Year**

1. **First Semester**
   - Current Topics (SC 40491) 3
   - Science Elective #4 3
   - Science Elective #5 3
   - Fine Art/Literature 3
   - General Elective 3
   - 15
**Biological Sciences**

<table>
<thead>
<tr>
<th>First Year</th>
<th>Second Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>First Semester</strong></td>
<td><strong>Second Semester</strong></td>
</tr>
<tr>
<td>General Biology Lab (11161 or 21201) 1</td>
<td>General Biology Lab (11312 or 22202) 1</td>
</tr>
<tr>
<td>General Biology (10161 or 20201) 3</td>
<td>Environmental Mineralogy 4</td>
</tr>
<tr>
<td>General Biology Elective 3</td>
<td>Sedimentation and Stratigraphy 3</td>
</tr>
<tr>
<td>General Biology Elective 3</td>
<td>Physics I and lab 4</td>
</tr>
<tr>
<td>General Biology Elective 3</td>
<td>Fall Field Trip 1</td>
</tr>
<tr>
<td>General Biology Elective 3</td>
<td>Language III 3</td>
</tr>
<tr>
<td>General Biology Elective 3</td>
<td><strong>Total Credits</strong> 13</td>
</tr>
</tbody>
</table>

*Ideally, students who decide to major in environmental sciences before beginning their first year should take BIOS 10161–10162. This will allow for an additional year of relevant science and other electives to be included in their total curriculum. See notes accompanying BIOS 10161–10162 and BIOS 20201–20202 for additional information.*

**One of these must be a University Seminar (13180–18189).**

**Honors.** ES majors can participate in the Biological Sciences honors program. See page 149 for more information.

### ENVIRONMENTAL SCIENCES MAJOR WITH A CONCENTRATION IN EARTH SCIENCES

The following outlines the course requirements (totaling 34 credits) for Earth Sciences concentration:

- CE 20300. Global Change, Water & Energy 4
- CE 20200. Environmental Mineralogy 4
- CE 30230. Sedimentation and Stratigraphy 3
- CE 30240. Petrology of Earth Materials 4
- CE 40350. Environmental Microbiology 3
- CE 40381. Org. Geochem/Stable Isotopes 3
- CE 40390. Geochemistry 3
- CE 30350. Surficial Processes 4
- CE 30410. Dynamic Earth 3
- CE 20230. Environmental Aquatic Chemistry 3
- CE 45300. Fall Field Trip 4
- CE 45200. Spring Field Trip 4

**First Year** (see core environmental sciences major)

**Sophomore Year**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Second Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>Planet Earth and lab 4</td>
<td>Global Change, Water &amp; Energy 3</td>
</tr>
<tr>
<td>General Ecology and lab (BIOS 31312) 4</td>
<td>Biostatistics and tutorial 4</td>
</tr>
<tr>
<td>Language I 3</td>
<td>Chemistry Elective 3</td>
</tr>
<tr>
<td>Topics in Environmental Science 3</td>
<td>Language II 3</td>
</tr>
<tr>
<td>University Requirement Course 3</td>
<td>University Requirement Course 3</td>
</tr>
<tr>
<td><strong>Total Credits</strong> 17</td>
<td><strong>Total Credits</strong> 17</td>
</tr>
</tbody>
</table>

**Junior Year**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Second Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environmental Mineralogy 4</td>
<td>Petrology of Earth Materials 4</td>
</tr>
<tr>
<td>Sedimentation and Stratigraphy 3</td>
<td>Environmental Microbiology 3</td>
</tr>
<tr>
<td>Physics I and lab 4</td>
<td>University Requirement Course 3</td>
</tr>
<tr>
<td>Fall Field Trip 1</td>
<td>Physics II and lab 4</td>
</tr>
<tr>
<td>Language III 3</td>
<td>Spring Field Trip 1</td>
</tr>
<tr>
<td><strong>Total Credits</strong> 15</td>
<td><strong>Total Credits</strong> 15</td>
</tr>
</tbody>
</table>

**Senior Year**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Second Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>Org. Geochem/Stable Isotopes 3</td>
<td>Dynamic Earth 3</td>
</tr>
<tr>
<td>Geochemistry 3</td>
<td>Environmental Aquatic Chemistry 3</td>
</tr>
<tr>
<td>General Elective 3</td>
<td>General Elective 3</td>
</tr>
<tr>
<td>Geomorphology for Engineers and Earth Scientists 3</td>
<td>University Requirement Course 3</td>
</tr>
<tr>
<td>University Requirement Course* 3</td>
<td>University Requirement Course 3</td>
</tr>
<tr>
<td><strong>Total Credits</strong> 15</td>
<td><strong>Total Credits</strong> 15</td>
</tr>
</tbody>
</table>

### ENVIRONMENTAL SCIENCES AS A SECOND MAJOR

Most students in the College of Arts and Letters or the Mendoza College of Business who have a second major in environmental sciences will be allowed to add this second major program.

**First Year**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Second Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Biology I (10161 or 20201) 3</td>
<td>General Biology Lab I (11161 or 21201) 1</td>
</tr>
<tr>
<td>General Biology Lab II (11162 or 21202) 1</td>
<td><strong>Total Credits</strong> 17</td>
</tr>
</tbody>
</table>

**Sophomore Year**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Second Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Biology Lab II (11162 or 21202) 4</td>
<td>Statistics or Biostatistics 3</td>
</tr>
<tr>
<td>General Biology I (10161 or 20201) 3</td>
<td>CHEM or SC/ENVG requirement** 3</td>
</tr>
<tr>
<td><strong>Total Credits</strong> 17</td>
<td><strong>Total Credits</strong> 17</td>
</tr>
</tbody>
</table>

**Junior Year**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Second Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>SC 20110 Planet Earth 4</td>
<td><strong>Total Credits</strong> 17</td>
</tr>
</tbody>
</table>

**Senior Year**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Second Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOS 30312, 31312, General Ecology 4</td>
<td>Statistics or Biostatistics 3</td>
</tr>
<tr>
<td>BIOS or ENVG or PHYS or SC Elective*** 3</td>
<td><strong>Total Credits</strong> 17</td>
</tr>
</tbody>
</table>

**Second Semester**

| Course selection(s) to complete second major, as needed |

*Ideally, students who decide to major in environmental sciences before beginning their first year should take BIOS 10161–10162. This will allow for an additional year of relevant science and other electives to be included in their total curriculum. See notes accompanying BIOS 10161–10162 and BIOS 20201–20202 for additional information.*

**Honors.** ES majors can participate in the Biological Sciences honors program. See page 149 for more information.

**Samples Curriculum (Second Majors):**

Students should remember that all science major programs require course work that builds upon requisites and thus require careful planning. A sample curriculum for second majors is given below. Note: Only the courses for the second major are listed.

**First Year**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Second Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 10171 Chemical Principles and Lab 4</td>
<td><strong>Total Credits</strong> 17</td>
</tr>
</tbody>
</table>

**Sophomore Year**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Second Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Biology I (10161 or 20201) 3</td>
<td>General Biology Lab I (11161 or 21201) 1</td>
</tr>
<tr>
<td><strong>Total Credits</strong> 17</td>
<td><strong>Total Credits</strong> 17</td>
</tr>
</tbody>
</table>

**Senior Year**

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Second Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOS 30312, 31312, General Ecology 4</td>
<td>Statistics or Biostatistics 3</td>
</tr>
<tr>
<td>BIOS or ENVG or PHYS or SC Elective*** 3</td>
<td><strong>Total Credits</strong> 17</td>
</tr>
</tbody>
</table>

**Second Semester**

| Course selection(s) to complete second major, as needed |

*Math 10350–10360 or equivalent are not included in the minimum total of 37 credits in this sequence; satisfy the University math requirement.*

**Students may take CHEM 20204 (Environmental Chemistry) or SC 20100 (Environmental Geosciences) or SC 30111 (Environmental Geology) or other approved CHEM, ENVG, or SC electives.**

**Students whose final requirement is a three-credit class in BIOS, ENVG, or SC may take SC 40491 to complete the major with the permission of the director of the ES major.*

To Table of Contents
MINOR IN SUSTAINABILITY

Director of the Minor in Sustainability:
Rachel Novick

Advisory Committee:
Samantha Salden (Chair)
Jon Coleman
Alan Hamlet
Samuel Miller
Patrick Murphy
Anthony Serianni
John Sitter
Jennifer Tank

The Minor in Sustainability is a course of study for undergraduates from broadly diverse academic disciplines. It examines the footprint of humanity on Earth’s systems and ways to reduce that footprint to achieve social well-being and environmental protection. Faculty from multiple Colleges teach the principles and practices of sustainability from varied perspectives to provide a unique and dynamic curriculum. The curriculum is designed to augment disciplinary coursework in an area of major study so that students learn to integrate diverse ways of thinking and appreciate interdisciplinary problem-solving.

Students in the minor receive training in the principles and practices of sustainability through formal courses and independent study. Graduates of the minor will be equipped with knowledge and skills about sustainability, an ability to communicate about sustainability, and an imperative to implement sustainable practices. Graduates will be prepared to make substantive contributions to the development of more sustainable practices, practices that benefit their personal and professional lives, the lives of others, and the lives of future generations. Students will also be well positioned for in-depth study on sustainability at the post-baccalaureate level. Finally, the study of Catholic traditions and social and environmental ethics will help students understand the role that religious commitment can play in achieving sustainability.

Students can apply for admission to the minor in their first year, sophomore year, or junior year by contacting the director of the minor. They are required to take a gateway course “Sustainability: Principles and Practices”, an interdisciplinary course taught by faculty from multiple departments across the University. This course should be taken at the beginning of study in the minor, but students do not need to declare the minor to enroll.

Students then select from a list of approved courses totaling at least 3 classes of at least 9 credits. These courses fall into four categories (Design, Impacts, Social Institutions, and Individual Behavior and Values) and are tagged as such using the course attributes which are searchable via the University’s online Class Search. Students must take two courses outside of their College, except for Arts and Letters students who may take one liberal arts course and one social science course. They also must take courses from three out of the four elective categories. Students who wish to take two electives in the same category may petition for an exception, provided that the two classes are providing substantially different disciplinary approaches to sustainability. One-credit seminars such as those offered by the Center for Social Concerns can be accumulated to give the equivalent of one 3-credit course. Students planning to study abroad are encouraged to petition for approval of relevant courses at their international institution before they leave campus.

Students must meet with the director of the minor in sustainability to discuss their capstone projects during the spring semester of their penultimate year, but they are encouraged to set up an initial meeting sooner. They are required to submit a brief description of their project proposal at the end of their penultimate year and identify a faculty member who has agreed to serve as their advisor. Students will receive feedback on their proposals from the Sustainability Minor Advisory Board and may be required to resubmit their proposals with modifications to gain approval. Students wishing to start their project earlier (for example, the summer before their junior year) should submit their project proposal before they begin their research. During the fall of their final year, students will enroll in a capstone seminar (SUS 43000) and one credit of independent study (SUS 48001). As part of the requirements for SUS 48001, they will complete a research paper thoroughly exploring existing scholarship on their project topic. During the spring of their final year, students will enroll in a second credit of independent study (SUS 48002) and complete their capstone project.

Additional details about the Minor in Sustainability can be found online at http://science.nd.edu/sustainability.
Chemistry and Biochemistry

Chair:
Brian M. Baker
George and Winsfred Clark Professor of Chemistry:
Marvin J. Miller
Grace-Rupley Professor of Chemistry:
Norman Dovichi
Emil T. Hofman Professor of Chemistry:
Bradley D. Smith
Charles L. Huisking Professor of Chemistry:
Xavier Creary
Kleiderer/Pezold Professor of Biochemistry:
Francis J. Castellino
Navari Family Professor of Life Sciences:
Shahriar Mobashery
Rev. John Cardinal O’Hara Professor:
Patricia L. Clark
Arthur J. Schmidt Professor of Chemical and Biomolecular Engineering:
Paul Bohn
Rev. John A. Zahn Professor of Science:
Prashant V. Kamat

Professors:
Brian M. Baker; Seth Brown; Ian Carmichael; J. Daniel Gezelker; Holly V. Goodson; Gregory V. Hartland; Paul Helquist; Kenneth W. Henderson; Paul W. Haber; Masaru Kenneth Kuno; A. Graham Lappin; Marya Lieberman; Anthony Ferianni; Slavi Sevov; Sharon Stack; Richard E. Taylor; Olaf G. Wiist

Associate Professors:
Brandon L. Ashfeldt; Jon P. Camden; Steven A. Corcelli; Amanda B. Hummon; S. Alexander Kandel; Jeffrey W. Peng; Zachary D. Schultz

Assistant Professors:
Haifeng Gao; Vlad M. Iluc; Laurie E. Littlepage; John Parkhill

Emeriti:
Subhash C. Basu; Roger K. Brethauer; Thomas P. Felcher; Richard W. Fessenden; Dan Meisel; Thomas L. Nowak; W. Robert Scheidt; Robert H. Schuler; Anthony M. Trozolo

Program of Studies. Chemistry is the science of substances that comprise the world about us and is concerned with their structure, their properties and the reactions that change them into other substances. Chemists and biochemists practice their profession in many ways—in educational institutions, government laboratories, private research institutions and foundations and in many commercial areas, including the chemical, drug, health, biotechnology, pharmaceutical and food industries.

The Department of Chemistry and Biochemistry has a strong undergraduate program together with a strong graduate education and research program. The graduate program greatly benefits undergraduate education by attracting highly qualified faculty and results in the availability of excellent research facilities and modern instrumentation necessary to train the scientists of tomorrow. This department is able to provide an excellent program of undergraduate research to complement regular course work. Student participation in research is highly encouraged as a key part of the education of chemistry and biochemistry majors.

The programs in chemistry and biochemistry described in the following pages prepare students for graduate studies and professional work in the chemical and biochemical sciences, as well as in interdisciplinary areas that rely heavily on chemistry. Bachelor of science degrees are offered with a major in chemistry or a major in biochemistry. At the graduate level, the Department of Chemistry and Biochemistry offers programs leading to the degrees of master of science and doctor of philosophy, as described in the Graduate School Bulletin of Information.

BACHELOR OF SCIENCE WITH A MAJOR IN CHEMISTRY

The chemistry curriculum at Notre Dame includes two programs: the Chemistry Career Program, designed for students interested in a professional career in chemistry, and the Chemistry Combination Program, designed for those students who are interested in combining chemistry with business or with computing.

All chemistry majors take the following basic sequence of courses:

General Chemistry (CHEM 10181, 11181 recommended; or optionally, CHEM 10171, 11171)
Organic Chemistry (CHEM 10182, 11182, 20283, 21283)1
Inorganic Chemistry (CHEM 20284, 21284, 40443, 41443)
Physical Chemistry (CHEM 30321, 30322, 31322)
Analytical Chemistry (CHEM 30333, 31333)
Methods of Chemistry (CHEM 40434 or CHEM 40436)
Principles of Biochemistry (CHEM 40420)
Chemistry Seminars (CHEM 23201, CHEM 23202, CHEM 23203), three semesters
Physics (PHYS 10310, 10320)2
Mathematics (MATH 10550, 10560, and CHEM 20262)

In addition to this basic sequence, the following courses are required for each program.

Chemistry Career Program
Science Electives (six credit hours)2

Combination Program
Program Electives (15 credit hours)
Science Electives (three credit hours)2

The program electives for the Chemistry Career Program are from either the area of business or from the area of computing and are the same as those in the corresponding Collegiate Sequence programs:

Chemistry with Business
Accounting I (BASC 20100)
Accounting II (ACCT 20200 or FIN 30210 or FIN 30220 or FIN 30600 or MGT 40750)
Corporate Financial Management (BASC 2150)
Principles of Management (BASC 20200)
Principles of Marketing (BASC 20250)
Introduction to Economics (ECON 10011) or Principles of Microeconomics (ECON 20011) is suggested as a non-program elective, as a prerequisite to BASC 20250 and meets the University social science requirement.

Chemistry with Computing
Each student selects 15 credit hours of computer science and engineering and chemistry courses in consultation with a departmental advisor. Program electives require careful scheduling.

Sample Curriculum (Career Program):
First Year
First Semester
CHEM 10181 4
CHEM 11181 0
MATH 10550 4
CHEM 10182 4
CHEM 11182 0
PHYS 10310 4
WR 13100 3
History 3
Moreau First Year Experience 1
——
19
Second Semester
CHEM 10182 4
CHEM 11182 0
MATH 10560 4
PHYS 10320 4
Philosophy 3
Social Science 3
Moreau First Year Experience 1
——
19
Sophomore Year
First Semester
CHEM 20283 3
CHEM 21283 1
CHEM 23201 1
Language 3
Theology 3
Elective 4
——
15
Second Semester
CHEM 20284 3
CHEM 21284 1
CHEM 20262 3
Language 3
Electives 6
——
16

To Table of Contents
### Junior Year

**First Semester**
- CHEM 30321  3
- CHEM 30333  3
- CHEM 31333  1
- CHEM 23203  1
- Elective (or Language)  3
- Theology  3

Second Semester
- CHEM 20284  3
- CHEM 21284  3
- CHEM 20262  3
- Language  3
- Elective  4

**Second Semester**
- CHEM 30321  3
- CHEM 30333  3
- CHEM 31333  1
- Elective (or Language)  4
- Program Elective  3

### Second Semester
- CHEM 30322  3
- CHEM 31322  2
- CHEM 40434 or CHEM 40436  3
- Philosophy  3
- Elective  3

### Senior Year

**First Semester**
- CHEM 23202  5
- Science Electives  2
- Electives  3

**Second Semester**
- CHEM 23202  5
- Science Electives  2
- Electives  3

Sample Curriculum (Combination Program):

**First Year**

**First Semester**
- CHEM 10181  4
- CHEM 11181  0
- MATH 10550  4
- BIOS 10161  3
- BIOS 11161  1
- WR 13100  3
- History  3
- Moreau First Year Experience  1

**Second Semester**
- CHEM 20283  3
- CHEM 21283  1
- CHEM 23201  1
- Language  3
- Theology  3
- Elective  3

**Second Semester**
- CHEM 20283  4
- CHEM 21283  1
- CHEM 23212  0
- MATH 10560  4
- BIOS 10161  3
- BIOS 11161  1
- WR 13100  3
- History  3
- Moreau First Year Experience  1

Notes:
1. Substitution with permission only.
2. Undergraduate research, CHEM 48498, is a recommended science elective in all programs beginning in the sophomore year, with typically one or two credits per semester.
3. The student should take three general requirement courses during the first year, including one course that is designated a University Seminar. Economics is required for the Chemistry with Business program.
4. One course in theology and philosophy should be completed by the end of the sophomore year. These courses may be taken in either semester of the first or second year.
5. In all the programs, one chemistry seminar is generally taken in each of the sophomore, junior and senior years.

### BACHELOR OF SCIENCE WITH A MAJOR IN BIOCHEMISTRY

The biochemistry curriculum emphasizes the chemical basis of biological processes. All biochemistry majors are required to take the following courses:

- General Chemistry (CHEM 10181 AND 11181)
- Organic Chemistry (CHEM 10182, 11182, 20283, 21283)
- Inorganic Chemistry (CHEM 20284, 21284)
- Physical Chemistry (CHEM 30321, 30322)
- Analytical Chemistry (CHEM 30333, 31333)
- Chemistry Seminars (CHEM 23201, 23202, 23203), three semesters
- Biochemistry Seminar (CHEM 23212)
- Biochemistry (CHEM 30341, 31341, 30342)
- Mathematics (MATH 10550, 10560, and CHEM 20262)
- Physics (PHYS 30210-30220 or PHYS 10310, 10320)
- General Biology (BIOS 10161–10162 or 20201, 21201, 20202, 21202)
- Genetics (BIOS 20303)
- Cell Biology (BIOS 30341)
- Molecular Biology (BIOS/CHEM 50531)

Sample Curriculum (Biochemistry Program):

**First Year**

**First Semester**
- CHEM 10181  4
- CHEM 11181  0
- MATH 10560  4
- BIOS 10161  3
- BIOS 11161  1
- WR 13100  3
- History  3
- Moreau First Year Experience  1

**Second Semester**
- CHEM 20284  3
- CHEM 21284  1
- CHEM 23212  0
- Science Elective  3
- Fine Arts or Literature  3
- Philosophy  3

Notes:
1. Substitution with permission only.
2. Undergraduate research, CHEM 48498, is a recommended science elective in all programs beginning in the sophomore year, with typically one or two credits per semester.
3. The student should take three general requirement courses during the first year, including one course that is designated a University Seminar. Economics is required for the Chemistry with Business program.
4. One course in theology and philosophy should be completed by the end of the sophomore year. These courses may be taken in either semester of the first or second year.
5. In all the programs, one chemistry seminar is generally taken in each of the sophomore, junior and senior years.
Chemistry and Biochemistry

Second Semester
CHEM 20284 3
CHEM 21284 1
BIOS 20303 3
CHEM 20262 3
Language 3
---
13

Junior Year
First Semester
CHEM 30321 3
CHEM 30341 3
CHEM 31341 2
CHEM 23203 1
PHYS 30210 4
Elective (or Language) 3
---
16
Second Semester
CHEM 30322 3
CHEM 30342 3
PHYS 30220 4
Philosophy 3
Elective 3
---
16

Senior Year
First Semester
CHEM 30333 2
CHEM 31333 2
BIOS/CHEM 50531 3
Theology 3
Elective 3
---
13
Second Semester
CHEM 23202 1
Fine Arts or Literature 3
Electives 9
---
13

Notes:
1. Substitution with permission only.
2. The student should take three general requirement courses during the first year, including one course that is designated a University Seminar. Economics is required for the Chemistry with Business program.
3. One course in theology and philosophy should be completed by the end of the sophomore year. These courses may be taken in either semester of the first or second year.
4. Undergraduate research, CHEM 48498, is a recommended science elective in all programs beginning in the sophomore year with typically one or two credits per semester. BIOS 21303 and BIOS 31341 are also recommended.
5. In all the programs, one chemistry seminar is generally taken in each of the sophomore, junior and senior years.

| SUMMARY OF MINIMAL REQUIREMENTS FOR THE DEGREE OF BACHELOR OF SCIENCE IN CHEMISTRY AND BIOCHEMISTRY |
|-------------------------------------------------|-------------------------------------------------|-------------------------------------------------|
|                                                    | Chemistry Career Program | Chemistry Combination Program | Biochemistry Program |
| Chemistry                                          | 42                   | 42                   | 32                   |
| Biochemistry                                       | 3                    | 3                    | 8                    |
| Biological Sciences                               | —                    | —                    | 17                   |
| Mathematics                                        | 8                    | 8                    | 8                    |
| Physics                                            | 8                    | 8                    | 8                    |
| Science Electives                                 | 6                    | 3                    | 2                    |
| Total Required Science                            | 67                   | 64                   | 75                   |
| Program Electives                                 | —                    | 15                   | —                    |
| Total                                             | 67                   | 79                   | 75                   |

Moreau First Year Experience 2 2 2
Language Intermediate-Level Competency
WR 13100 3 3 3
Philosophy+ 6 6 6
Theology+ 6 6 6
Literature/Fine Arts+ 3 3 3
History+ 3 3 3
Social Sciences’ 3 3 3
Free Electives 20++ 8++ 12++
---
124 124 124

+ One of these courses must be a University Seminar.
++ Assumes intermediate-level competency in language was achieved by taking two 4-credit introductory-level and one 3-credit intermediate-level course.

Honors in Chemistry and Biochemistry
Junior majors in chemistry and biochemistry may apply for the departmental honors program to receive the designation “honors in chemistry” or “honors in biochemistry” in their student transcript if they have a minimum grade point average of 3.5 and are enrolled in undergraduate research CHEM 48498 or CHEM 48499. The requirements for completion of the honors program are a minimum of two semesters of undergraduate research after the beginning of the junior year and the course CHEM 48500, with a grade of B or better. CHEM 48500 has to be taken in the semester the thesis is presented.

COURSE DESCRIPTIONS
All of the courses associated with this academic program can be found online at registrar.nd.edu/students/class_search.php. The scheduled classes for a given semester may be found by clicking on “Class Search” and selecting the subject Chemistry and Biochemistry. Course descriptions can be found by clicking on the subject code and course number in the search results.

Graduate courses in chemistry are open to qualified advanced undergraduate students, subject to the approval of the departmental advisor. These courses are listed in the Graduate School Bulletin of Information.
Mathematics

Chair:
Jeffrey Diller

Associate Chair:
Richard Hind

Director of Graduate Studies:
Peter A. Cholak

Director of Undergraduate Studies:
Sonja Mapes

Charles L. Huisking Professor of Mathematics:
Julia F. Knight

John and Margaret McAndrews Professors of Mathematics:
Mark Behrens; François Ledrappier

John A. Zahm, C.S.C., Professor of Mathematics

Stephen A. Stolz

Rev. Howard J. Kenna, C.S.C., Professor of Mathematics

Karsten Grove

Professors:
Peter A. Cholak; Francis X. Connolly; Jeffrey A. Diller; William G. Dwyer (emeritus); Leonid Faybusovich; Michael Gekhtman; Matthew Gursky; Alexander J. Hahn; Brian C. Hall; Qiong Han; Alex A. Himonas; Alan Howard (emeritus); Xiabo Liu; Juan Migliore; Gerard K. Misiolek; Liviu Nicolaescu; Timothy O’Meara (Kenna Professor of Mathematics, emeritus, and provost emeritus); Richard R. Otter (emeritus); Claudia Polini; Barth Pollak (emeritus); Mei-Chi Shaw; Brian Smyth; Dennis M. Snow; Nancy K. Stanton; Sergei Starchenko; Laurence R. Taylor; E. Bruce Williams; Warren J. Wong (emeritus); Frederico Xavier

Associate Professors:
Katriona Barron; Mario Borelli (emeritus); Nero Budur; John E. Derwent (emeritus); Matthew J. Dyer; Samuel R. Evens; David Galvin; Abraham Goetz (emeritus); Richard Hind; Gabor Székelyhidi; Vladeta Vukovics (emeritus)

Assistant Professors:
Andrei Jorza; Cladius Raicu

Associate Special Professional Faculty:
Arthur Lim; Annette Flickinger

Assistant Special Professional Faculty:
Sonja Mapes

Program of Studies. Mathematics has had a profound effect upon civilization since ancient times, when the legon originally inscribed on the entrance to Plato’s academy was “Let no one ignorant of geometry enter here.” It was equally true during the medieval period, when arithmetic and geometry constituted two of the seven subjects considered essential for a liberal education. It has been said that the second most influential book in the span of Western civilization—after the Bible—is Euclid’s Elements. Although mathematics is usually associated with science and technology in the modern mind, it seems apparent from the writings of the great mathematicians of the 17th and 18th centuries that religious belief played a great role in their pursuit of mathematics. They saw the “system of the world” obeying mathematical laws and as a consequence felt impelled to study mathematics so as to better appreciate the world’s Creator.

Mathematics continues to have a profound influence in our century. From the theory of relativity, with its applications to the study of the large-scale structure of the universe, to the development of the modern computer, with its manifold applications in science, technology and business, mathematics has played a fundamental role. It is surely the most universal of all scientific tools, and the student equipped with a strong mathematical background will be in the enviable position of being able to employ his or her expertise in any area in which rigorous thought and precision of results are mandated.

The department is dedicated to the development of undergraduate studies, to the teaching of mathematics to scientists, engineers and teachers, to graduate education and research, and to the discovery of new mathematics. The entire faculty is involved with undergraduate affairs, and students have the opportunity of associating with scholars of international repute. Mathematics at Notre Dame provides students with a discipline of the mind and a stimulation of the imagination par excellence.

Programs in mathematics prepare students for graduate studies or for professional work in fields in which mathematics plays a dominant role. They provide an excellent preparation for law school, medical school, business school and secondary school teaching. Graduates may enter careers in research institutes or industrial or government positions.

In addition to its undergraduate programs, the department offers programs of graduate study leading to the degree of doctor of philosophy, as described in the Graduate School Bulletin of Information.

The department recognizes that, besides those students who wish to pursue a career devoted primarily to mathematical research and teaching, many will wish to take positions in business, industry or government where they will be using their mathematical skills in close collaboration with engineers as well as biological, physical and social scientists. These students will find among the listed programs one well suited to their needs. Besides these programs a student may, in consultation with the director of undergraduate studies and the department chair, create a program especially tailored to his or her career goals.

BACHELOR OF SCIENCE WITH A MAJOR IN MATHEMATICS

The mathematics curriculum at Notre Dame includes seven course sequences or areas of concentration within the College of Science. These programs are designed to accommodate the academic and professional interests of all mathematics majors. Brief descriptions are given below, and more detailed descriptions of these programs are available on request from the Department of Mathematics.

College Requirements. All must take the following College of Science courses: CHEM 10171, 10172 or CHEM 10171, 10122; PHYS 10310 or 10093 and PHYS 10320 or 10094; and an additional science elective.

A student who takes two semesters of organic chemistry or two semesters of general biology is only required to take PHYS 30210 or 10095 and (30220 or 10096).

Mathematics Honors Program
This program is suited to students who are interested in graduate work in one of the mathematical sciences and to those whose career plans require a strong background in modern mathematics.

Honors Calculus I (MATH 10850)
Honors Calculus II (MATH 10860)
Honors Calculus III (MATH 20850)
Honors Calculus IV (MATH 20860)
Honors Algebra I (MATH 20810)
Honors Algebra II (MATH 20820)
Honors Algebra III (MATH 30810)
Honors Algebra IV (MATH 30820)
Honors Analysis I (MATH 30850)
Honors Analysis II (MATH 30860)

Electives (12 credit hours with six at the 40000 level)

Mathematics Courses for the Other Programs
All other mathematics programs (except the computing program) require the following mathematics core courses:

Calculus I (MATH 10550)
Calculus II (MATH 10560)
Calculus III (MATH 20550)
Ordinary Differential Equations (MATH 20750)
Linear Algebra (MATH 20610)
Introduction to Math Reasoning (MATH 20630)
Algebra (MATH 30710)
Real Analysis (MATH 30750)

In addition to this basic sequence, the following courses are required for each program:

Mathematics Career Program
This program is designed to give students a general background in mathematics. In addition to the basic sequence of courses listed above, 15 hours of mathematics electives are required, at least three of which are at the 40000 level.

Mathematics and Life Sciences Program
This program is designed for mathematics majors who are interested in life-science-oriented careers. The following mathematics courses are required in addition to the basic sequence of courses listed above:

Introduction to Probability (MATH 30530)
Mathematical Statistics (ACMS 30540)
Elective in Mathematics (three credit hours at the 40000 level)

The following College of Science courses are required:

To Table of Contents
Two electives in Mathematics (including three
Introduction to Operations Research (MATH 30210)
Mathematical Statistics (ACMS 30540)
Introduction to Probability (MATH 30530)
addition to the basic sequence:
The following mathematics courses are required in
This program is designed to prepare students for
Mathematics and Business Administration
Programs
This program is designed for students who plan to
pursue graduate study or industrial careers in
computing science. All of the mathematics core
courses listed above are required, as well as 15 hours of
mathematics electives, at least three hours of
which are at the 40000 level.
In addition, the student must complete one of the
following sequences of computing courses:
Software design option: CSE 20211, CSE 20212, CSE
20110, CSE 30331, CSE 30246, fourth elective
Theory option: CSE 20211, CSE 20212, CSE
20110, CSE 30331, CSE 30151, CSE 40113
Theory and compilers option: CSE 20211, CSE
20212, CSE 20110, CSE 30331, CSE 30151, CSE
40243
Computer architecture option: CSE 20211, CSE
20212, CSE 20221, CSE 30321, CSE 40322, fourth elective
Mathematics Education Program
This program is designed for students who plan a
career in secondary education. The following
mathematics courses are required in addition to the
basic sequence listed above:
Introduction to Probability (MATH 30530)
Mathematical Statistics (ACMS 30540)
Geometry (MATH 361 at Saint Mary's College, 3 credit hours)
Discrete Math (MATH 30210, 40210 or 40220, 3 credit hours)
One Mathematics elective (3 credit hours)
(One of these classes must be at the 40000 level)
The following education courses are to be taken at
Mathematics and Engineering Science Program
This program is designed for students interested in
applied or industrial mathematics. In addition to the
mathematics core courses, the student is required to
take one of MATH 40480, MATH 40390 or
MATH 40750, and 12 more credits of mathematics
electives. The student must also complete one of the
following two sequences of engineering classes:
Thermal option: AME 20221, AME 20222, AME
20331, AME 20231, AME 30334
Structures and design option: AME 20221, AME
20241, AME 20231, CE 30200, CE 30210
Mathematics as a Second Major
Students in the Mendoza College of Business or the
College of Arts and Letters may pursue a second
major in mathematics by completing all mathematics
courses required for the career mathematics
concentration. See the list below. To list mathematics
as a second major on the transcript, the student must
satisfy all of the requirements for a major in some
department of the Mendoza College of Business or the
College of Arts and Letters.
MATH 10550–10560–20550. Calculus I-III 11.5
MATH 20750. Ordinary Differential Equations 3.5
MATH 20610. Linear Algebra 3
MATH 20730. Introduction to Abstract Math 3
MATH 30710. Algebra 3
MATH 30750. Real Analysis 3
Mathematics Electives 15*
15
42 credits
Sample Curriculum
(Mathematics Career Program):
First Year
Second Semester
MATH 20630. Introduction to Math. Reasoning 3
MATH 20750. Ordinary Differential Equations 3.5
Mathematics Elective 3
Language 3
Philosophy or Theology 3
15.5
Junior Year
First Semester
MATH 30710. Algebra 3
Mathematics Elective 3
Language 3
Philosophy or Theology 3
Elective 3
15
Second Semester
MATH 30750. Real Analysis 3
Literature or Fine Arts 3
Electives 9
15
Senior Year
First Semester
Mathematics Electives 6
Electives 9
15
Second Semester
Mathematics Elective 3
Electives 9
12
The student should take three general requirement
courses during the first year, including one course that
is designated a University Seminar. It is recommended
that one course in history or social science be taken in
the first year and one philosophy and one theology course
taken by the end of the sophomore year.
The Senior Thesis for Mathematics Majors
Students in the mathematics program have the
option of writing a thesis on a subject in mathematic-
ics, or in an interdisciplinary area connected to
mathematics. Such a thesis is strongly encouraged for
math honors students and required of students in the
SUMR program. This project is intended to give the
student a better sense of how mathematics is done
and used, and to develop in the student the habit
of learning mathematics and its applications in an
independent setting. In most cases, this work would
be expected to be expository, but based on advanced-
level readings. It should represent an effort that goes
beyond what is found in an undergraduate course. It
is especially desirable for a student to present a some-
what novel approach to an established subject, or to
explore one of the many interesting connections that
mathematics has with other disciplines.

To Table of Contents
During the second semester of the junior year and the first semester of the senior year, the student will work closely with a faculty advisor on a program of readings in preparation for the thesis, receiving 2 credits for each of these two semesters of work, under MATH 48800.

The thesis is to be crafted during the second semester of the senior year. The thesis must be submitted to the director of undergraduate studies by April 15 of the senior year. If the thesis is approved, the student will receive 2 credits under MATH 48900 and the citation of "Graduation with Senior Thesis" will appear on the transcript.

Students interested in writing a senior thesis should contact the director of undergraduate studies in the Department of Mathematics.

MINOR IN ACTUARIAL SCIENCE

The Department of Mathematics offers actuarial science as an academic minor. There is a heavy demand for the business courses which are required for this minor, and students are not guaranteed registration availability for these courses. Please see the academic advisor for more information. The actuarial science minor requires completion of the following ten courses:

- MATH 30530. Probability 3
- ACMS 30540. Statistics 3
- MATH 30610. Introduction to Financial Mathematics 3
- One mathematics elective at the 30000-level or above 3
- BASC 20100 or ACCT 20100. Accountancy I 3
- BASC 20150 or FIN 20150. Corporate Financial Management 3
- FIN 30220. Microeconomic Analysis 3
- FIN 30600. Investment Theory 3
- ECON 10010. Principles of Microeconomics 3
- ECON 30331. Econometrics 3

Total: 30

Among the ten courses required for the minor, up to five courses can be double-counted for the student’s major.

COURSE DESCRIPTIONS

All of the courses associated with this academic program can be found online at registrar.nd.edu/students/class_search.php. The scheduled classes for a given semester may be found by clicking on “Class Search” and selecting the subject Mathematics. Course descriptions can be found by clicking on the subject code and course number in the search results.

Certain graduate courses in mathematics are open to qualified advanced undergraduates, subject to the approval of the director of undergraduate studies. Other graduate courses are described in the Graduate School Bulletin of Information.

Neuroscience and Behavior

Director of Undergraduate Studies:
Nancy Michael

Program in Neuroscience and Behavior.
Neuroscience is a relatively young, exciting, and fundamentally interdisciplinary field devoted to the scientific study of the nervous system. Neuroscience encompasses the study of problems from multiple disciplinary perspectives at different levels of analysis in human and non-human organisms. It includes, for example, the study of molecular mechanisms in individual neurons and the coordination of millions of neurons into neural systems. Problems range from investigation of the evolution of nervous systems in basal vertebrates to the application of neuroscience to education and law. Neuroscientists also seek to develop neurologically plausible models of human thinking, affect and behavior.

The neuroscience and behavior major is an interdisciplinary program that includes both Bachelor of Science and Bachelor of Arts tracks. This description covers the BS track only (see the Arts & Letters section for description of the BA track). The requirements for the major are essentially the same for both tracks, with a foundational requirement of an introductory neuroscience course with a laboratory in the spring of the sophomore year. The two tracks differ in how they satisfy college level requirements. Both required courses and electives that will satisfy the major credit requirements are drawn primarily from the Departments of Biological Sciences and Psychology. Undergraduate research and approved electives in other departments are also encouraged.

This major requires a minimum of 61 credits in the College of Science. Students should discuss their specific choices with the program’s undergraduate adviser.

BACHELOR OF SCIENCE WITH A MAJOR IN NEUROSCIENCE AND BEHAVIOR

All neuroscience and behavior majors (BS track) take the following courses in science:

- Introductory Biology (BIOS 10161/11161) or (20201/21201)
- Mathematics (MATH 10350 or 10550 or 10850) and (MATH 10360 or 10560 or 10860)
- General Chemistry (CHEM 10171/11171 or 10181/11181)
- Organic Chemistry (CHEM 10172/11172 or 10182/11182) and (CHEM 20273/21273 or 20283/21283)
- Physics (PHYS 10310/11310 or 30210/31210 or 10411/11411) and (PHYS 10320/11320 or 20435/21435 or 30220/31220)

Neuroscience and Behavior Lecture and Lab (under development)

One additional lab in Biological Sciences (genetics, cell bio, physiology accepted; others with prior approval)

All majors to choose an additional 9 credits from the foundational science elective choices below:

- Biological Sciences II & lab BIOS 10162/11162 or 20202/21202
- Genetics BIOS 20250/21250 (taken together) or 20303
- Cell Biology BIOS 20241 or 30341
- Biochemistry CHEM 40420
- Scientific Computing ACMS 20210
- Intro Applied Mathematical Methods I ACMS 20550
- Intro Dynamical Systems for Scientists MATH 20480
- Intro to Mathematical Reasoning MATH 20630

All neuroscience and behavior majors take the following courses in Psychology:

- Intro to Psychology PSY 10000 or 20000
- In addition all neuroscience and behavior majors take at least one 3-credit course in statistics:
  - BIOS 40411 or PSY 30100 or ACMS 20340

All majors to take an additional 9 credits from a list of approved Biological Sciences electives, 9 more credits from a list of approved Psychology electives, and an additional 12 credits that may include a maximum of 6 credits of undergraduate research (with approved faculty advisers) and/or approved electives across several departments. See the undergraduate adviser for lists of approved courses and approved research advisers.

The major allows significant flexibility, depending on interests and career goals. The following is one example but students are urged to discuss their personal plans with the undergraduate adviser. The term “neuroelective” refers to elective choices pre-approved for the major.

SAMPLE CURRICULUM FOR A BS IN NEUROSCIENCE AND BEHAVIOR

Note that this sample curriculum assumes that no AP or language CE credits are included.

First Year

<table>
<thead>
<tr>
<th>First Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOS 10161 and 11161</td>
</tr>
<tr>
<td>MATH 10350 or 10550</td>
</tr>
<tr>
<td>CHEM 10171 and 11171</td>
</tr>
<tr>
<td>PSYCH 10000</td>
</tr>
<tr>
<td>WR13100</td>
</tr>
<tr>
<td>Moreau First Year Experience</td>
</tr>
<tr>
<td>Total: 19</td>
</tr>
</tbody>
</table>
Physics

**COURSE DESCRIPTIONS**

For a list of approved courses, contact the Director of Undergraduate Studies for this program (Nancy Michael, nmichael@nd.edu).

All of the courses associated with this academic program can be found online at registrar.nd.edu/students/class_search.php. The scheduled classes for a given semester may be found by clicking on “Class Search” and searching within the home department of the course listing. Course descriptions can be found by clicking on the subject code and course number in the search results.

---

**Spring Semester**

BIOS 10162 and 11162 4
MATH 10360 or 10560 4
CHEM 10172 and 11172 4
History * 3
Theology * 3
Moreau First Year Experience 1

___

19

**Second Year**

**Fall Semester**

BIOS 20250 and 21250 4
CHEM 20273 and 21273 4
PSYC 30501 3
Language 4

___

15

**Spring Semester**

BIOS 20241 3
BIOS NeuroSci and lab 4
Philosophy * 3
Language 4

___

14

**Third Year**

**Fall Semester**

BIOS 30407 Animal Behavior 3
PHYS 30210 and 31210 4
PSYC 30520 Intro Cognitive Psych 3
Theology * 3
Language 3

___

16

**Spring Semester**

BIOS 30339 Comparative Neuro 3
ACMS 20340 3
PHYS 30220 and 31220 4
Fine art or Literature * 3
Addtl Neuroelective/UG research 3

___

16

**Fourth Year**

**Fall Semester**

BIOS Neuroelective 3
PSYC Neuroelective 3
Addtl Neuroelective/UG research 3
Philosophy * 3
Free elective 3

___

15

**Spring Semester**

BIOS Neuroelective 3
PSYC Neuroelective 3
Additional Neuroelective 3
Free Elective 3
Free Elective 3

___

15

* One of these must be a University seminar.

---

**Physics**

*Chair:*
Christopher F. Kolda

*Director of Graduate Studies:*
Mark A. Caprio

*Director of Undergraduate Studies:*
Philippe Collon

*Frank M. Freimann Professor of Physics:*
Michael C.F. Wiescher

*Aurora and Tom Marquez Professor of Physics:*
Jacek K. Furdyna

*Grace-Rupley II Professor of Physics:*
Ikaros I. Bigi

*Frank M. Freimann Professor of Physics:*
Ani Aprahamian

*Glynn Family Honors Collegiate Professor of Physics:*
Christopher F. Kolda

*Frank M. Freimann Assistant Professors of Physics:*
Justin R. Crepp; Kenjiro K. Gomes

*Aurora and Tom Marquez Assistant Professor of Physics:*
Dervis Can Vural

*Ortenzio Family Assistant Professor in Applied Medical and Nuclear Physics:*
Maxime Brodeur

*Professors:*
Daniel Bardayan; Timothy C. Beers; Bruce A. Bunker; Margaret Dobrowolska-Furdyna; Morten Eskildsen; Stefan G. Fraenendorf; Umesh Garg; Peter M. Garnavich; Michael D. Hildreth; J. Christopher Howk; Anthony K. Hyder; Boldizsár Jankó; Colin Jessop; Christopher F. Kolda; Craig S. Lent (concurent); John M. LoSecco; Grant Mathews; Kathie E. Newman; Terrence W. Retrig; Randal C. Ruchti; Steven T. Ruggiero; Jonathan R. Sapirstein; Carol E. Tanner; Zoltan Toroczkai; Mitchell R. Wayne

*Associate Professors:*
Dinshaw Balsara; Mark A. Caprio; Philippe Collon; Antonio Delgado; Kevin P. Lannon; Jeffrey Peng (concurent); Sylwia Ptasinska; Rebecca Surman

*Assistant Professors:*
Tan Ahn; Manoel Couder; Justin Crepp; Kenjiro Gomes; Adam Martin; Anna Simon; Dervis Can Vural

*Emeriti:*
Gerald B. Arnold; H. Gordon Berry; Howard A. Blackstead; Samir K. Bose; Neal M. Cason; Walter R. Johnson; James J. Kolata; A. Eugene Livingston; William D. McGinn; John W. Mihelich; John A. Poier; Paul E. Shanley; William D. Shephard; Walter J. Tomasz

*Program of Studies.* Physics is the study and description of the structure and behavior of the physical universe. As such, it is fundamental to all physical sciences, pure and applied. A knowledge of physics is basic to an understanding of astronomy, chemistry, geology and even biology in that physics contributes to the interpretation and detailed description of many of the natural phenomena...
which constitute the proper subjects of investigation in these sciences.

In addition to the undergraduate curricula, the Department of Physics offers programs for graduate study leading to the degrees of master of science and doctor of philosophy, as described in the Graduate School Bulletin of Information.

**BACHELOR OF SCIENCE WITH A MAJOR IN PHYSICS**

Science undergraduates may choose from two different majors within the Department of Physics: physics, and physics-in-medicine. The course sequences in these two programs are designed to accommodate the academic and professional interests of the majority of physics majors.

The basic physics major is a particularly flexible option for students, and is the one that will be chosen by the majority of undergraduates majoring in the department. Students following the physics major program will gain a broad understanding of physics. Depth is gained through the addition of one or more supplemental concentration programs offered through the department. Two of these concentration programs, advanced physics and astrophysics, help to prepare the student for graduate work in physics and astronomy or astrophysics. Students with interests in other areas have time to explore second-major, minor, or concentration options offered through departments in the College of Arts and Letters. Students with alternative interests are encouraged to discuss these with the director of undergraduate studies.

The physics-in-medicine major is designed for those students planning to attend medical school after completion of their degree, or who intend to work or study in the fields of biophysics or biomedical technology. The degree contains a core set of requirements in physics, augmented with courses in organic chemistry, biochemistry, biology, and biophysics.

No supplemental concentration is required of physics majors, but interested students are allowed and encouraged to follow as many concentrations as their degrees, or who intend to work or study in the fields of biophysics or biomedical technology. The degree contains a core set of requirements in physics, augmented with courses in organic chemistry, biochemistry, biology, and biophysics.

No supplemental concentration is required of physics majors, but interested students are allowed and encouraged to follow as many concentrations as their degrees, or who intend to work or study in the fields of biophysics or biomedical technology. The degree contains a core set of requirements in physics, augmented with courses in organic chemistry, biochemistry, biology, and biophysics.

Physics as a second major is an option for students in the colleges of engineering, arts and letters, or business.

**Requirements for the Physics Major**

A total of 60 credits in science and mathematics is required for the physics major. The following outlines the course requirements:

**BACHELOR OF SCIENCE WITH A MAJOR IN PHYSICS**

**Sample Curricula**

**MAJOR: PHYSICS**

### First Year

**First Semester**

- MATH 10550, 12550 (4)
- PHYS 10411, 11411 (4)
- CHEM 10171, 11171 (4)
- WR 13100 (3)
- History or Social Science (3)
- Moreau First Year Experience (1)
- Total: 19

**Second Semester**

- MATH 10560, 12560 (4)
- PHYS 10422, 11422 (4)
- CHEM 10122 or 10172, 11172 (3)
- University Seminar (3)
- University Requirement (3)
- Moreau First Year Experience (1)
- Total: 18

### Sophomore Year

**First Semester**

- MATH 20550, 22550 (3.5)
- PHYS 20433 (3)
- PHYS 20430 (1.5)
- PHYS 20451, 22451 (3.5)
- PHYS 23411 (1)
- Language (4)
- Total: 16.5
### Second Semester
- **PHYS 20454** 3
- **PHYS 20464** 3
- **PHYS 20452, 22452** 3.5
- Language 10 4
- University Requirement 3
- **__16.5__**

### Junior Year
**First Semester**
- **PHYS 30461** 3
- **PHYS 30471** 3
- **PHYS 40453** 3
- Language 10 3
- Elective 3
- **__15__**

**Second Semester**
- [Semester Abroad]
- or
- University Requirements 6
- Electives 9
- **__15__**

### Senior Year
**First Semester**
- **PHYS 30465 or 50501** 3
- **PHYS 40441, 41441** 3
- **PHYS 43411** 1
- University Requirements 6
- Elective 3
- **__16__**

**Second Semester**
- PHYS 40442, 41442 or MATH/ACMS elective at 40000-level 3
- PHYS 40602 or 50701 or other elective 3
- University Requirement 3
- Electives 6
- **__15__**

### MAJOR: PHYSICS CONCENTRATION: ADVANCED PHYSICS
**First Year** (See core physics major)
**Sophomore Year** (See core physics major)
**Junior Year** (See core physics major)
**Senior Year** (See core physics major)

---

### MAJOR: PHYSICS-IN-MEDICINE
**First Year**
**First Semester**
- **MATH 10550, 12550** 4
- **PHYS 10411, 11411** 4
- **CHEM 10171, 11171** 4
- **WR 13100** 3
- Moreau First Year Experience 1
- **__16__**

**Second Semester**
- **MATH 10560, 12560** 4
- **PHYS 10422, 11422** 4
- **CHEM 10172, 11172** 4
- University Seminar 3
- University Requirement 3
- Moreau First Year Experience 1
- **__19__**

**Sophomore Year**
**First Semester**
- **BIOS 20201, 21201** 4
- **MATH 20550, 22550** 3.5
- **PHYS 20433** 3
- **PHYS 20430** 1.5
- **PHYS 23411** 1
- **CHEM 20273, 21273** 4
- **University Seminar** 3
- University Requirement 3
- Language 10 4
- **__17__**

**Second Semester**
- **BIOS 20202, 21202** 4
- **PHYS 20464** 3
- **CHEM 20274, 21274** 4
- University Requirement 3
- Language 10 4
- **__18__**

**Junior Year**
**First Semester**
- **BIOS 20303, 20341** 3
- **PHYS 20453** 3
- **PHYS 20451, 22451** 3.5
- Language 10 4
- University Requirement 3
- **__16.5__**

**Second Semester**
- **BIOS 20341, 20351** 3
- **PHYS 20454** 3
- **PHYS 20452, 22452** 3.5
- University Requirement 3
- Language 10 3
- **__15.5__**

**Senior Year**
**First Semester**
- **PHYS 40453** 3
- **PHYS 30471** 3
- **PHYS 40371** 3
- University Requirement 3
- Elective 3
- **__15__**
Second Semester
University Requirement
PHYS 40432∗
Electives

Notes
1. Alternatively, PHYS 10310 and its laboratory and tutorial.
2. Alternatively, PHYS 10320 and its laboratory and tutorial.
3. Alternatives for CHEM 10171 and 10122 include CHEM 10171–10172 or CHEM 10181–10182 plus the associated laboratories and tutorials.
4. Honors Calculus I through III (MATH 10850, 10860, and 20850) may substitute for Calculus I to III.
5. Options include PHYS 20420 (Comp Methods in Physics), PHYS 20481 (Introduction to Astronomy and Astrophysics), PHYS 30481 (Modern Observational Techniques), PHYS 30432 (Lasers and Modern Optics), PHYS 48480 (Undergraduate Research: The student must take at least 3 credits in research with one advisor and the credits taken must be distributed over at least two semesters), PHYS 50201 (Astrophysics), PHYS 50472 (Relativity: Special and General), MATH 40480 (Complex Variables). Physics electives cannot be double counted with requirements for the Astrophysics concentration.
6. BIOS 10161, 11161, 10162, 11162 may substitute for BIOS 20201, 21201, 20202, 21202.
7. Students take three from the following: CHEM 40420 (Principles of Biochemistry), BIOS 20303 (Fundamentals of Genetics), BIOS 30344 (Vertebrate Physiology), BIOS 30341 (Cellular Biology), PHYS 40371 (Medical Physics), PHYS 40432 (Biological Physics).
8. Alternatives for CHEM 10171–10172 and 20273–20274 are CHEM 10181–10182 plus the associated laboratories.
9. PHYS 30481 (Modern Observational Techniques) is offered in the fall of odd years.
10. Assumes no AP credit or advanced language placement.

COURSE DESCRIPTIONS
All of the courses associated with this academic program can be found online at registrar.nd.edu/students/class_search.php. The scheduled classes for a given semester may be found by clicking on “Class Search” and selecting the subject Physics. Course descriptions can be found by clicking on the subject code and course number in the search results.

HONORS TRACK IN PHYSICS
The goal of this honors track is to give our most talented students an exceptional background in physics research. Participation in this program will increase their level of commitment and productivity while preparing them for successful postgraduate work.

The track will accept physics majors in good academic standing as early as the spring of their sophomore year, who have identified their research advisor in the Physics Department and have already completed one semester of undergraduate research. Acceptance will be based on a research statement and transcript. At acceptance into the track a formal agreement will be set up between the student and the advisor.

To graduate with this honor, students will have to complete:

1. Typically at least three semesters and one summer of independent research either at Notre Dame or another university or research laboratory. Alternate research/internship venues and opportunities must be approved in advance by the DUS or Department Chair. Students are expected to apply for REU, COS-SURF or other summer funding as appropriate.
2. A substantial thesis that needs to be approved by the advisor (a manuscript submitted for publication can substitute only if the student has made substantial contributions to the work).
3. A presentation at a national or regional meeting, or at the Notre Dame COS-JAM conference.
4. Successful completion of all requirements for one of the physics concentrations, or completion of the physics in medicine degree.
5. A GPA of at least 3.33 in College of Science courses.

Thesis Requirements:
The final draft of the thesis will be written under the supervision of the advisor, and will be submitted by April 1. Each thesis will be reviewed by one member of the Undergraduate Research Committee. If the thesis is not approved, a second committee member will read the thesis and confer. The students will be notified by April 15 if a rewrite is needed. The rewrite will be due May 1.

The thesis is intended to support and develop each student’s independence, scientific communication skills, critical review skills, and understanding of their research in the context of the larger field. It will have the added benefit of helping students prepare for graduate applications and fellowships.

The student’s transcript will carry the notation “Honors Physics” to distinguish it from the Glynn Family Honors Program. If the student is also in the Glynn Family Honors program, the thesis presented in that program could be considered for the Honors Track in Physics, but would need approval by the Physics Undergraduate Research Committee.

SUMMARY OF REQUIREMENTS FOR THE DEGREE OF BACHELOR OF SCIENCE IN PHYSICS

<table>
<thead>
<tr>
<th></th>
<th>Physics</th>
<th>Physics in Medicine</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mathematics</td>
<td>11.5</td>
<td>11.5</td>
</tr>
<tr>
<td>Physics</td>
<td>41.5</td>
<td>32.5</td>
</tr>
<tr>
<td>Chemistry</td>
<td>7</td>
<td>16</td>
</tr>
<tr>
<td>Biology</td>
<td>—</td>
<td>8</td>
</tr>
<tr>
<td>Science Electives</td>
<td>—</td>
<td>9</td>
</tr>
<tr>
<td>Language</td>
<td>Intermediate-Level</td>
<td></td>
</tr>
<tr>
<td>WR 13100</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Philosophy*</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>Theology*</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>History*</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Social Sciences*</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Literature/Fine Arts*</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Moreau First Year Experience</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Free Electives</td>
<td>28.5∗</td>
<td>11.5∗</td>
</tr>
<tr>
<td></td>
<td>124</td>
<td>124</td>
</tr>
</tbody>
</table>

∗ One of these courses must be a University Seminar.
Assumes intermediate-level competency in language was achieved by taking two 4-credit courses at the introductory level and one 3-credit course at the intermediate level.
Preprofessional Studies

Chair, Assistant Dean and Faculty:
Rev. James K. Foster, C.S.C., M.D.
Associate Dean for Collegiate Sequence & Study Abroad:
Sr. Kathleen Cannon, O.P.
Assistant Dean, Advisor and Faculty:
Kathleen J.S. Kolberg, Ph.D.
Advisor and Faculty:
Susan Gursky, Ph.D.
Hillebrand Center Director and Faculty:
Dominic Vachon, Ph.D.

Adjunct Professors:
Mark Fox, M.D.; Gary B. Fromm, M.D.; Robert D. White, M.D.; Brandon Zabukovic, M.D.

Program of Studies. The Department of Preprofessional Studies offers several programs in the two major sequences, namely the program sequence in science preprofessional studies (SCPP) and the programs in the collegiate sequence (SCBU, SCCO, SCED).

SCIENCE PREPROFESSIONAL PROGRAM (SCPP)

Healthcare in the United States has been undergoing a sea change including health systems, best clinical practices, and training. Extending even into the pre-professional undergraduate years. There is an emphasis on broader and deeper education and interest in professionals on the healthcare team beyond the physician is expanding rapidly. This major is designed to allow those seeking to enter any of the health professions to customize their undergraduate education to fulfill the prerequisites for a variety of health professions schools. The biggest change has come from medical admissions with a new 7.5 hour MCAT exam and a changing emphasis on competencies rather than a checklist of prerequisites. There is an emphasis on a depth of science competency (e.g. biochemistry, research methods, and statistics) and an added emphasis on the psychosocial aspects of care.

With the new holistic model of pre-medical education, this major offers flexibility to study across science departments and space in the schedule to add depth in the humanities or social science by adding a second major or minor. This department also provides general elective courses, open to all majors, that address clinical practice and medical systems (See the following section on the Hillebrand Center).

There are 24 credit hours of science elective courses required beyond the core sciences. These include most upper level science courses taught across the traditional science departments (biological sciences, chemistry, physics and mathematics). The classes are taken during the school year and only occasionally, with consultation with your advisor, should students take any of the major courses in the summer. The Notre Dame College of Science does not allow transfer of science courses with the exception of preapproved courses through Notre Dame International Programs. Those student who wish to matriculate directly to medical school after graduation should plan to take cell biology, statistics and biochemistry by the end of junior year in order to take the MCAT at the end of that year. Students planning to attend PA or PT programs should plan physiology and anatomy during the junior year. Student involvement in research is encouraged and up to 2 credit hours per semester for 3 semesters taken in one of the traditional science departments can count toward the 24 science elective credits (total of 6 maximum).

Non-science courses are important in preparation for health professional schools. The AAMC Admissions Initiative has identified development of cultural competence, ethics, communication skills and background in human behavior as critical in the competencies of future physicians. Because of this, students should take multiple courses in social science, humanities and ethics.

The major allows students to customize their development for the scientific and non-scientific competencies for health professions schools. Students are also advised to chart their progress through an e-portfolio and fill out their academic preparation with experiences in service, clinical settings, teamwork, reliability, and in leadership. Experience in being responsible for the well-being of others is a key factor in preparation for the health professions.

Information concerning preparation for admission to schools of medicine, dentistry, physician assistant, veterinary medicine, optometry, podiatry, pharmacy, physical therapy, occupational therapy, public health, post-baccalaureate nursing, as well as information on several other allied health careers, is available for all majors from the Center for Health Science Advising, 219 Jordan Hall of Science.

BACHELOR OF SCIENCE WITH A MAJOR IN PREPROFESSIONAL STUDIES

PREPROFESSIONAL SCIENCE SEQUENCE

(124 semester hour credits; 64 science hour credits minimum)

First Year
First Semester
WR 13100 English Writing and Rhetoric 3
MATH 10350 (see Note 1) 4
CHEM 10171 4
History or Social Science* 3
Philosophy or Theology* 3
Moreau First Year Experience 1
———
18

Second Semester
Philosophy or Elective* 3
MATH 10360 4
CHEM 10172 4
History or Social Science* 3
University Seminar 3
Moreau First Year Experience 1
———
18

Sophomore Year
First Semester
CHEM 20273/21273 4
BIOS 20201. General Biology A 3
BIOS 21201. General Biology A Lab 1
Elective(s) 3–6
Language (see Note 2) 3
———
14–17

Second Semester
CHEM 20274/21274 4
BIOS 20202. General Biology B 3
BIOS 21202. General Biology B Lab 1
Elective(s) 3
Language 3
———
16

Junior Year
First Semester
Science Elective 3
Physics (PHYS 30210, 31210) (see Note 3) 4
Language or Elective 3
Philosophy or Elective 3
Science Elective 3
———
16

Second Semester
Science Elective 3
Science Elective 3
Physics (PHYS 30220, 31220) 4
Electives 6
———
16

Senior Year
First Semester
Science Elective 3
Science Elective 3
Philosophy or Theology or upper-level English Literature (Note 4) 3
Electives 6
———
15

Second Semester
Science Elective 3
Theology 3
Elective 3
Science Elective 3
———
12

* One of these courses must be a University Seminar for those who start Notre Dame as First Year students; transfer students are exempt from the University Seminar.

To Table of Contents
Notes:
1. Students who have completed only six hours of mathematics in the first year of studies may transfer into the program but they will be required to complete a mathematics sequence equivalent to MATH 10350, 10360, or MATH 10550, 10560. Students having taken MATH 10250 (or 10260 or 10270) may do this by taking MATH 10360, while those who have taken only one semester of lower-level calculus should take both MATH 10350, 10360. Those students should see also the discussion on degree credit found later in this section of the Bulletin
2. All students who have had previous exposure to language will be required to take a placement examination in that language for placement in the proper course if the student wishes to continue in that language for the college requirement. If a student wishes to take a new language, of course, be or she must start from the beginning. Spanish is encouraged.
3. PHYS 10310–10320 or PHYS 10411, 20435 may be substituted for PHYS 30210–31210.
4. There is also an emphasis on written communication, most easily fulfilled by taking a literature course in English. For the SCPP major the University Fine Arts/Literature requirement must be met by a literature course taught in English.
5. Undergraduate Research (BIOS 48498 or SC 48100), Teaching Practicum (BIOS 37495), and Directed Readings (BIOS 48497) count toward the 64-hour preprofessional studies major science requirement; however, a maximum of two credits per semester and a combined total of six credit hours may be counted in fulfilling the 64-credit-hour science requirement as well as the maximum credit hours counted toward graduation. Directed Readings (SCPP 46397) counts as general elective credit.
6. Interested parties may obtain additional information including various statistics from the department Web page. See preprofessional.nd.edu.

Summary of Requirements for the Degree of Bachelor of Science in Preprofessional Studies

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biological Sciences</td>
<td>8</td>
</tr>
<tr>
<td>Chemistry</td>
<td>16</td>
</tr>
<tr>
<td>Mathematics</td>
<td>8</td>
</tr>
<tr>
<td>Physics</td>
<td>8</td>
</tr>
<tr>
<td>Writing and Rhetoric</td>
<td>3</td>
</tr>
<tr>
<td>Language, Intermediate-level Competency **11</td>
<td></td>
</tr>
<tr>
<td>Philosophy*</td>
<td>6</td>
</tr>
<tr>
<td>Theology*</td>
<td>6</td>
</tr>
<tr>
<td>History*</td>
<td>3</td>
</tr>
<tr>
<td>Social Science*</td>
<td>3</td>
</tr>
<tr>
<td>Literature (University Seminar 13186 or upper-level English literature; see note 6)</td>
<td>3</td>
</tr>
<tr>
<td>Moreau First Year Experience</td>
<td>2</td>
</tr>
<tr>
<td>Science Electives</td>
<td>24</td>
</tr>
<tr>
<td>General Electives</td>
<td>**25</td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
<td>124</td>
</tr>
</tbody>
</table>

* One of these courses must be a University Seminar.
** Assumes Intermediate-level Competency in Language was achieved by taking two four-credit and one three-credit courses.

HILLEBRAND CENTER FOR COMPASSIONATE CARE IN MEDICINE

As part of the Department of Preprofessional Studies, the Ruth M. Hillebrand Center for Compassionate Care in Medicine has the mission of advancing the scientific theory and evidence based practice of compassionate care in healthcare and of promoting effective communication skills in physicians, nurses, and allied health professionals. The Center offers courses, programs, and research opportunities to help students gain a scientific and humanistic understanding of the importance of compassionate caring in all patient care as well as an introduction to preventing burnout and promoting personal well-being in the health professions. Students can also be involved in research on the integration of compassionate care in clinical practice.

The following elective courses are regularly offered:
- Medical Counseling Skills and Patient-Centered Medicine
- Science of Compassionate Care in the Medical Professions
- Introduction to Clinical Ethics
- Psychology and Medicine
- Film and the Physician
- Introduction to the American Healthcare System
- Spiritualities of Caring in the Helping Professions
- Introduction to Personlism in Medicine: The Pathos Project
- Introduction to Hospice and Palliative Care

COURSE DESCRIPTIONS

All of the courses associated with this academic program can be found online at registrar.nd.edu/students/class_search.php. The scheduled classes for a given semester may be found by clicking on “Class Search” and selecting the subject Science Preprofessional. Course descriptions can be found by clicking on the subject code and course number in the search results.

COLLEGIATE SEQUENCE PROGRAMS

The three collegiate sequence programs, science-business, science-computing, and science-education, were instituted in 1987. These three programs allow students to obtain a strong science background while simultaneously preparing them for professions in health care, business, computing or education.

SCIENCE-BUSINESS COLLEGIATE SEQUENCE

The Science-Business Collegiate Sequence in the Department of Preprofessional Studies is an individualized course of study which incorporates courses from the basic areas of business along with the four basic areas of science. The major prepares students to pursue health care professional education such as medical school, dental school, public health, or health care administration. It also enables students to attain a diversified background to enter an MBA program leading to a position in the scientific or health professions business area. It is also a complete and sufficient program to enable the B.S. graduate of the sequence to enter the scientific business market immediately upon graduation.

Information on the areas of public health and hospital administration, as well as the business needs of the pharmaceutical, biological and chemical industries are available in the office of the Department of Health Professions, 219 Jordan Hall of Science.

The other departments in the College of Science as well as the colleges of arts and letters and business administration provide all course instruction in the curricula of the Science-Business Collegiate Sequence.

BACHELOR OF SCIENCE WITH A MAJOR IN SCIENCE-BUSINESS

All science-business majors take the following basic sequence of science courses:
- General Biology (BIOS 20201–20202 and 21201 and 21202)¹
- CHEM 10171 and 11171 and 10172 and 11172 and two of the following: CHEM 20273 and 21273, CHEM 20274 and 21274, SC 20110, CHEM 10112
- Calculus (MATH 10350–10360 or 10550–10560)¹ ²
- Physics (PHYS 30210–30220)³ and 31210, 31220
- Statistics (ACMS 20340 or BIOS 40411)

They also are required to take 20–21 credits of science electives,³ completing a minimum of 64 credits of science courses.

Also required for the major are the following business and economics courses:
- Principles of Microeconomics (ECON 10010 or 20010)⁴ ⁵
- Accountancy I (BASC 20100)
- Corporate Financial Management (BASC 20150)
- Principles of Management (BASC 20200)
- Principles of Marketing (BASC 20250)

One upper-level business elective for which prerequisites are completed.

Requirements for the program are summarized in the table following this section.

Notes:
1. Equivalent or higher-level sequences in science may be substituted, e.g., BIOS 10161–10162 for BIOS 10250–10260 or MATH 10201–10202 or MATH 10850–10860 for MATH 10550–10560.
2. Students who have completed only six hours of mathematics in their first year may transfer into the program, but they will be required to complete a
mathematics sequence equivalent to MATH 10350, 10360 or MATH 10550, 10560. Students having taken MATH 10250, (or 10260 or 10270) may do this by taking MATH 10360, while those who have taken only one semester of lower-level calculus should take both MATH 10350, 10360. (See also the discussion on science degree credit, found later in this section of the Bulletin.)

3. PHYS 10310–10320 or PHYS 10411, 20435 may be substituted for PHYS 30210–30220.

4. The choice by the student of the elective courses in science in the program will be discussed with the student and will be based on the future industrial or health professions interests of the student. Any major-level College of Science courses (i.e., those taken to meet science-major requirements and not those designated as “Recommended University electives”) and that are not being used to fulfill specific graduation requirements can be used to satisfy the “Science Elective” requirement. Major-level geology courses cross-listed as science courses may be taken as science electives. Students are restricted to no more than two credits per semester (six total) for science credit and three credits per semester (nine total) for graduation credit of courses such as Undergraduate Research or Directed Readings.

5. The economics requirement for this major is fulfilled by taking Principles of Microeconomics either in the first year (ECON 10010) or in the sophomore year (ECON 20010). Note: The course ECON 13181 (Social Science University Seminar) will not fulfill the economics requirement for this major.

6. For this major, the University social science requirement will be fulfilled by the required economics course. Additional social science courses are recommended and will count toward the student’s general electives.

Suggested Curriculum for the Degree of Bachelor of Science in the Science-Business Collegiate Sequence (124 semester hour credits: 64 science hour credits, minimum)

**First Year**

**First Semester**

- CHEM 10171, 11171 4
- MATH 10350 or 10550. Calculus (Note 2) 4
- WR 13100  3
- Theology* 3
- History* 3
- Moreau First Year Experience 1

**Second Semester**

- CHEM 10172 and 11172 4
- MATH 10360 or 10560 Calculus 4
- Fine Arts or Literature* 3
- Philosophy* 3
- ECON 10010* 3
- Moreau First Year Experience 1

**Second Semester**

- BIOS 20201 General Biology A 3
- BIOS 21201 General Biology A Lab 1
- CHEM 20273, 21273 (or SC 20110, 21110) 4
- Language Elective 3
- Science Elective 3

**Junior Year**

**First Semester**

- SC 20110 Physical Geology 3 (4)
- PHYS 30210, 31210 Physics I 4
- BASC 20200 (MGT) 3
- Theology 3
- Science Elective 3

**Second Semester**

- BIOS 40411. Biostatistics or ACMS 20340 Statistics for Life Sciences 4 (3)
- PHYS 30220, 31220 Physics II 4
- BASC 20150 (FIN) 3
- Elective 3
- Science Elective 3

**Senior Year**

**First Semester**

- Science Electives 6
- Elective 3
- BASC 20250 (MKT) 3
- Philosophy 3

**Second Semester**

- Science Electives 6
- Electives 6
- Business Elective 3

**Notes:**

1. Equivalent or higher-level sequences in science may be substituted, e.g., BIOS 10161–10162 for BIOS 20201–20202 or MATH 10850–10860 for MATH 10550–10560.

2. Students who have completed only six hours of mathematics in their first year may transfer into the program, but they will be required to complete a mathematics sequence equivalent to MATH 10350, 10360 or MATH 10550, 10560. Students having taken MATH 10250 (or 10260 or 10270) may do this by taking MATH 10360, while those who have taken only one semester of lower-level calculus should take both MATH 10350, 10360. (See also the discussion on science degree credit found later in this section of the Bulletin.)

3. PHYS 10310–10320 or PHYS 10411, 20435 may be substituted for PHYS 30210–30220.

4. The choice by the student of the elective courses in science for the Science-computing program will be based on the student’s scientific interest as developed during his or her studies of the four basic areas of science. Any major-level College of Science courses (i.e., those taken to meet science-major requirements and not those designated as “Recommended University electives”) and that are not being used to fulfill specific graduation requirements can be used to satisfy...
the “Science Elective” requirement. Major-level geology courses cross-listed as science courses may be taken as science electives. Students are restricted to no more than two credits of courses such as Undergraduate Research or Directed Readings in the science elective total.

Suggested Curriculum for the Degree of Bachelor of Science in the Science-Computing Collegiate Sequence (124 semester hour credits; 64 science hour credits, minimum)

**First Year**
**First Semester**
- CHEM 10171 and 11171 4
- MATH 10550 Calculus (Note 2) or 10350 4
- WR 13100 3
- Theology* 3
- History* 3
- Moreau First Year Experience 1

**Second Semester**
- CHEM 10172 and 11172 4
- MATH 10560 Calculus or 10360 4
- Fine Arts/Literature* 3
- Philosophy* 3
- Social Science* 3
- First Year Experience 1

**Sophomore Year**
**First Semester**
- BIOS 20201 General Biology A 3
- BIOS 21201 General Biology A Lab 1
- CHEM 20273 and 21273 or SC 20110/21110 4
- Language 3
- CSE Course 4 (3)

**Second Semester**
- BIOS 20202 General Biology B 3
- BIOS 21202 General Biology B Lab 1
- CHEM 20274, 21274 (or CHEM 10122) 4 (3)
- Language 3
- Elective 3

**Junior Year**
**First Semester**
- Science Elective 3
- CSE 20211 Fundamentals of Computing 4
- PHYS 30210, 31210 General Physics I 4
- Theology 3
- Elective (or Language) 3

**Second Semester**
- BIOS 30411 Biostatistics or ACMS 20340 Statistics for Life Sciences 4 (3)
- PHYS 30220, 31220 General Physics II 4
- CSE 20212 Fundamentals of Computing II 4
- Philosophy 3

**Senior Year**
**First Semester**
- Science Electives 9
- CSE 30331 Data Structures or CSE 20110 Discrete Mathematics 3
- Electives 3

**Second Semester**
- Science Electives 9
- CSE 30246 Database Concepts 3
- Electives 3

* One of these must be a University Seminar.

**SCIENCE-EDUCATION COLLEGIATE SEQUENCE**

The science-education collegiate sequence in the Department of Preprofessional Studies is an individualized course of study which incorporates many courses from the four basic areas of science along with education courses that most states require to give the student the background necessary to receive a certificate to teach in a secondary education system. Information concerning the requirements for secondary education in the various states, as well as the general course requirements for a certificate necessary to teach science in a secondary education program, is available in the College of Science office, 248 Nieuwland.

The other departments in the College of Science and the other colleges of the University, as well as the Education Department at Saint Mary’s College, provide all course instruction in the curricula of the Science-Education Collegiate Sequence.

**BACHELOR OF SCIENCE WITH A MAJOR IN SCIENCE-EDUCATION**

All science-education majors take the following basic sequence of science courses:

- General Biology (BIOS 20201–20202 and 21201 and 21202)
- CHEM 10171 and 10172 and (CHEM 20273 and 21273, CHEM 20274 and 21274) or (CHEM 20273 AND 21273, ENVG 20110) OR (SC 20110, ENVG 20120)
- Calculus (MATH 10350–10360 or 10550–10560)
- Physics (PHYS 30210–30220)

They also are required to take 20 credits of science electives, completing a minimum of 60 credits of science courses.

Also required for the major are the following education courses taught by Saint Mary’s College:

- EDUC 201 Teaching in a Multicultural Society
- EDUC 220 Applied Media and Instructional Technology
- EDUC 345 Curriculum and Assessment in the High School Setting
- EDUC 346 Instructional Strategies and Classroom Management in the High School Setting
- EDUC 350 Educational Psychology: Human Growth and Development of the Adolescent
- EDUC 356 Educational Psychology: Educating Exceptional Learners
- EDUC 449 Teaching Science in the Secondary School
- EDUC 475 Student Teaching in the Secondary School (spring of senior year)

The education courses are those required in the State of Indiana but are also those that are required most often by the educational accrediting agencies of most states. The practical teaching experience which is required will also be arranged through the Education Department at Saint Mary’s College.

Requirements for the program are summarized in the table above.

**Notes:**
1. Equivalent or higher-level sequences in science may be substituted, e.g., BIOS 10161–10162 for BIOS 20201–20202 or MATH 10850–10860 for MATH 10550–10560.
2. Students who have completed only six hours of mathematics in their first year may transfer into the program, but they will be required to complete a mathematics sequence equivalent to MATH 10350, 10560 or MATH 10550, 10560. Students having taken MATH 10250 (or 10260 or 10270) may do this by taking MATH 10360, while those who have taken only one semester of lower-level calculus should take both MATH 10350, 10360. (See also the discussion on science degree credit found in this section.)
3. PHYS 10310–10320 or PHYS 10411, 20435 may be substituted for PHYS 30210–30220.
4. The choice by the student of the elective courses in science for the Science-education program will be based upon the requirements and list of courses suggested by the various state educational systems. Since the timing of the course work is particularly constrained for this major, the student should work closely with his or her advisor: an associate dean in the College of Science and an assigned advisor in the Education Department at Saint Mary’s College.
5. Any major-level College of Science courses (i.e., those taken to meet science-major requirements and not those designated as “Recommended University electives”) and that are not being used to fulfill any specific graduation requirements can be used to satisfy the “Science Elective” requirement. Major-level geology courses cross-listed as science courses may be taken as science electives. Students are restricted to no more than two credits of courses such as Undergraduate Research or Directed Readings in the science elective total.

Suggested Curriculum for the Degree of Bachelor of Science in the Science-Education Collegiate Sequence (124 semester hour credits: 60 science hour credits, minimum)
Preprofessional Studies

First Year
First Semester
CHEM 10171 and 11171 4
MATH 10350 or 10550 Calculus (Note 2) 4
WR 13100 3
Theology* 3
History* 3
Moreau First Year Experience 1

Second Semester
CHEM 10172 and 11172 4
MATH 10360 or 10560 Calculus 4
Elective* 3
Philosophy* 3
Social Science* 3
Moreau First Year Experience 1

Sophomore Year
First Semester
BIOS 20201 General Biology A 3
BIOS 21201 General Biology A Lab 1
SC 20110 Planet Earth / 21110 1
or
CHEM 20273 and 21273 4
Language 3
Education 201F (SMC) 3
Elective 3

Second Semester
BIOS 20202 General Biology B 3
BIOS 21202 General Biology B Lab 1
CHEM 20274 and 21274,  4 (3)
or CHEM 10122
Language or Elective 3
Fine Arts/Literature 3
EDUC 220 (SMC) 3

Junior Year
First Semester
PHYS 30210, 31210 General Physics I 4
Science Electives 6
EDUC 345 (SMC) 3
EDUC 356 (SMC) 3

Second Semester
PHYS 30220, 31220 General Physics II 4
Science Electives 8
EDUC 350 (SMC) 3
EDUC 346 (SMC) 3

Senior Year
First Semester
Science Electives 6
EDUC 449 (SMC) 3
Philosophy 3
Theology 3

Second Semester
EDUC 475 (SMC) 12

* One of these courses must be a University Seminar.

 SUMMARY OF MINIMAL REQUIREMENTS FOR THE
DEGREE OF BACHELOR OF SCIENCE IN A COLLEGIATE SEQUENCE MAJOR

<table>
<thead>
<tr>
<th></th>
<th>Science-Business</th>
<th>Science-Computing</th>
<th>Science-Education</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biological Sciences</td>
<td>8</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>Chemistry</td>
<td>8</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>Organic Chemistry/Geology</td>
<td>8</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>Mathematics</td>
<td>8</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>Physics</td>
<td>8</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>Statistics: ACMS 20340 or BIOS 40411</td>
<td>3–4</td>
<td>3–4</td>
<td>0</td>
</tr>
<tr>
<td>Science Electives</td>
<td>20–21</td>
<td>20–21</td>
<td>20–21</td>
</tr>
</tbody>
</table>

Total Required Science 64 64 60

Business Courses 15 0 0
Computing Courses 0 14–15 0
Education Courses 0 0 33
Language Intermediate Level Competency
Writing and Rhetoric 3 3 3
Philosophy* 6 6 6
Theology* 6 6 6
History* 3 3 3
Social Sciences 3 3 3
Literature/Fine Arts 3 3 3
Moreau First Year Experience 2 2 2
Free Electives 10** 10** 0**

Total 124 124 128

* One of these courses must be a University Seminar.

** Assumes intermediate-level competency in language achieved by taking two 4.0-credit- and one 3.0-credit courses.
Special Programs

DOUBLE MAJORS IN SCIENCE

In certain instances, students have the option of pursuing majors in two departments in the College of Science. Combinations that are normally approved include: Biological Sciences with Chemistry; Biological Sciences with Mathematics; Biological Sciences with Physics; Biochemistry with Mathematics; Biochemistry with Physics; Chemistry with Mathematics; Chemistry with Physics; Environmental Sciences (first major) with Mathematics; Mathematics with Physics; and Science Business, Science Computing, Science Education with supplementary major in ACMS or Statistics. Examples of combinations that are normally forbidden include: Preprofessional Studies with any other science majors, College Sequence majors (Science Business, Science Computing, Science Education) with any other science majors except supplementary majors in ACMS and Statistics, parallel subprograms such as Mathematics and Life Sciences with Physics-in-Medicine and either of those with Biological Sciences or Biochemistry, any majors among Mathematics, ACMS and Statistics. All requirements of each major must be met, with no exceptions. Failing to complete a required course terminates that major for a student. Every student who wishes to major in two departments in the College of Science must prepare an agenda of specific courses to be taken, which both advisors and the dean must approve. This should be done as early as possible, but absolutely no later than the seventh day of the senior year. In certain instances, a student may possibly receive approval of a normally forbidden combination of majors, but only if a specific program has been set up by the seventh day of the sophomore year.

All double major programs in science are extremely challenging programs that require that the student take four or five science courses at a time. Thus, only students of superior scholastic ability should consider this as an option.

Students are warned that it is almost certain that completing a double major in two sciences will require total credits well over the college minimum of 124. Conflicts in scheduling of required courses may occur; neither the college nor the departments undertake to reschedule courses for the sake of double majors. For these reasons, it must be emphasized that completing a double major may well require more than four years. Only one degree is awarded (degrees in science do not specify a field).

Dual Degree Program with the Mendoza College of Business

Coordinators:
Neil Mangus
Director of Admissions
Master of Business Administration Program
Malgorzata Dobrowolska-Furdyna
Associate Dean, College of Science

Program of Studies. The dual degree five-year program in the Mendoza College of Business and the College of Science enables the student to earn the master of business administration and bachelor of science degrees in a major in one of the five undergraduate departments in the College of Science.

This program, instituted in 1994, offers students the opportunity to better integrate studies in science and in management. The student completing this program will have a background in management as well as the first professional degree in one of the undergraduate majors of the College of Science. Because it is a demanding program, only those students of superior scholastic ability who have the aptitude, motivation and maturity necessary for the combined graduate and undergraduate program should apply. Those with outstanding internship experiences in business will be looked upon favorably. Advisors for the program are available for consultation about the advisability of applying for the program and about meeting the particular needs of students pursuing this program.

The program is open only to those currently enrolled Notre Dame students who have completed three years of an undergraduate science first major. Students interested in making application for the MBA/Science program should apply to the college of Science and request that a dean's eligibility letter be sent to the MBA Office for them.

An applicant who is not admitted to the dual degree MBA/Science program continues in the undergraduate program and completes his or her science major in the usual four-year period.

As a general guide, it is expected that a student accepted to this program will take two courses for the undergraduate degree during the summer session following his or her junior year. Every dual-degree student is also expected to participate in the orientation for the MBA program. This program will occupy the entire day for the two weeks prior to the first day of classes. Orientation is mandatory for all students beginning the MBA program.

Students in the five-year science/MBA program are also required to:

(1) Complete a minimum of 48 MBA credit hours and maintain a GPA of at least 3.0 to successfully complete the program.
(2) Take all MBA courses in their fourth year.
(3) Maintain full-time student status (minimum course load of 12 credit hours per semester). Credit hours can come from science or MBA programs.

The MBA curriculum divides each semester into two modules. In addition to the courses required to complete undergraduate and University requirements, students must complete the following MBA course work:

Summer Session Following Junior Year:
- Math Review Workshop* 0
- Acct Review Workshop* 0
- (Science Undergraduate Requirements 6)

Senior Year—(Science Undergraduate Requirements Each Semester 3–7)
- First Semester, Module 1:
  - ACCT 60100. Cost Accounting 2
  - MBET 60340. Conceptual Foundation of Business Ethics 2
  - MGT 60100. Statistics 2
  - MGT 60300. Organizational Behavior 2
  - First Semester, Interterm Week: Professional Development Seminar 0
  - Communications Seminar++ 1
- First Semester, Module 2:
  - ACCT 60200. Cost Accounting 2
  - FIN 60400. Finance I 2
  - FIN 60210. Microeconomic Analysis 2
  - MARK 60100. Marketing Management 2
  - Second Semester, Module 3:
    - FIN 70600. Finance II 2
    - FIN 60220. Macroeconomic Analysis 2
    - MGT 60990. Strategic Decision Making 2
    - Free Elective 2
  - Second Semester, Interterm Week: Values in Decision Making 1
  - Elective Course 1
- Second Semester, Module 4:
  - MGT 60400. Leadership and Teams 2
  - MGT 60700. Operations Management 2

Fifth Year—(Science Undergraduate Requirements Each Semester 3–7)
- First Semester, Module 1:
  - MGT 60200. Problem Solving 2
  - Management Communication Elective I 2
  - Free Elective* 2
- Interterm Week:
  - OPTIONAL: Two one-credit-hour electives (TBD) OR
  - Corporate Case Studies OR
  - Offshore Program: China or Brussels 2
- First Semester, Module 2:
  - Ethics Elective 2
  - Management Communication Elective II 2
- Second Semester, Module 3:
  - Free Electives 4
  - (Floating Optional Elective 2)


Dual Degree Program with the College of Engineering

Please refer to the Bulletin section under the heading “College of Engineering.”
* Students have the option to take one additional two-credit-hour elective now or in any remaining module.

Second Semester, Interterm Week:
(Optional: Two one-credit-hour electives OR Corporate Case Studies OR Offshore Program: China or Brussels 2)

Second Semester, Module 4:
Free Electives 4
(Floating Optional Elective 2)

+ See "Arts and Letters Core" on the first page of the College of Engineering section.

++ Special one/two-week courses. All other MBA courses are seven weeks in length.

* Occurs during August Orientation

Total for both degrees: 126–132 undergraduate, 48 MBA

Students involved in the MBA/Science program will complete their undergraduate program while completing MBA requirements. MBA course work will not apply to the undergraduate degree. Sample schedules for particular majors are available from advisors or the dean's office. Students who are behind in the completion of their major requirements are strongly recommended to obtain permission and advising before applying to the joint program.

Nondepartmental Courses

COURSE DESCRIPTIONS

All of the courses associated with this academic program can be found online at registrar.nd.edu/students/class_search.php. The scheduled classes for a given semester may be found by clicking on "Class Search" and selecting the subject Science (Non-departmental). Course descriptions can be found by clicking on the subject code and course number in the search results.

Science Degree Credit

Courses are generally taken in the College of Science for one of three reasons: (1) for students in either the College of Arts and Letters, or the Mendoza College of Business, or the School of Architecture, to fulfill a University requirement; (2) for students in either the College of Engineering or the College of Science to fulfill a college requirement; and (3) for students in the College of Science, to fulfill a major requirement. As a result, the College of Science offers different sequences of courses which overlap considerably in content but not level. Thus it is possible for a student who has changed his or her college or major to have taken two courses which overlap in content. Both courses will appear on the student's transcript, but only one will count for degree credit.

As a guideline for the student and the student's advisors, listed below are the groups of courses that overlap considerably in content. (Courses within the same group are shown in the same row and are also enclosed within parentheses; courses listed within the same column generally show a typical normal progression through course work.) In every case, only one course per group should be counted for degree credit. Generally, only the course taken last should be counted. Students and advisors are warned not to use these groups when moving between course sequences but rather to seek advice from the offering department or the College of Science office.

For overlap with courses no longer taught in the year of publication of this Bulletin, please refer to previous editions of this Bulletin.

Credit is not given for both ACMS and MATH courses with the numbers 10140, 10150, 20210, 20340, 20610, 20750, 30440, 30530, 30540, 30610, or any course cross-listed between ACMS and MATH. In the following table the restrictions on MATH courses numbered 10140 and 20340 also apply to the ACMS courses with the same numbers.
<table>
<thead>
<tr>
<th>Table of Contents</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Advisory Council</strong></td>
</tr>
<tr>
<td><strong>172</strong></td>
</tr>
<tr>
<td>Applied and Computational Mathematics and Statistics</td>
</tr>
<tr>
<td>(10140 10141 10145)</td>
</tr>
<tr>
<td>20340 BIOS 40411 30540 MATH 30540</td>
</tr>
<tr>
<td>20210 MATH 20210</td>
</tr>
<tr>
<td>(20620 MATH 20610)</td>
</tr>
<tr>
<td>(20550 PHYS 20451)</td>
</tr>
<tr>
<td>(30530 MATH 30530)</td>
</tr>
<tr>
<td>(30610 MATH 30610)</td>
</tr>
<tr>
<td>(20750 MATH 20750 PHYS 20452)</td>
</tr>
<tr>
<td>Biological Sciences</td>
</tr>
<tr>
<td>(10101 10110)</td>
</tr>
<tr>
<td>10156 10161 10191 10098 20201</td>
</tr>
<tr>
<td>(10107 10118)</td>
</tr>
<tr>
<td>10155 10162 10099 20202</td>
</tr>
<tr>
<td>(20241 30341)</td>
</tr>
<tr>
<td>(20250 20303)</td>
</tr>
<tr>
<td>(40342)</td>
</tr>
<tr>
<td>Chemistry and Biochemistry</td>
</tr>
<tr>
<td>(10101 10113)</td>
</tr>
<tr>
<td>10115 10117 10121 10125 10171 10181</td>
</tr>
<tr>
<td>(10102 10114)</td>
</tr>
<tr>
<td>10116 10118 10122 10126</td>
</tr>
<tr>
<td>(20223 20235 20247 10172 10182)</td>
</tr>
<tr>
<td>(20224 20236 20248 20273 20283)</td>
</tr>
<tr>
<td>(20274 20284)</td>
</tr>
<tr>
<td>(40420 30341 60521)</td>
</tr>
<tr>
<td>(30342 60522)</td>
</tr>
<tr>
<td>Mathematics</td>
</tr>
<tr>
<td>(10120 10110)</td>
</tr>
<tr>
<td>(10250 10240)</td>
</tr>
<tr>
<td>10350 10550 10850 10860 10460</td>
</tr>
<tr>
<td>(10260 10270 10360 10560 10860 10460)</td>
</tr>
<tr>
<td>(20210 ACMS 20210)</td>
</tr>
<tr>
<td>(20480 20610 ACMS 20620 20580 20810)</td>
</tr>
<tr>
<td>(20480 20610 ACMS 20620 20580 20570)</td>
</tr>
<tr>
<td>(20550 20850)</td>
</tr>
<tr>
<td>(20750 ACMS 20750 30650)</td>
</tr>
<tr>
<td>(ACMS 10140 / 10141 / 10145 ACMS 20340 BIOS 40411 30540 ACMS 30540)</td>
</tr>
<tr>
<td>(30530 ACMS 30530)</td>
</tr>
<tr>
<td>(30610 ACMS 30610)</td>
</tr>
<tr>
<td>(30390 40390)</td>
</tr>
<tr>
<td>Physics</td>
</tr>
<tr>
<td>(10111 10310)</td>
</tr>
<tr>
<td>10411 30210 10091 10093 10095</td>
</tr>
<tr>
<td>(10222 10320)</td>
</tr>
<tr>
<td>10422 20435 30220 10092 10094 10096)</td>
</tr>
<tr>
<td>(20431 10424)</td>
</tr>
<tr>
<td>(20330 20464)</td>
</tr>
<tr>
<td>(10052 20051 ENER 20201 STV 20304)</td>
</tr>
<tr>
<td>(10140 20140)</td>
</tr>
<tr>
<td>(20451 MATH 20570 MATH 20610 MATH 20580)</td>
</tr>
<tr>
<td>(20452 MATH 20571 MATH 20750 MATH 30650)</td>
</tr>
</tbody>
</table>

*Note also that no degree credit is given to any students for MATH 10101; additionally, science majors will not receive degree credit for MATH 10120 or MATH 10110.*
## Officers of Administration

### In the College of Science

<table>
<thead>
<tr>
<th>Name</th>
<th>Role</th>
</tr>
</thead>
<tbody>
<tr>
<td>MARY E. GALVIN, Ph.D.</td>
<td>Dean of the College of Science</td>
</tr>
<tr>
<td>MALGORZATA DOBROWOLSKA-FURDYNA, Ph.D.</td>
<td>Associate Dean of the College of Science</td>
</tr>
<tr>
<td>SR. KATHLEEN CANNON, O.P., DMin.</td>
<td>Assistant Dean of the College of Science</td>
</tr>
<tr>
<td>MICHAEL D. HILDRETH, Ph.D.</td>
<td>Associate Dean of the College of Science</td>
</tr>
<tr>
<td>REV. JAMES K. FOSTER, C.S.C., M.D.</td>
<td>Assistant Dean of the College of Science</td>
</tr>
<tr>
<td>KATHLEEN J.S. KOLBERG, Ph.D.</td>
<td>Assistant Dean of the College of Science</td>
</tr>
</tbody>
</table>

### In the Departments and Programs

<table>
<thead>
<tr>
<th>Name</th>
<th>Role</th>
</tr>
</thead>
<tbody>
<tr>
<td>CRISLYN D’SOUZA-SCHOREY, Ph.D.</td>
<td>Chair of the Department of Biological Sciences</td>
</tr>
<tr>
<td>BRIAN M. BAKER, Ph.D.</td>
<td>Chair of the Department of Chemistry and Biochemistry</td>
</tr>
<tr>
<td>ANDREW SOMMESE, Ph.D.</td>
<td>Chair of the Department of Applied and Computational Mathematics and Statistics</td>
</tr>
<tr>
<td>JEFFREY A. DILLER, Ph.D.</td>
<td>Chair of the Department of Mathematics</td>
</tr>
<tr>
<td>CHRISTOPHER F. KOLDA</td>
<td>Chair of the Department of Physics</td>
</tr>
<tr>
<td>REV. JAMES K. FOSTER, C.S.C., MD</td>
<td>Chair, Preprofessional Studies</td>
</tr>
<tr>
<td>KASTURI HALDER, Ph.D.</td>
<td>Director of the Center for Rare and Neglected Diseases</td>
</tr>
<tr>
<td>IAN CARMICHAEL, Ph.D.</td>
<td>Director of the Radiation Laboratory</td>
</tr>
<tr>
<td>MARK S. ALBER, Ph.D.</td>
<td>Director of the Center for Study of Biocomplexity</td>
</tr>
<tr>
<td>DAVID W. SEVERSON</td>
<td>Director of the Eck Family Global Health Institute</td>
</tr>
<tr>
<td>DAVID R. HYDE, Ph.D.</td>
<td>Kenna Director of the Zebrafish Research</td>
</tr>
<tr>
<td>MARK A. SUCKOW, D.V.M.</td>
<td>Director of the Freimann Life Sciences Center</td>
</tr>
<tr>
<td>FRANCIS J. CASTELLINO, Ph.D.</td>
<td>Director of the WM. Keck Center for Transgene Research</td>
</tr>
<tr>
<td>M. SHARON STACH, Ph.D.</td>
<td>Director of the Harper Cancer Research Institute</td>
</tr>
</tbody>
</table>

## Advisory Council

<table>
<thead>
<tr>
<th>Name</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>DR. MONICA Y. ALLEN-AXELERD</td>
<td>West Bloomfield, Michigan</td>
</tr>
<tr>
<td>MR. JOHN J. ANTON</td>
<td>San Francisco, California</td>
</tr>
<tr>
<td>MR. STEVE ASLAGE</td>
<td>Rancho Santa Fe, California</td>
</tr>
<tr>
<td>DR. DAVID M. ASMUTH</td>
<td>Carmichael, California</td>
</tr>
<tr>
<td>MR. PAUL F. BARANAY</td>
<td>New Haven, Connecticut</td>
</tr>
<tr>
<td>MR. WILLIAM C. BATEN</td>
<td>Midland, Texas</td>
</tr>
<tr>
<td>MR. MATTHEW J. BOLER</td>
<td>Inverness, Illinois</td>
</tr>
<tr>
<td>DR. GEORGE J. BOLS</td>
<td>Spout, New York</td>
</tr>
<tr>
<td>MR. JACK BREEN</td>
<td>Shaker Heights, Ohio</td>
</tr>
<tr>
<td>DR. SAMUEL J. CHMELL</td>
<td>Riverside, Illinois</td>
</tr>
<tr>
<td>DR. WILLIAM D. CLAYPOOL</td>
<td>Newton Square, Pennsylvania</td>
</tr>
<tr>
<td>DR. ANNE CONKLIN REYNOLDS</td>
<td>Toledo, Ohio</td>
</tr>
<tr>
<td>MR. JOHN E. CROWLEY</td>
<td>Princeton, New Jersey</td>
</tr>
<tr>
<td>MR. EDWARD L. DELAHANTY</td>
<td>Naples, Florida</td>
</tr>
<tr>
<td>MR. JOHN F. DELLISANTI</td>
<td>Wilson, Connecticut</td>
</tr>
<tr>
<td>MR. STEPHEN M. DuFOUR</td>
<td>Wellesley, Massachusetts</td>
</tr>
<tr>
<td>DR. R. LAWRENCE DUNWORTH</td>
<td>Palm Beach, Florida</td>
</tr>
<tr>
<td>DR. DEBORAH L. FROGAMENI</td>
<td>Sylvania, Ohio</td>
</tr>
<tr>
<td>MR. MICHAEL J. GALLAGHER</td>
<td>Castle Rock, Colorado</td>
</tr>
<tr>
<td>MR. JOHN GARIBALDI</td>
<td>Houston, Texas</td>
</tr>
<tr>
<td>MR. PAUL J. GILSINGER</td>
<td>Winona, Mississippi</td>
</tr>
<tr>
<td>DR. ROBERT H. HARRIS</td>
<td>Holmdel, New Jersey</td>
</tr>
<tr>
<td>MS. JAN COREY HAWK</td>
<td>Lima, Ohio</td>
</tr>
<tr>
<td>DR. SANDRA URDANETTA HARTMANN</td>
<td>Lancaster, Pennsylvania</td>
</tr>
<tr>
<td>MR. TOM HENDRICK</td>
<td>Bronxville, New York</td>
</tr>
<tr>
<td>DR. GREGORY A. HOFFMAN</td>
<td>Fort Wayne, Indiana</td>
</tr>
</tbody>
</table>

## Officers of Administration • Advisory Council
Faculty

Christopher Adkins. Associate Professional Specialist, Management; Executive Director of the Notre Dame/Deloitte Center for Ethical Leadership. Bachelor of Arts, Coll of William & Mary, 1995; Master of Arts, Boston University, 2001; Doctor of Philosophy, Coll of William & Mary, 2009 (2016)

John Felix Affleck-Graves. Executive Vice President; The Notre Dame Chair in Finance; Professor, Finance. B.S. Mathematics, University of Cape Town, 1972; Master of Science, ibid., 1974; Philosophiae Doctor, ibid., 1977; B.S. Commerce, ibid., 1982 (1986)

Lacey Nicole Abern. Assistant Professional Specialist, Biological Sciences. Bachelor of Science, University of Notre Dame, 2003; Master of Public Health, Emory University, 2008 (2009)

Tan Ahn. Assistant Professor, Physics. Bachelor of Science, SUNY at Stony Brook, 2002; Master of Science, ibid., 2004; Philosophiae Doctor, ibid., 2008 (2014)


Maurizio Albahari. Fellow, Joan B. Kroc Institute for International Peace; Fellow, Kellogg Institute for International Studies; Associate Professor, Anthropology. Bachelor of Arts, Universita Degli Studi, 2000; Master of Arts, University California Irvine, 2002; Philosophiae Doctor, ibid., 2006 (2008)

Simeon Alder. Fellow, Nanovic Institute for European Studies; Assistant Professor, Department of Economics. Bachelor of Arts, Graduate Inst of Int'l Studies, 1998; Master of Arts, UCLA, 2005; Philosophiae Doctor, ibid., 2009 (2009)

Alex Himonas Alexandrou. Professor, Mathematics. Bachelor of Science, University of Patras, 1976; Master of Science, Purdue University, 1982; Philosophiae Doctor, ibid., 1985 (1989)

Nahid Erfan Alexandrou. Associate Professional Specialist, First Year of Studies. Bachelor of Science, Purdue University, 1979; Master of Science, ibid., 1981; M.S. Engineering, ibid., 1985 (1991)


Joseph Phillip Amar. Professor, Classics; Concurrent Professor, Theology. Bachelor of Arts, Catholic University of America, 1970; Bachelor of Sacred Theology, ibid., 1973; Licentiate in Sacred Theology, ibid., 1974; Master of Arts, ibid., 1983; Philosophiae Doctor, ibid., 1988 (1988)

George Alex Ambrose. Associate Professional Specialist, Kaneb Center for Teaching and Learning; Concurrent Associate Professional Specialist, First Year of Studies; Associate Professor of the Practice; Associate Program Director, ePortfolio Assessment. Bachelor of Arts, Rutgers State University of NJ, 2002; Master of Arts Education, Rutgers University, 2003; Philosophiae Doctor, Nova University, 2013 (2008)

Mike Amezcue. Assistant Professor, History. Bachelor of Arts, UCLA, 2004; Master of Arts, Yale University, 2006; Philosophiae Doctor, ibid., 2011 (2014)


Selena Kathleen Anders. Assistant Professor, School of Architecture. Bachelor of Arts, DePaul University, 2005; Master of Arts in Architecture, University of Notre Dame, 2009 (2009)

Thomas Francis Anderson. Dr. Scoll Professor of Romance Languages and Literatures; Professor, Romance Languages and Literatures; Fellow, Kellogg Institute for International Studies. Bachelor of Arts, Bowdoin College, 1992; Master of Arts, University of Pennsylvania, 1994; Philosophiae Doctor, ibid., 1998 (1998)

Ruth Maree Abbey. John M. Regan Jr. Director of the Joan B. Kroc Institute for International Peace Studies; Professor, Political Science; Interim Director, Joan B. Kroc Institute for International Peace; Fellow, Kellogg Institute for International Studies. Bachelor of Arts, Monash University, 1984; Master of Arts, McGill University, 1989; Philosophiae Doctor, ibid., 1995 (2005)

Hussein Ali Abdulsater. Assistant Professor, Classics. B Electrical Engineering, American University of Beirut, 2006; Master of Arts, ibid., 2007; Master of Philosophy, Yale University, 2010; Doctor of Philosophy, ibid., 2013 (2016)

Christopher Paul Abram. Associate Professor, English. Bachelor of Arts, University of Cambridge, 1998; Master of Philosophy, ibid., 1999; Philosophiae Doctor, ibid., 2004 (2013)

Nicole Louise Achee. Research Associate Professor, Biological Sciences. Bachelor of Science, Saint Louis University, 1992; Master of Science, Texas A&M University, 1995; Philosophiae Doctor, Uniformed Services Health Sci., 2004 (2013)

Carl Bruce Ackermann. Nolan Professorship for Excellence in Undergraduate Instruction; Professional Specialist, Finance; Teaching Professor. Bachelor of Arts (Latin), Amherst College, 1984; Philosophiae Doctor, UNC at Chapel Hill, 2000 (1998)

David Acton. Assistant Professional Specialist, Snite Museum. Bachelor of Arts, University of Michigan, 1976; Master of Arts, ibid., 1979; Philosophiae Doctor, ibid., 1993 (2013)

Idris Adjerid. Assistant Professor, Management. Bachelor of Arts, Virginia Polytechnic Institute, 2005; Master of Business Admin, ibid., 2008; Philosophiae Doctor, Carnegie Mellon University, 2013 (2013)
Gary A. Anderson, Hesburgh Professor of Catholic Theology; Professor, Theology; Bachelor of Arts, Albion College, 1977; Master of Divinity, Duke University, 1981; Philosophiae Doctor, Harvard University, 1985 (2003)

Megan Andrew, Assistant Professor, Sociology; Bachelor of Science, Utah State University, 1999; Master of Science, University of Wisconsin-Madison, 2004; Philosophiae Doctor, ibid., 2009 (2011)

Wendy Angst, Associate Professional Specialist, Management; Associate Teaching Professor; Assistant Department Chair, Management; Bachelor of Science, Michigan State University, 1995; Master in Health Administration, University of La Verne, 2000 (2010)

Corey M. Angst, Associate Professor, Management; Viola D. Hank Associate Professor of Management; Bach of Sci in Mech Engr, Western Michigan University, 2001; Master of Business Admin, University of Delaware, 2006; Philosophiae Doctor, University of Maryland, 2007 (2007)

Panos J. Antsaklis. H. Clifford and Evelyn A. Brosy Professor of Electrical Engineering; Professor, Electrical Engineering; Concurrent Professor, Applied Computational Mathematics & Statistics; Concurrent Professor, Applied Computational Mathematics. Diploma, Nat Technical University of Athens, 1972; Master of Science, Brown University, 1974; Philosophiae Doctor, ibid., 1977 (1980)

Robert Scott Appleby, Marilyn Keough Dean of the Donald R. Keough School of Global Affairs; Dean, Keough School of Global Affairs; Professor, History; Bachelor of Arts, University of Notre Dame, 1978; Master of Arts, University of Chicago, 1979; Philosophiae Doctor, ibid., 1985 (1994)

Ani Arapahan. The Frank M. Freimann Professor of Physics; Professor, Physics. Bachelor of Arts, Clark University, 1980; Philosophiae Doctor, ibid., 1986 (1989)


Elizabeth A. Archie. Associate Professor, Biological Sciences. Bachelor of Arts, Bowdoin College, 1997; Philosophiae Doctor, Duke University, 2005 (2009)

S. M. Niaz Arifin. Research Assistant Professor, Computer Science and Engineering, M.S. Computer Sci and Engr, University of Texas at Dallas, 2006; Philosophiae Doctor, University of Notre Dame, 2013; Bach of Sci in Computer Engr, Bangladesh University of Eng. & Tech, (2013)

Neil Arner. Assistant Professor, Theology; Bachelor of Science, Georgia Institute of Technolog, 2001; Master of Divinity, Princeton Theological Seminary, 2006; Master of Sacred Theology, Yale University-Div School, 2007; Master of Philosophy, Yale University, 2011; Master of Arts, ibid., 2011; Philosophiae Doctor, ibid., 2012 (2013)

Carolina Arroyo. Associate Professional Specialist, Political Science. Bachelor of Arts, SUNY at Buffalo, 1983; Master of Arts, Stanford University, 1990 (1996)

Brandon Lee Ashfeld. Associate Professor, Chemistry and Biochemistry. Bachelor of Science, University of Minnesota, 1998; Philosophiae Doctor, University of Texas-Austin, 2004 (2007)

James Matthew Ashley. Associate Professor, Theology; Department Chair, Theology. Bachelor of Science, Saint Louis University, 1982; Master of Teacher Science, Weston School of Theology, 1988; Philosophiae Doctor, University of Chicago, 1993 (1993)

Ann W. Astell. Professor, Theology; Bachelor of Science, Marquette University, 1974; Master of Arts, ibid., 1981; Philosophiae Doctor, University of Wisconsin-Madison, 1987 (2007)

Robert Audi. The David E. Galle Professor of Business Ethics; Professor, Philosophy. Bachelor of Arts, Colgate University, 1963; Master of Arts, University of Michigan, 1965; Philosophiae Doctor, ibid., 1667 (2003)

Yury Petrovich Avvakumov. Assistant Professor, Theology; Master of Arts, Leningrad State University, 1981; Philosophiae Doctor, Russian Theological Seminary, 1990; Philosophiae Doctor, Ludwig-Maximilians University Munich, 2001 (2009)

Ruediger Bachmann. Associate Professor, Department of Economics; Stepan Associate Professor of Economics; Fellow, Nanovic Institute for European Studies. Master of Arts, University of Mainz, 1999; Master of Arts, ibid., 1999; Master of Arts, ibid., 2001; Master of Arts, ibid., 2001; Master of Arts, Yale University, 2002; Master of Philosophy, ibid., 2004; Philosophiae Doctor, ibid., 2007 (2014)

Brad Alan Badertscher. Professor, Accountancy. Master of Business Admin, University of Iowa, 2001; Bachelor of Arts, Univ. of Nebraska at Kearney, 2001; Philosophiae Doctor, University of Iowa, 2007 (2007)


Marcio Bahia. Associate Professional Specialist, Romance Languages and Literatures; Associate Teaching Professor. Bachelor of Arts, Federal University of Minas Gerais, 2001; Master of Arts, University of Ottawa, 2004; Doctor of Philosophy, ibid., 2011 (2016)

Brian M. Baker. Professor, Chemistry and Biochemistry; Department Chair, Chemistry and Biochemistry. Bachelor of Science, New Mexico State Univ. Park, 1992; Philosophiae Doctor, University of Iowa, 1997 (2001)


Mary Bales. Research Assistant Professor, Management. Bachelor of Arts, Indiana Univ-Bloomington, 2002; Philosophiae Doctor, Purdue University, 2013 (2013)


Timothy E. Balko. Assistant Professional Specialist, Management; Assistant Teaching Professor. Bachelor of Social Work, Valparaiso University, 1985; Juris Doctor, ibid., 1989 (2013)

Christopher Gordon Ball. Fellow, Kellogg Institute for International Studies; Fellow, Joan B. Kroc Institute for International Peace; Assistant Professor, Anthropology. Bachelor of Arts, University of California Sta Barbara, 1996; Master of Arts, University of Chicago, 2003; Philosophiae Doctor, ibid., 2007 (2013)
Dinshaw S. Balsara. Associate Professor, Physics; Concurrent Associate Professor, Applied Computational Mathematics & Statistics. Bachelor of Science, Jai Hind College, 1977; Master of Science, Indian Inst of Tech Kanpur, 1982; Master of Science, University of Chicago, 1986; Philosophiae Doctor, University of IL Urbana-Champaign, 1990 (2001)

Rashna Dinshaw Balsara. Research Associate Professor, Center For Transgene Research. Bachelor of Science, University of Bombay, 1985; Master of Science, ibid., 1991; Philosophiae Doctor, ibid., 1998 (2007)

Zygmunt Guido Baranski. Notre Dame Professor of Dante and Italian Studies; Professor, Romance Languages and Literatures. Bachelor of Arts, University of Hull, 1973; Philosophiae Doctor, ibid., 1976 (2007)

Sotirios Angel Barber. Professor, Political Science. Bachelor of Arts, University of IL Urbana-Champaign, 1964; Master of Arts, University of Chicago, 1967; Philosophiae Doctor, ibid., 1973 (1986)

Daniel W Bardayan. Professor, Physics, B.S. Physics, Tennessee Technological University, 1993; Master of Science, Yale University, 1994; Master of Philosophy, ibid., 1997; Philosophiae Doctor, ibid., 1999 (2013)

Christopher Andrew Baron. Associate Professor, Classics; Fellow, Nanovic Institute for European Studies; Concurrent Associate Professor, History. Bachelor of Arts (Latin), Illinois Wesleyan University, 1995; Master of Arts, University of Chicago, 2000; Philosophiae Doctor, University of Pennsylvania, 2006 (2006)


Amy Coney Barrett. Diane and M.O. Miller II Professor of Law; Professor, Law School. Bachelor of Arts, Rhodes College, 1994; Juris Doctor, University of Notre Dame, 1997 (2002)

Katrina D. Barron. Associate Professor, Mathematics. B.S. Mathematics, University of Chicago, 1986; B.S. Physics, ibid., 1987; Philosophiae Doctor, Rutgers University, 1996 (2001)

Kevin Barry. Fellow, Institute for Latino Studies; Professional Specialist, Kaneb Center for Teaching and Learning; Concurrent Professional Specialist, Computing and Digital Technology Program - Arts and Letters. Bachelor of Science, Florida Institute of Technolog, 1988; Master of Science, ibid., 1990 (1994)


Viva Ona Bartkus. Associate Professor, Management; Fellow, Kellogg Institute for International Studies; Fellow, Joan B. Kroc Institute for International Peace. Bachelor of Arts, Yale University, 1989; Master of Arts, ibid., 1989; Master of Arts, University of Oxford, 1991; Philosophiae Doctor, ibid., 1993 (2004)


Christiane Baumeister. Assistant Professor, Department of Economics. Bachelor of Arts, University of Bayreuth, 1999; Master of Arts, University of Siena, 2003; Philosophiae Doctor, University of Ghent, 2010 (2015)

Laura A. Bayard. Librarian, Hesburgh Libraries. Bachelor of Arts, Shippensburg University, 1969; Master Degree - Unspecified, University of Pittsburgh, 1974 (1989)

Timothy James Bays. Associate Professor, Philosophy. Bachelor of Arts, Northwestern University, 1988; Philosophiae Doctor, UCLA, 1994; Philosophiae Doctor, ibid., 1994; Philosophiae Doctor, ibid., 1999 (1999)

Mary Louise Beard. Research Assistant Professor, Physics. Master of Science, University of Surrey, 2003; Master of Science, University of Notre Dame, 2007; Philosophiae Doctor, ibid., 2010 (2010)


Edward N. Beatty. Associate Dean, Keough School of Global Affairs; Fellow, Kellogg Institute for International Studies; Professor, History. Bachelor of Arts, Princeton University, 1983; Master of Arts, University of New Mexico Main, 1992; Philosophiae Doctor, Stanford University, 1996 (2000)

Emily Scott Beck. Assistant Professional Specialist, Art, Art History, and Design; Assistant Professor of the Practice, Art, Art History, and Design. Bachelor of Arts, Meredith College, 2001; Master of Fine Arts, UNC at Chapel Hill, 2010 (2013)

Christine Ann Becker. Associate Professor, Film, Television, and Theatre. Bachelor of Arts, University of IL Urbana-Champaign, 1993; Master of Arts, University of Wisconsin-Madison, 1995; Philosophiae Doctor, ibid., 2001 (2000)

Mary Patricia Beckman. Professional Specialist, Center for Social Concerns. Bachelor of Arts, University of Notre Dame, 1975; Master of Arts, ibid., 1983; Philosophiae Doctor, ibid., 1986 (2001)

Gail Bederman. Associate Professor, History; Concurrent Associate Professor, American Studies; Concurrent Associate Professor, Gender Studies. Bachelor of Fine Arts, New York University, 1978; Master of Arts, Brown University, 1984; Philosophiae Doctor, ibid., 1992 (1992)

Timothy C. Beers. Notre Dame Chair in Astrophysics; Professor, Physics. Bachelor of Science, Purdue University, 1979; B.S. Physics, ibid., 1979; Master of Arts, Harvard University, 1980; Philosophiae Doctor, ibid., 1983 (2014)

Mark Joseph Behrens. John and Margaret McAndrews Professor of Mathematics; Professor, Mathematics. Bachelor of Science, University Alabama Tuscaloosa, 1998; Bachelor of Science, ibid., 1998; Bachelor of Science, ibid., 1998; Bachelor of Science, ibid., 1998; Master of Arts, ibid., 1998; Philosophiae Doctor, University of Chicago, 2003 (2014)

Heidi Ann Beidinger. Assistant Professional Specialist, Biological Sciences; Assistant Professor of the Practice. Bachelor of Science, Indiana Univ-Bloomington, 1989; Master of Public Health, University of IL at Chicago, 1996; Philosophiae Doctor, Western Michigan University, 2013 (2014)

Alexander Daniel Beihammer. Associate Professor, History. Bachelor of Arts, University of Vienna, 1995; Master of Arts, ibid., 1995; Philosophiae Doctor, ibid., 1999 (2015)

Kimberly Hope Belcher. Tisch Family Assistant Professor of Theology; Assistant Professor, Theology. Bachelor of Science, University of Florida, 2001; Master of Theological Studies, University of Notre Dame, 2003; Philosophiae Doctor, ibid., 2009 (2013)
Anthony Joseph Bellia.  Professor, Law School; O’Toole Professorship of Constitutional Law; Concurrent Professor, Political Science, Notre Dame Presidential Fellow.  Bachelor of Arts, Canisius College, 1991; Juris Doctor, University of Notre Dame, 1994 (2000)

Patricia Louise Bellia.  The William J. and Dorothy K. O’Neill Professor of Law; Professor, Law School; Notre Dame Presidential Fellow.  Bachelor of Arts (Latin), Harvard University, 1991; Juris Doctor, Yale University, 1995 (2000)

Gary E. Belovsky.  Professor, Biological Sciences; Martin J. Gillen Director of the Environmental Research Center.  Bachelor of Business Admin., University of Notre Dame, 1972; Master of Science, Yale University, 1974; Philosophiae Doctor, Harvard University, 1977 (2001)

Georg Peter Berg.  Research Professor, Physics.  Bachelor of Science, University of Groningen, 1968; Diploma, University of Cologne, 1972; Philosophiae Doctor, ibid., 1974 (2009)

Cindy S. Bergeman.  Professor, Psychology; Associate Vice President for Research, Compliance.  Bachelor of Science, University of Idaho, 1979; Master of Science, Pennsylvania State University, 1987; Philosophiae Doctor, ibid., 1989 (1990)

Jeffrey Harold Bergstrand.  Concurrent Professor, Department of Economics; Professor, Finance; Fellow, Kellogg Institute for International Studies.  Bachelor of Arts, Northwestern University, 1974; Master of Arts, University of Wisconsin-Madison, 1979; Philosophiae Doctor, ibid., 1981 (1986)


Melissa Berke.  Concurrent, Biological Sciences; Assistant Professor, Civil & Environmental Engineering & Earth Sciences.  Bachelor of Arts, Oberlin College, 2000; Master of Science, University of California Riverside, 2003; Philosophiae Doctor, University of Minnesota at Dul, 2011 (2013)

Gianna A. Z. Bern.  Associate Professor Professional Specialist, Finance; Associate Teaching Professor.  Bachelor of Business Admin., Illinois Institute of Technolo, 1987; Master of Business Admin, University of Chicago, 1989 (2014)


Sara Bernstein.  Associate Professor, Philosophy.  Bachelor of Arts, University of Chicago, 2004; Master of Arts, University of Arizona, 2008; Doctor of Philosophy, ibid., 2010 (2016)

Marinho Angelo Bertanha.  Instructor, Department of Economics.  Bachelor of Science, University of Sao Paulo, 2006; Master of Arts, Fundacao Getulio Vargas de Sao, 2009; Philosophiae Doctor, Stanford University, 2015 (2016)

Nora J. Besansky.  Professor, Biological Sciences.  Bachelor of Science, Oberlin College, 1982; Master of Science, Yale University, 1987; Philosophiae Doctor, ibid., 1990 (1997)


David M. Betson.  Associate Professor, College of Arts and Letters.  Bachelor of Arts, Kalamazoo College, 1972; Master of Arts, University of Wisconsin-Madison, 1975; Philosophiae Doctor, ibid., 1980 (1982)

John Renner Betz.  Associate Professor, Theology; Fellow, Nanovic Institute for European Studies.  Bachelor of Arts, Wake Forest University, 1991; Philosophiae Doctor, University of Virginia, 1999 (2010)


Kraig Beyerlein.  Associate Professor, Sociology; Associate Director, Center for Study of Religion & Society; Associate Director, Center for the Study of Religion and Society.  Bachelor of Arts, Concordia University, 1998; Master of Arts, UNC at Chapel Hill, 2002; Philosophiae Doctor, ibid., 2006 (2009)

Ikaros I. Bigi.  The Grace-Bagley II Professor of Physics; Professor, Physics.  Master of Science, Max-Planck-Gesellschaft, 1973; Philosophiae Doctor, ibid., 1976 (1988)

Zihini Basar Bilgicer.  Concurrent Associate Professor, Chemistry and Biochemistry; Associate Professor, Chemical and Biomolecular Engineering.  Bachelor of Science, Bogazici Universitesi, 1998; Philosophiae Doctor, Tufts University, 2004 (2008)

Richard E. Billo.  Associate Vice President for Research; Professor, Computer Science and Engineering; Associate Vice President for Research.  Bachelor of Arts, West Virginia University, 1978; Master of Arts, University of the Pacific, 1981; Master of Science, Arizona State University, 1986; Philosophiae Doctor, ibid., 1989 (2013)


Alessia Blad.  Professional Specialist, Romance Languages and Literatures.  Bachelor Degree - Unspecified, Indiana University South Bend, 2008; Master of Arts, University of Notre Dame, 2008 (2010)

Patricia A. Blanchette.  Professor, Philosophy.  Bachelor of Arts, Univ. of California-San Diego, 1983; Philosophiae Doctor, Stanford University, 1990 (1993)

Jaimie Bleck.  Concurrent Assistant Professor, African and African American Studies; Assistant Professor, Political Science; Fellow, Kellogg Institute for International Studies.  Bachelor of Arts, University of IL at Chicago, 2003; Master of Arts, Cornell University, 2008; Philosophiae Doctor, ibid., 2011 (2011)
Gianluca Blois. Research Assistant Professor, Aerospace and Mechanical Engineering. Bachelor of Engineering, Polytechnic Institute of Milan, 2001; Master of Science, ibid., 2003; Philosophiae Doctor, ibid., 2007 (2015)

Matt Bloom. Associate Professor, Management; Fellow, Kellogg Institute for International Studies. Bachelor of Science, Baker University, 1983; Master of Arts, University of Kansas, 1989; Philosophiae Doctor, Cornell University, 1996 (1996)

W. Martin Bloomer. Professor, Classics; Fellow, Nanovic Institute for European Studies. Bachelor of Arts, Yale University, 1982; Master of Arts, ibid., 1983; Master of Philosophy, ibid., 1984; Philosophiae Doctor, ibid., 1987 (1998)

Susan D. Blum. Professor, Anthropology. Bachelor of Arts (Latin), Stanford University, 1980; Master of Arts, University of Michigan, 1986; Master of Arts, ibid., 1988; Philosophiae Doctor, ibid., 1994 (2000)

Joel David Boerckel. Assistant Professor, Aerospace and Mechanical Engineering. Bach of Sci in Mech Engr, Grove City College, 2006; Master of Science, Georgia Institute of Technolog, 2009; Philosophiae Doctor, ibid., 2011 (2014)

Tobias Boes. Associate Professor, German and Russian Languages and Literature. Bachelor of Arts, Reed College, 1999; Master of Philosophy, Yale University, 2003; Philosophiae Doctor, ibid., 2006 (2007)


Rachel Bohlmann. American History Librarian. Bachelor of Arts, Valparaiso University, 1988; Master of Arts, University of Iowa, 1995; Philosophiae Doctor, ibid., 2001; Master of Library & Info Sci, University of IL Urbana-Champaign, 2012 (2015)

Paul William Bohn. Arthur J. Schmitt Professor of Chemical and Biomolecular Engineering; Professor, Chemical and Biomolecular Engineering; Joint Appointment, Chemistry and Biochemistry. Bachelor of Science, University of Notre Dame, 1977; Philosophiae Doctor, University of Wisconsin-Madison, 1981 (2006)

Diogo Bolster. Concurrent, Applied Computational Mathematics & Statistics; Associate Professor, Civil & Environmental Engineering & Earth Sciences. Bachelor of Science, University College Dublin, 2002; Master of Science, Univ. of California-San Diego, 2005; Philosophiae Doctor, ibid., 2007 (2010)

Catherine Elizabeth Bolten. Concurrent, African and African American Studies; Fellow, Kellogg Institute for International Studies; Associate Professor, Anthropology. Bachelor of Arts, Williams College, 1998; Master of Philosophy, University of Cambridge, 2000; Master of Arts, University of Michigan-Dearborn, 2003; Philosophiae Doctor, University of Michigan, 2008 (2009)

Christine M Bonfiglio. Associate Professional Specialist, Alliance for Catholic Education; Director Professional Standards. Bachelor of Arts, Indiana University South Bend, 1996; Master of Arts, Western Michigan University, 2002; Philosophiae Doctor, ibid., 2003 (2012)

Francesca Maria Bordogna. Associate Professor, Program of Liberal Studies; Concurrent Associate Professor, History. Philosophiae Doctor, University of Chicago, 1998 (2011)

Tatiana Botero. Associate Professional Specialist, Romance Languages and Literatures; Associate Teaching Professor. Associate in Arts, Miami-Dade Community College, 1986; Bachelor of Arts, West Virginia University, 1996; Master of Arts Education, ibid., 1997 (2011)

Eileen Hunt Botting. Associate Professor, Political Science; Fellow, Joan B. Kroc Institute for International Peace. Bachelor of Arts, Bowdoin College, 1993; Bachelor of Arts, University of Cambridge, 1995; Master of Arts, Yale University, 1997; Master of Philosophy, ibid., 1998; Master of Arts, University of Cambridge, 1999; Philosophiae Doctor, Yale University, 2001 (2001)

Maureen B. M. Boulton. Professor, Romance Languages and Literatures. Bachelor of Arts, College of New Rochelle, 1970; Master of Arts, University of Pennsylvania, 1972; Philosophiae Doctor, ibid., 1976; Master of Literature, University of Oxford, 1980 (1985)


Kevin W. Bowyer. Schomohr-Prein Professor of Computer Science and Engineering; Professor, Computer Science and Engineering; Department Chair, Computer Science and Engineering; Concurrent Professor, Electrical Engineering. B.S. Economics, George Mason University, 1976; Philosophiae Doctor, Duke University, 1980 (2001)

Sunny K. Boyd. Professor, Biological Sciences. Bachelor of Arts, Princeton University, 1981; Master of Science, Oregon State University, 1984; Philosophiae Doctor, ibid., 1987 (1987)


Katherine A. Brading. Associate Professor, Philosophy: Director of History and Philosophy of Science Program. Bachelor of Science, University of London, 1992; Bachelor of Philosophy, University of Oxford, 1996; Philosophiae Doctor, ibid., 2003 (2004)


Steven James Brady. Fellow, Nanovic Institute for European Studies; Associate Professional Specialist, First Year of Studies. Bachelor of Arts, Roosevelt University, 1989; Master of Arts, University of Notre Dame, 1992; Philosophiae Doctor, ibid., 1998 (1998)


Robert Joseph Brandt. Professional Specialist, School of Architecture. Bachelor of Science, University of Southern Indiana, 1986; Master of Fine Arts, Indiana State University Main, 1989 (1992)

Julia Margaret Braungart-Rieker. Mary Hesburgh Flaherty and James F. Flaherty III Collegiate Professor of Psychology, Professor, Psychology. Bachelor of Science, Syracuse University, 1987; Master of Science, Pennsylvania State University, 1990; Philosophiae Doctor, ibid., 1992 (1992)

Joan Frances Brennecke. Keating-Crawford Professor of Chemical Engineering; Professor, Chemical and Biomolecular Engineering. Bachelor of Science, University of Texas-Austin, 1984; Master of Science, University of Illinois-Chicago, 1987; Philosophiae Doctor, University of IL Urbana-Champaign, 1989 (1989)

Sarah Ellen Brenner. Associate Professional Specialist, First Year of Studies; Assistant Dean, First Year of Studies. Bachelor of Arts, University of Notre Dame, 1998; Master of Arts, Ohio State University, 2003; M.S. Social Work, ibid., 2003 (1995)
Paul Raymond Brenner. Concurrent Associate Professional Specialist, Computer Science and Engineering; Associate Professional Specialist, Center for Research Computing; Associate Professional of the Practice. Bachelor of Science, University of Notre Dame, 1998; Master of Science, Ohio State University, 2000; Philosophiae Doctor, University of Notre Dame, 2007 (2007)

Robert D. Bretz. Joe and Jane Giovanini Professor of Management; Professor, Management. Bachelor of Arts, Bethany College, 1980; Master of Business Admin, University of Kansas, 1984; Philosophiae Doctor, ibid., 1988 (1997)


Jay Barrett Brockman. Fellow, Center for Social Concerns; Associate Dean, Community and Student Engagement, College of Engineering; Professional Specialist, College of Engineering, with designation of professor of the practice. Bachelor of Science, Brown University, 1982; Master of Engineering, Carnegie Mellon University, 1988; Philosophiae Doctor, ibid., 1992 (1992)

James Robert Brockmole. Associate Professor, Psychology; Associate Dean, College of Arts and Letters. Bachelor of Arts, University of Notre Dame, 1999; Master of Arts, University of Illinois Urbana-Champaign, 2001; Philosophiae Doctor, ibid., 2003 (2009)

Maxime Brodeur. Ortenzio Family Assistant Professor of Applied Medical and Nuclear Physics; Assistant Professor, Physics. B.S. Physics, University of Montreal, 2003; Master of Science, Univ. of British Columbia, 2006; Philosophiae Doctor, ibid., 2010 (2013)

Catherine L. Bronson. Assistant Professional Specialist, Classics; Assistant Teaching Professor. Bachelor of Arts, St Xavier University, 1994; Master of Arts, University of Chicago, 2003; Philosophiae Doctor, ibid., 2012 (2014)

Wyatt Brooks. Fellow, Kellogg Institute for International Studies; Assistant Professor, Department of Economics. Bachelor of Science, University of Washington, 2007; Master of Arts, University of Minnesota, 2011; Philosophiae Doctor, ibid., 2012 (2012)

Seth Nathaniel Brown. Professor, Chemistry and Biochemistry. Bachelor of Science, Massachusetts Institute of Tec, 1988; Philosophiae Doctor, University of Washington, 1994 (1996)

Jessica Ann Brown. Assistant Professor, Chemistry and Biochemistry. Bachelor of Science, Wright State University, 2005; Philosophiae Doctor, Ohio State University, 2010 (2016)


Ramzi Kamal Bualuan. Associate Professional Specialist, Computer Science and Engineering; Assistant Teaching Professor. Bachelor of Science, American University of Beirut, 1983; M.S. Electrical Engr, University of Notre Dame, 1986 (1990)

Ghada Nenr Bualuan. Associate Professional Specialist, Classics; Associate Teaching Professor. Bachelor of Business Admin., American University of Beirut, 1993; Master of Business Admin, Lebanon American University, 1999 (2008)

Aimee Prati Buccellato. Assistant Professor, School of Architecture. Bachelor of Architecture, University of Notre Dame, 2000; M of Arch Design & Urbanism, Harvard University, 2005 (2008)

Kasey S. Buckles. Associate Professor, Department of Economics; Concurrent Associate Professor, Gender Studies. Bachelor of Arts, University of Kentucky, 2000; Master of Arts, Boston University, 2003; Philosophiae Doctor, ibid., 2005 (2005)

Steven Allen Buechler. Professor, Applied Computational Mathematics & Statistics. Bachelor of Arts, Eastern Illinois University, 1975; Bachelor of Science, ibid., 1975; Master of Arts, University of Maryland, 1979; Philosophiae Doctor, University of Maryland, 1981 (1987)

Peter James Bui. Assistant Professional Specialist, Computer Science and Engineering, designation of assistant teaching professor. Bachelor of Science, University of Notre Dame, 2006; Master of Engineering, University of Notre Dame, 2010 (2012)

Martina Bukac. Assistant Professor, Applied Computational Mathematics & Statistics. M.S. Applied Mathematics, University of Zagreb, 2008; Bachelor of Science, ibid., 2008; Philosophiae Doctor, University of Houston, 2012 (2014)

Richard S. Bullene, C.S.C. Assistant Dean, School of Architecture; Associate Professional Specialist, School of Architecture. Bachelor of Architecture, University of Notre Dame, 1976; Master of Divinity, ibid., 1981; Master of Science, University of Pennsylvania, 1992; Philosophiae Doctor, ibid., 1994 (1993)

Bruce A. Bunker. Professor, Physics. Bachelor of Science, University of Washington, 1974; Philosophiae Doctor, ibid., 1980 (1983)

Thomas Gerard Burish. Provost, Provost Office; Professor, Psychology. Bachelor of Arts, University of Notre Dame, 1972; Master of Arts, University of Kansas, 1975; Philosophiae Doctor, ibid., 1976 (2005)


Jeffrey John Burks. Viola D. Hank Associate Professor of Accounting, Associate Professor, Accountancy. Bachelor of Business Admin., University of Notre Dame, 1997; Master of Business Admin, Creighton University, 2002; Philosophiae Doctor, University of Iowa, 2007 (2007)

Peter C. Burns. Professor, Civil & Environmental Engineering & Earth Sciences; Director, Center for Sustainable Energy; Concurrent Professor, Chemistry and Biochemistry. Bachelor of Science, University of New Brunswick, 1988; Master of Science, University of Western Ontario, 1990; Philosophiae Doctor, University of Manitoba, 1994 (1997)

Jorge Agustin Bustamante. Eugene ConleyProfessor of Sociology; Professor, Sociology. Master of Arts, University of Notre Dame, 1970; Philosophiae Doctor, ibid., 1975 (1986)

Joseph A. Buttigieg. William R. Kenan Jr. Professor of English; Professor, English; Fellow, Nanovic Institute for European Studies. Bachelor of Arts, University of Malta, 1968; Bachelor of Philosophy, Heythrop College, 1970; Master of Arts, University of Malta, 1972; Philosophiae Doctor, State University of NY--Binghamton, 1976 (1980)
Theodore J. Cachey. Albert J. Ravarino Family Director, or Deans Program in Dante Studies; Professor, Romance Languages and Literatures; Director, Rome Global Gateway. Bachelor of Arts, Northwestern University, 1978; Master of Arts, UCLA, 1982; Philosophiae Doctor, ibid., 1990

Liang Cai. Assistant Professor, History. Bachelor of Arts, Renmin University Beijing, 1999; Master of Arts, Cornell University, 2003; Philosophiae Doctor, ibid., 2007 (2014)

Jon Philip Camden. Associate Professor, Chemistry and Biochemistry. Bachelor of Science, University of Notre Dame, 2000; Doctor of Philosophy, Stanford University, 2005 (2014)

David Edward Campbell. The Pacey J. Dee Professor of American Democracy; Professor, Political Science; Department Chair, Political Science. Bachelor of Arts, Brigham Young University, 1996; Master of Arts, Harvard University, 2001; Philosophiae Doctor, ibid., 2002 (2002)

Mariana Pinho Candido. Associate Professor, History; Fellow, Kellogg Institute for International Studies. Bachelor of Arts, Fed University of Rio De Janeiro, 1997; Master of Arts, El Colegio de Mexico, 2000; Philosophiae Doctor, York University Toronto, 2006 (2015)

Catherine Cangany. Concurrent Associate Professor, American Studies; Associate Professor, History; Fellow, Nanovic Institute for European Studies. Bachelor of Arts, Indiana Univ-Bloomington, 2000; Master of Arts, University of Michigan, 2004; Philosophiae Doctor, ibid., 2009 (2010)

Kathleen Cannon. OP. Associate Dean, College of Science; Professional Specialist, College of Science. Bachelor of Arts, Ohio Dominican College, 1965; Master of Arts, Providence College, 1975; Doctor of Ministry, Catholic University of America, 1982 (1990)

Elizabeth Gibbons Capdevielle. Assistant Professional Specialist, University Writing Program; Assistant Teaching Professor, University Writing Program. Bachelor of Arts, Saint Louis University, 1997; Master of Arts, Saint Johns College at Santa Fe, 2002; Master of Arts, University of Wisconsin-Madison, 2004; Philosophiae Doctor, ibid., 2012 (2011)

Matthew Capdevielle. Associate Professional Specialist, University Writing Program; University Writing Center; Associate Professor of the Practice. Bachelor of Arts, Saint Louis University, 1996; Master of Arts, Saint Johns College at Santa Fe, 2002; Master of Arts, University of Wisconsin Center, 2004; Philosophiae Doctor, University of Wisconsin-Madison, 2009 (2009)

Mark A. Caprio. Associate Professor, Physics. Bachelor of Science, Oglethorpe University, 1994; Master of Science, Yale University, 1998; Master of Philosophy, ibid., 1999; Philosophiae Doctor, ibid., 2003 (2007)


Gilberto Cardenas. Professor, Sociology; Concurrent Professor, American Studies. Master of Arts, University of Notre Dame, 1972; Philosophiae Doctor, ibid., 1977 (1999)

Laura A. Carlson. Vice President and Associate Provost; Dean, Graduate School; Professor, Psychology. Bachelor of Arts, Dartmouth College, 1987; Master of Arts, Michigan State University, 1991; Philosophiae Doctor, University of Illinois Urbana-Champaign, 1994 (1994)

Ian C. Carmichael. Professor, Chemistry and Biochemistry. B.S. Chemistry, University of Glasgow, 1971; Philosophiae Doctor, ibid., 1975 (1976)

Dania Carollo. Research Assistant Professor; Physics. Philosophiae Doctor, Australian National University, 2011 (2015)

Timothy Edward Carone. Associate Professional Specialist, Management. B.S. Univ. of Kentucky; M.S. University of Arizona; Philosophiae Doctor, ibid (2015)

Paolo Giovanni Carozza. Professor, Law School; Concurrent Professor, Political Science; Director, Kellogg Institute for International Studies; Fellow, Joan B. Kroc Institute for International Peace. Bachelor of Arts (Latin), Harvard University, 1985; Juris Doctor, ibid., 1989 (1996)

Clarence Earl Carter. Professional Specialist, College of Science; Professor of the Practice; Assistant Dean for Faculty Affairs and Special Projects. Master of Science in Admin., Central Michigan University, 1992 (2013)

John Patrick Carter. Professor, Naval Science; Commanding Officer, Naval ROTC. B.S. Physics, Carnegie Mellon University, 1986; Master of Science, Naval Postgraduate School, 1994 (2015)

Peter J. Casarella. Associate Professor, Theology; Fellow, Kellogg Institute for International Studies. Bachelor of Arts, Yale University, 1985; Master of Arts, ibid., 1986; Philosophiae Doctor, ibid., 1992 (2013)


Francis J. Castellino. The Kleiderer-Pezold Chair in Biochemistry; Professor, Chemistry and Biochemistry; WM Keck Center for Transgene Research. Bachelor of Science, University of Scranton, 1964; Master of Science, University of Iowa, 1966; Philosophiae Doctor, ibid., 1968 (1970)

John C. Cavadini. McGrath-Cavadini Director, Institute for Church Life; Professor, Theology; Director, Institute for Church Life. Bachelor of Arts, Wesleyan University, 1975; Master of Arts, Marquette University, 1979; Master of Arts, Yale University, 1981; Master of Philosophy, ibid., 1983; Philosophiae Doctor, Yale University-Div School, 1988 (1990)

Catherine Rose Cavadini. Assistant Professional Specialist, Theology. Bachelor of Arts, University of Notre Dame, 2003; Master of Theological Studies, Duke University, 2005; Philosophiae Doctor, University of Notre Dame, 2010 (2010)


Anjan Chakravartty. Professor, Philosophy; Director, Reilly Center for Science, Technology, and Value; Editor, Studies in History & Philosophy of Science Journal. Bachelor of Science, University of Toronto, 1991; Master of Arts, ibid., 1995; Master of Philosophy, University of Cambridge, 1997; Philosophiae Doctor, ibid., 2001 (2011)

Dominic T. Chaloner. Research Associate Professor, Biological Sciences. Bachelor of Science, University of London, 1991; Philosophiae Doctor, ibid., 1995 (2001)

Patricia A. Champion. Associate Professor, Biological Sciences. Bachelor of Science, Carnegie Mellon University, 1998; Master of Arts, Princeton University, 2000; Philosophiae Doctor, ibid., 2003 (2009)

Matthew Maurice Champion. Research Associate Professor, Chemistry and Biochemistry. Bachelor of Science, University of Iowa, 1997; Philosophiae Doctor, Texas A&M University, 2005 (2009)
To Table of Contents
Anne G. Coleman. Associate Professor, American Studies; Concurrent Associate Professor, History; Bachelor of Arts, Williams College, 1987; Master of Arts, University of Colorado-Boulder, 1992; Philosophiae Doctor, ibid., 1996 (2009)

Jessica L. Collett. Associate Professor, Sociology; Concurrent Associate Professor, Gender Studies; Fellow, Joan B. Kroc Institute for International Peace. Bachelor of Arts, Winthrop College, 1998; Master of Arts, University of Arizona, 2002; Philosophiae Doctor, ibid., 2006 (2006)

Kristen Collette-Schmitt. Director of Special Projects, Mendezza College of Business; Associate Professional Specialist, Finance; Associate Teaching Professor, Bachelor of Arts, Bellarmine College, 2003; Master of Education, North Carolina State University, 2004; Philosophiae Doctor, ibid., 2008 (2008)

Brian Scott Collier. Concurrent Associate Professional Specialist, American Studies; Associate Professional Specialist, Alliance for Catholic Education; Assistant Director, Alliance for Catholic Education. Bachelor of Arts, Loyola University Chicago, 1993; Master of Arts, Colorado State University, 2000; Philosophiae Doctor, Arizona State University, 2006 (2009)

Austin Ignatius Collins, C.S.C. Professor, Art, Art History, and Design; Religious Superior of Carby Hall. Bachelor of Arts, University of Notre Dame, 1977; Master of Divinity, Graduate Theological Union, 1981; Master of Fine Arts, Claremont Graduate School, 1985 (1986)

Frank Hadley Collins. George and Winifred Clark Professor of Biological Sciences; Professor, Biological Sciences. Bachelor of Arts, Johns Hopkins University, 1966; Master of Arts, University of East Anglia, 1973; Master of Arts, University of Notre Dame, 1997; Master of Arts, University of Chicago, 2003 (2007)

Michael John Coppedge. Professor, Political Science; Fellow, Kellogg Institute for International Studies. Bachelor of Science, Randolph-Macon Woman’s College, 1979; Master of Arts, Yale University, 1982; Philosophiae Doctor, ibid., 1988 (1995)

Steven A Corcelli. Associate Professor, Chemistry and Biochemistry. Bachelor of Science, Brown University, 1997; Doctor of Science, Yale University, 2002 (2005)

Thomas C. Corke. Clark Equipment Professor of Aerospace and Mechanical Engineering; Professor, Aerospace and Mechanical Engineering. Bachelor of Science, Illinois Institute of Technolo, 1974; Master of Science, ibid., 1976; Philosophiae Doctor, ibid., 1981 (1999)

Jose Corneli So Da Silva. Associate Professor, School of Architecture. Master of Architecture, University of Lisbon, 1983 (2015)

Sandia Dean Collins. Associate Professional Specialist, Management; Associate Teaching Professor, Bachelor of Arts, Indiana University South Bend, 1994; Master of Arts, University of Notre Dame, 1997; Philosophiae Doctor, ibid., 1999 (1994)


Maria S. Coloma. Associate Professional Specialist, Romance Languages and Literatures. Bachelor of Arts, Najr University of San Marcos, 1984; Master of Arts, University of Pittsburgh, 1998 (2000)

Edward Joseph Conlon. Edward Frederick Sorin Society Professor of Management; Professor, Management. Bachelor of Science, Pennsylvania State University, 1972; Master of Science, Carnegie Mellon University, 1975; Philosophiae Doctor, ibid., 1978 (1992)


Ann-Marie Conrado. Concurrent Assistant Professor, Anthropology; Assistant Professor, Art, Art History, and Design; Fellow, Joan B. Kroc Institute for International Peace. Bachelor of Fine Arts, University of Notre Dame, 1993; Master of Arts, University of Chicago, 2003 (2007)

Michael John Coppedge. Professor, Political Science; Fellow, Kellogg Institute for International Studies. Bachelor of Science, Randolph-Macon Woman’s College, 1979; Master of Arts, Yale University, 1982; Philosophiae Doctor, ibid., 1988 (1995)

Steven A Corcelli. Associate Professor, Chemistry and Biochemistry. Bachelor of Science, Brown University, 1997; Doctor of Science, Yale University, 2002 (2005)

Thomas C. Corke. Clark Equipment Professor of Aerospace and Mechanical Engineering; Professor, Aerospace and Mechanical Engineering. Bachelor of Science, Illinois Institute of Technolo, 1974; Master of Science, ibid., 1976; Philosophiae Doctor, ibid., 1981 (1999)

Jose Cornoell Io Da Silva. Associate Professor, School of Architecture. Master of Architecture, University of Lisbon, 1983 (2015)

Alexandra F. Corning. Research Associate Professor, Psychology. Bachelor of Science, University of Florida, 1988; Master of Science, Loyola University Chicago, 1990; Philosophiae Doctor, Ohio State University, 1994 (2000)

David Bernard Cortright. Special Advisor on Policy, Kough School of Global Affairs; Professional Specialist, Joan B. Kroc Institute for International Peace; Professor of the Practice. Bachelor of Arts, University of Notre Dame, 1968; Master of Arts, New York University, 1970; Philosophiae Doctor, The Union Institute, 1975 (2008)

Shane A. Corwin. Associate Professor, Finance; Faculty Director of the Notre Dame Institute for Global Investing. Bachelor of Science, Mankato State University, 1990; Master of Business Admin, ibid., 1992; Philosophiae Doctor, Ohio State University, 1996 (2000)

Therese Charlotte Cory. Assistant Professor, Philology. Master of Arts, Catholic University of America, 2007; Philosophiae Doctor, ibid., 2009 (2015)

Thomas F. Cosimano. Professor, Finance. Bachelor of Science, State University of NY-Buffalo, 1974; Master of Arts, ibid., 1977; Philosophiae Doctor, ibid., 1979 (1987)

Jesus Costantino. Assistant Professor, English. Bachelor of Arts, University California Davis, 1998; Philosophiae Doctor, University of California Berkeley, 2011 (2012)


Donald Crafton. Professor, Film, Television, and Theatre; The Joseph and Elizabeth Robbie Professor of Film, Television and Theatre. Bachelor of Arts, University of Michigan, 1969; Master of Arts, University of Iowa, 1970; Master of Arts, Yale University, 1974; Philosophiae Doctor, ibid., 1977 (1997)


Michael J. Cramer. Assistant Professional Specialist, University of Notre Dame Environmental Research Center. Bachelor of Arts, Earlham College, 1994; M.S. Biology, Texas Tech University, 1998; Philosophiae Doctor, University of Cincinnati, 2006 (2007)
## Faculty

<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
<th>Education</th>
</tr>
</thead>
<tbody>
<tr>
<td>Keith Wayne Davis</td>
<td>Director, Science Computing;</td>
<td>Bachelor of Science, University of Tulsa, 1999; Master of Science,</td>
</tr>
<tr>
<td></td>
<td>Concurrent Assistant Professional Specialist, Physics;</td>
<td>Clemson University, 2003; Philosophy Doctor, ibid., 2007 (2008)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maureen Gillespie Dawson</td>
<td>Assistant Dean for Cultural Competency and Engagement, First Year of Studies; Associate Professional Specialist, First Year of Studies.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jeanne D. Day</td>
<td>Professor, Psychology. Bachelor of Arts, Univ. of California-San Diego, 1974; Master of Arts, University of IL Urbana-Champaign, 1977; Philosophy Doctor, ibid., 1980 (1980)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>John Deak</td>
<td>Carl E. Koch Associate Professor of History; Fellow, Nanovic Institute for European Studies; Associate Professor, History. Bachelor of Arts, UNC at Chapel Hill, 1998; Master of Arts, University of Chicago, 2000; Philosophy Doctor, ibid., 2009 (2009)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Celia Deane-Drummond</td>
<td>Professor, Theology; Fellow, Joan B. Kroc Institute for International Peace; Concurrent Professor, College of Science; Director, Ctr for Theo, Sci &amp; Human Flourishy. Bachelor of Arts, University of Cambridge, 1977; Philosophy Doctor, University of Reading, 1980; Bachelor of Arts, Trinity College, 1989; Philosophy Doctor, Victoria University of Manchester, 1992 (2011)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Noreen Deane-Moran</td>
<td>Associate Professional Specialist, English; Associate Teaching Professor. Bachelor of Arts, College of New Rochelle, 1963; Master of Arts, University of Notre Dame, 1964; Master of Arts, ibid., 1968; Philosophy Doctor, ibid., 1982 (1982)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alan Robert DeFrees</td>
<td>Professional Specialist, School of Architecture. Bachelor of Architecture, University of Notre Dame, 1974 (1996)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thomas F. Degnan</td>
<td>Tony and Sarah Earley Professor of Energy and the Environment; Professor, Chemical and Biomolecular Engineering. B.S. Engineering-Unspecified, University of Notre Dame, 1973; Philosophy Doctor, ibid., 1977; Master of Accountancy, University of Minnesota, 1980 (2015)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mark Dehmow</td>
<td>Associate Librarian, Hesburgh Libraries. Bachelor of Arts, University of Maine at Orono, 2000; Bachelor of Mathematics, ibid., 2000; Master of Library &amp; Info Sci, University of Illinois-Chicago, 2004 (2001)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cornelius F. Delaney</td>
<td>Professor, Philosophy. Bachelor of Arts, St. John's Seminary, 1961; Master of Arts, Boston College, 1962; Philosophy Doctor, Saint Louis University, 1967 (1967)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Louis A. DelFra</td>
<td>C.S.C. Associate Professional Specialist, Alliance for Catholic Education; Director of Pastoral Life. Bachelor of Arts, University of Notre Dame, 1992; Master of Divinity, ibid., 2003 (2007)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Antonio Delgado</td>
<td>Associate Professor, Physics. Bachelor of Science, Universidad Autonoma, 1997; Philosophy Doctor, ibid., 2001 (2007)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>JoAnn DellaNevia</td>
<td>Professor, Romance Languages and Literatures; Associate Dean, College of Arts and Letters; Fellow, Nanovic Institute for European Studies. Bachelor of Arts, Bryn Mawr College, 1976; Master of Arts, University of Pennsylvania, 1978; Master of Arts, Princeton University, 1980; Philosophy Doctor, ibid., 1982 (1982)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Denise M. DellaRossa</td>
<td>Fellow, Nanovic Institute for European Studies; Professional Specialist, German and Russian Languages and Literature; Teaching Professor. Bachelor of Arts (Latin), Montana State University, 1989; Master of Arts (Latin), Mississippi St University, 1991; Philosophy Doctor, University of Wisconsin-Madison, 2002 (2006)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Patrick Deneen</td>
<td>Associate Professor, Political Science; David A. Potenziani Memorial Associate Professor of Constitutional Studies. Bachelor of Arts, Rutgers University, 1986; Philosophy Doctor, ibid., 1995 (2012)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Michael Desch</td>
<td>Professor, Political Science; Fellow, Kellogg Institute for International Studies; Fellow, Joan B. Kroc Institute for International Peace. Bachelor of Arts, Marquette University, 1982; Master of Arts, University of Chicago, 1984; Philosophy Doctor, ibid., 1988 (2008)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Michael Detlefsen</td>
<td>McMahon-Hank Professor of Philosophy; Professor, Philosophy; Editor, Journal of Formal Logic. Bachelor of Arts, Wheaton College, 1971; Philosophy Doctor, Johns Hopkins University, 1976 (1983)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sarvanan Devaraj</td>
<td>Fred V. Duda Professor of Business; Professor, Management. Bachelor of Science, Bangalore University, 1989; Master of Science, University of Alabama, 1991; Philosophy Doctor, University of Minnesota, 1997 (1996)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jean A. Dibble</td>
<td>Professor, Art, Art History, and Design. Bachelor of Science, University of Wisconsin-Madison, 1979; Master of Arts, University of New Mexico Main, 1981; Master of Fine Arts, University of Wisconsin Center, 1988 (1989)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tarek Dika</td>
<td>Assistant Professor, Program of Liberal Studies. Bachelor of Arts, University of Michigan, 2005; Master of Arts, Johns Hopkins University, 2010; Doctor of Philosophy, ibid., 2013 (2016)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jeffrey Alan Diller</td>
<td>Professor, Mathematics; Department Chair, Mathematics. Bachelor of Science, University of Dayton, 1988; Philosophy Doctor, University of Michigan, 1993 (1998)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Charles Scott Dittbenner II</td>
<td>Associate Professor, Naval Science. Master of Arts, Naval War College, 2008; Master of Arts, American Military University, 2015; B.S. Biology, University of IL Urbana-Champaign, (2016)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sidney Keith D’Mello</td>
<td>Assistant Professor, Psychology and Computer Science and Engineering; Associate Professor, Psychology and Computer Science and Engineering; Assistant Professor, Psychology and Computer Science and Engineering. Bachelor of Science, Christian Brothers College, 2002; Master of Science, University of Memphis, 2004; Philosophy Doctor, ibid., 2009 (2012)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Malgorzata Dobrowska-Furdyna</td>
<td>Professor, Physics. Master of Science, Warsaw University, 1972; Philosophy Doctor, Polish Academy of Science, 1980 (1987)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Darren Theodore Dochuk</td>
<td>Associate Professor, History. Bachelor of Arts, Simon Fraser University, 1995; Master of Arts, Queen’s University, 1998; Philosophy Doctor, University of Notre Dame, 2005 (2015)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anselma T. Dolcich-Ashley</td>
<td>Assistant Professional Specialist, Honors Program in Arts and Sciences; Assistant Professor of the Practice. Bachelor of Science, Georgetown University, 1981; Master of Science, ibid., 1983; Master of Divinity, Westminster College, 1988; Philosophy Doctor, University of Notre Dame, 2011 (2015)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Marie Collins Donahue</td>
<td>Director, Haiti Program; Associate Professional Specialist, Biological Sciences. BS in Nursing, Catholic University of America, 1982; Master of Science, Columbia University, 1989; Master of Public Health, Harvard University, 1995 (2015)</td>
<td></td>
</tr>
</tbody>
</table>
Deborah Lynn Donahue. Associate Professional Specialist, Center For Transgene Research; Associate - Unspecified, Columbia Greene Community Coll, 1994; Bachelor of Science, Cornell University, 1996 (2001)

William C. Donahue. The Rev. John J. Cavanagh, C.S.C., Professor of the Humanities; Professor, German and Russian Languages and Literature; Department Chair, German and Russian Languages and Literature; Fellow, Nanovic Institute for European Studies; Provost Fellow. Bachelor of Science, Georgetown University, 1981; Master of Theological Studies, Harvard Divinity School, 1984; Master of Arts, Middlebury College, 1987; Philosophiae Doctor, Harvard University, 1995 (2015)

William Leon Donaruma. Director, Center for Creative Computing; Professional Specialist, Film, Television, and Theatre; Professor of the Practice. Bachelor of Arts, University of Notre Dame, 1989 (1998)

Richard Edward Donnelly. Concurrent Professional Specialist, First Year of Studies; Fellow, Nanovic Institute for European Studies; Professional Specialist, Film, Television, and Theatre. Bachelor of Fine Arts, University of Wisconsin Center, 1974; Master of Fine Arts, School of the Art Institute of, 1975 (1991)

Kevin Michael Donovan. Fellow, Kellogg Institute for International Studies; Assistant Professor, Department of Economics. Bachelor of Science, Bentley College, 2007; Master of Science, Arizona State University, 2009; Philosophiae Doctor, ibid., 2013 (2013)


Margaret Anne Doody. John and Barbara Glynn Family Professor of Literature; Professor, English. Bachelor of Arts, Dalhousie University Halifax, 1960; Bachelor of Arts, Lady Margaret Hall Oxford, 1962; Master of Arts, ibid., 1967; Doctor of Philosophy, University of Oxford, 1968 (2000)

Dennis Doordan. Professor, School of Architecture; Concurrent Professor, American Studies; Concurrent Professor, Art, Art History, and Design. Bachelor of Arts, Stanford University, 1973; Master of Arts, Columbia University, 1976; Master of Philosophy, ibid., 1978; Philosophiae Doctor, ibid., 1983 (1990)

Kirk Bennett Doran. Associate Professor, Department of Economics. Master of Science, Harvard University, 2002; Bachelor of Arts, ibid., 2002; Master of Arts, Princeton University, 2005; Philosophiae Doctor, ibid., 2008 (2007)

Erika Doss. Professor, American Studies; Concurrent Professor, History; Concurrent Professor, Art, Art History, and Design. Bachelor of Arts, Ripon College, 1978; Master of Arts, University of Minnesota, 1981; Philosophiae Doctor, ibid., 1983 (2007)

Kyle Wesley Doudrick. Assistant Professor, Civil & Environmental Engineering & Earth Sciences. Bach of Sci in Civil Engr, University of Memphis, 2006; M.S. Civil Engr, ibid., 2008; Philosophiae Doctor, Arizona State University, 2013 (2014)

Julia Vignone Douthwaite. Professor, Romance Languages and Literatures; Fellow, Nanovic Institute for European Studies. Bachelor of Arts (Latin), University of Washington, 1981; Master of Arts, University of Washington, 1984; Master of Arts, Princeton University, 1986; Philosophiae Doctor, ibid., 1990 (1991)

Norman J. Dovichi. Grace-Rupley Professor of Chemistry and Biochemistry; Professor, Chemistry and Biochemistry. Bachelor of Science, Northern Illinois University, 1976; Philosophiae Doctor, University of Utah, 1980 (2010)

Robert A. Dowd, C.S.C. Fellow, Kellogg Institute for International Studies; Associate Professor, Political Science. Bachelor of Arts, University of Notre Dame, 1987; Master of Divinity, Jesuit School of Theology, 1993; Master of Arts, UCLA, 2001; Philosophiae Doctor, American College for the Appliance, 2003 (2001)

David Dressing. Associate Librarian, Hesburgh Libraries. Bachelor of Science, Georgetown University, 1987; Master of Arts, Tulane University, 1990; Philosophiae Doctor, ibid., 2007 (2016)


Michael Stephan Driscoll. Associate Professor, Theology; Fellow, Nanovic Institute for European Studies. Bachelor of Arts, Carroll College, 1973; Bachelor of Sacred Theology, Pontifical Gregorian University, 1976; Licentiate in Sacred Theology, Pontificum Athenaeum Anselmian, 1980; Doctor of Sacred Theology, Catholic Institute of Paris, 1986; Philosophiae Doctor, Universite de Paris-Sorbonne, 1986 (1994)

Crislyn D’Souza-Schorey. Morris Pollard Collegiate Professor of Biological Sciences; Department Chair, Biological Sciences; Professor, Biological Sciences. Bachelor of Science, University of Bombay, 1986; Master of Science, ibid., 1988; Philosophiae Doctor, University of Texas-San Antonio, 1992 (1998)


Giles E Duffield. Associate Professor, Biological Sciences. Bachelor of Science, University of Nottingham, 1992; Philosophiae Doctor, University of Cambridge, 1998 (2006)

John M Duffy. O’Neill Family Chair; Associate Professor, English; Director, University Writing Program. Bachelor of Arts, Boston College, 1977; Master of Arts, University College Dublin, 1979; Master of Arts, Columbia University Teachers C, 1982; Philosophiae Doctor, University of Wisconsin-Madison, 2000 (1998)


John Girard Duman. The Martin J. Gillen Professor of Biological Sciences; Professor, Biological Sciences. Bachelor of Science, Pennsylvania St University, 1968; Philosophiae Doctor, Univ. of California-San Diego, 1974 (1974)

Stephen D. Dumont. Professor, Philosophy. Bachelor of Arts, Wabash College, 1974; Master of Arts, University of Toronto, 1976; Philosophiae Doctor, ibid., 1983 (2001)

Robert Matthew Dunn, C.S.C. Professional Specialist, Electrical Engineering; Managing Director, LEAST ; Professor of the Practice. Bachelor of Science, University of Notre Dame, 1965; Master of Science, Pennsylvania State University, 1967; Philosophiae Doctor, University of IL Urbana-Champaign, 1971 (2008)

Amitava Krishna Dutt. Professor, Political Science; Fellow, Kellogg Institute for International Studies; Fellow, Joan B. Kroc Institute for International Peace. Bachelor of Arts, Presidency College, 1975; Master of Arts, University of Calcutta, 1977; Philosophiae Doctor, Massachusetts Institute of Tec, 1983 (1988)
Carsten Hermann Walther Dutt. Assistant Professor, German and Russian Languages and Literature; Fellow, Nanovic Institute for European Studies. Bachelor of Arts, Eberhard Karl University of Tubingen, 1986; Master of Arts, University of Konstanz, 1994; Philosophiae Doctor, University of Heidelberg, 2004 (2012)

Lawrence Henry Dwyer. Associate Professional Specialist, Music; Associate Teaching Professor. Bachelor of Arts, University of Notre Dame, 1966; Master of Science, University of IL Urbana-Champaign, 1967 (2001)

Kenneth W. Dye. Professor, Music; Director, Band, Concurrent Professor, First Year of Studies. Bachelor of Music, University of Southern California, 1974; Master of Arts, California State U-Long Beach, 1980; Doctorate of Education, University of Houston, 1983; Master of Business Admin, ibid., 1985 (1998)

Matthew John Dyer. Associate Professor, Mathematics. Bachelor of Science, University of Sydney, 1983; Master of Science, ibid., 1985; Philosophiae Doctor, ibid., 1988 (1989)

Eva Dziadula. Assistant Professional Specialist, Department of Economics; Assistant Professor of the Practice. Associate in Arts, College of Lake County, 2004; Bachelor of Arts, Lake Forest College, 2006; Master of Arts, University of IL at Chicago, 2010; Philosophiae Doctor, ibid., 2014 (2014)

Robert Fumio Easley. Associate Professor, Management; Department Chair, Management. Bachelor of Arts, University of IL Urbana-Champaign, 1976; Master of Business Admin, Pennsylvania State University, 1989; Philosophiae Doctor, Indiana Univ-Bloomington, 1996 (1994)


Kathleen M. Eberhard. Associate Professor, Psychology; Director of Graduate Studies, Psychology. Bachelor of Arts, University of Rochester, 1987; Master of Arts, Michigan State University, 1991; Philosophiae Doctor, ibid., 1993 (1996)

Richard Masten Economakis. Associate Professor, School of Architecture; Director of Graduate Studies for the Architecture and Urbanism Program, School of Architecture. Bachelor of Arch in Arch, Cornell University, 1983; Master of Architecture, ibid., 1995 (1996)

Brian John Edlefson. Assistant Professor, Art, Art History, and Design. Bachelor of Arts, Western Michigan University, 1996; Master of Science, Yale University, 2005 (2016)

Edmund Patrick Edmonds. Associate Dean, Library Law; Professor, Library Law; Director, Library Law. Bachelor of Arts, University of Notre Dame, 1973; Juris Doctor, University Toledo, 1978 (2006)

Michael Peter Elwell. Assistant Professional Specialist, Art, Art History, and Design; Assistant Teaching Professor. Bachelor of Fine Arts, University of Notre Dame, 2005; Master of Fine Arts, University of IL Urbana-Champaign, 2011 (2011)

Scott Emrich. Concurrent Research Associate Professor, Biological Sciences; Research Associate Professor, Genomics, Disease Ecology & Health. Bachelor of Science, Loyola University Maryland, 2002; Philosophiae Doctor, Iowa State University, 2007 (2007)

Georges Enderle. John T. Ryan Jr. Professor of International Business Ethics; Professor, Marketing; Fellow, Kellogg Institute for International Studies. Philosophiae Doctor, University of Fribourg, 1982 (1992)


William N. Evans. The Keough-Hesburgh Professor of Economics; Professor, Department of Economics; Department Chair, Department of Economics; Fellow, Kellogg Institute for International Studies. Bachelor of Arts, Wake Forest University, 1983; Master of Arts, Duke University, 1985; Philosophiae Doctor, ibid., 1987 (2007)


David Wilson Fagerberg. Professor, Theology. Bachelor of Arts, Augsburg College, 1973; Master of Divinity, Luther Theological Seminary, 1977; Master of Arts, St. John’s University, 1982; Master of Sacred Theology, Yale University-Div School, 1983; Master of Philosophy, Yale University, 1988; Master of Arts, ibid., 1988; Philosophiae Doctor, ibid., 1991 (2003)

Stephen Michael Fallon. Reverend John J. Cavanaugh, C.S.C. Professor of the Humanities (ID); Professor, Program of Liberal Studies; Fellow, Nanovic Institute for European Studies; Concurrent Professor, English. Bachelor of Arts, Princeton University, 1976; Master of Arts, McGill University, 1978; Philosophiae Doctor, University of Virginia, 1985 (1985)

Margot Fassler. Keough-Hesburgh Professor of Music History and Liturgy; Professor, Theology. Master of Arts, Syracuse University, 1978; Master of Philosophy, Cornell University, 1980; Philosophiae Doctor, ibid., 1983 (2010)


Tanisha Fazal. Associate Professor, Political Science. Bachelor of Arts (Latin), Harvard University, 1994; Philosophiae Doctor, Stanford University-Palo Alto, 2001 (2013)

Jeffrey Lee Feder. Professor, Biological Sciences. Bachelor of Science, Pomona College, 1980; Philosophiae Doctor, Michigan State University, 1989 (1993)


Felix Zhiyu Feng. Assistant Professor, Department of Economics. Bachelor of Arts, Peking University, 2007; Master of Arts, Duke University, 2008; Philosophiae Doctor, ibid., 2014 (2014)

Michael T. Ferdig. Professor, Biological Sciences. Bachelor of Science, University of Nebraska-Lincoln, 1987; Master of Science, ibid., 1990; Philosophiae Doctor, University of Wisconsin-Madison, 1997 (2001)
Felipe Fernandez-Armesto, William P. Reynolds
Professor of History; Professor, History; Fellow,
Nanovic Institute for European Studies. Bachelor of
Arts, St John's College Oxford, 1972; Master of
Arts, ibid., 1976; Philosophiae Doctor, ibid.,
1977 (2009)

Harindra J. Fernando. Wayne & Diana Murdy
Endowed Prof. in Engineering & Geo Sciences;
Professor, Civil & Environmental Engineering &
Earth Sciences; Concurrent Professor, Aerospace and
Mechanical Engineering. Bachelor of Science,
The Open Univ. of Sri Lanka, 1979; Master of
Arts, Johns Hopkins University, 1982;

A. Nilesh Fernando. Assistant Professor,
Department of Economics. Bachelor of Arts,
Hamphire College, 2007; Philosophiae
Doctor, Harvard University, 2015 (2016)

Sabrina Ferri. Fellow, Nanovic Institute for
European Studies; Associate Professor, Romance
Languages and Literatures. Bachelor of Arts,
University of Rome, 2000; Philosophiae
Doctor, Stanford University, 2007 (2009)

Barbara J. Fick. Associate Professor, Law School;
Fellow, Joan B. Kroc Institute for International
Peace. Bachelor of Arts, Creighton University,
1972; Juris Doctor, University of Pennsylvania,
1976 (1983)

Kenneth E. Filchak. Associate Professional
Specialist, Biological Sciences. Bachelor of
Science, Michigan State University, 1994;
Master of Science, Texas A & I University,
1996; Philosophiae Doctor, University of
Notre Dame, 2001 (2001)

John Mitchell Finnis. The Bielchini Family
Chair in Law; Professor, Law School. LLB - Law,
University of Adelaide, 1961; Philosophiae
Doctor, University College Oxford, 1965
(1995)

Jed Freeman Fisher. Professional Specialist,
Chemistry and Biochemistry. B.S. Chemistry,
SUNY at Stony Brook, 1972; Philosophiae
Doctor, Massachusets Institute of Tec, 1976
(2004)

John T. Fitzgerald. Professor, Theology. Bachelor of
Arts, Auburn University, 1970; Master of
Arts, Abilene Christian University A, 1972;
Master of Divinity, Yale University-Div School,
1975; Master of Arts, Yale University, 1979;
Master of Philosophy, ibid., 1981; Philosophiae
Doctor, ibid., 1984 (2012)

David Gary Flagel. Assistant Professional
Specialist, University of Notre Dame Environmental
Research Center; Concurrent Assistant Professional
Specialist, Biological Sciences. Bachelor of
Science, University of Wisconsin-Oshkosh,
2008; Philosophiae Doctor, University of

Mary Flannery. Professional Specialist,
Department of Economics. Bachelor of Arts,
University of Notre Dame, 1978; Master of
Arts, ibid., 1979; Philosophiae Doctor,
University of Maryland, 1996 (2012)

Thomas Patrick Flihn. Professor, Philosophy.
Bachelor of Arts, Saint Ambrose College,
1975; Philosophiae Doctor, University of

Patrick Joseph Flynn. Duda Family Chair in
Engineering; Professor, Computer Science and
Engineering; Concurrent Professor, Computer
Science and Engineering. Bach of Sci in Electrical
Eng, Michigan State University, 1985; Master of
Science, ibid., 1986; Philosophiae Doctor,
ibid., 1990 (2001)

Laura B. Flynn. Associate Professional Specialist,
First Year of Studies. Bachelor of Science, Saint
Mary's College, 1979; Master of Business
Admin, Indiana University South Bend, 1985
(2015)

Margaret Mary Forster. Professional Specialist,
Finance; Teaching Professor. B.S. Industrial
Engineering, University of Sao Paulo, 1982;
Master of Business Admin, Cornell University,
1985; Master of Science, ibid., 1987; Doctor of
Science, ibid., 1990 (2005)

James Kieran Foster, C.S.C. Associate
Professional Specialist, Preprofessional Studies; Larry
Baldinger Professorship. Bachelor of Science,
University of Notre Dame, 1977; Doctorate of
Medicine, University of Illinois Medical, 1981;
Master of Divinity, University of Notre Dame,
1994 (1997)

Christopher Fox. Professor, English; Fellow,
Nanovic Institute for European Studies; Director,
Keough Institute for Irish Studies. Bachelor of
Arts, Cleveland State University, 1971; Master of
Arts, State University of NY--Binghamton,
1974; Philosophiae Doctor, ibid., 1978 (1986)

Judith L. Fox. Professional Specialist, Clinical Law
Center; Clinical Professor, Law School. Bachelor of
Science, Wilkes College, 1985; Juris Doctor,
University of Notre Dame, 1993 (1997)

Jennifer Rager Fox. Associate Professional
Specialist, First Year of Studies. Bachelor of Arts,
Marquette University, 2003; Master of Arts,
Boston College, 2005 (2008)

Luis Ricardo Fraga. Arthur Foundation Professor
in Transformative Latino Leadership; The Joseph
and Elizabeth Rohrman Professor of Political Science;
Professor, Political Science; Co-Director, Institute
for Latino Studies. Bachelor of Arts, Harvard
College, 1978; Master of Arts, Rice University,
1981; Philosophiae Doctor, ibid., 1984 (2014)

Mary Elizabeth Frandsen. Associate Professor,
Music. Bachelor of Music, SUNY College at
Potsdam, 1980; Master of Arts, University of
Rochester, 1985; Philosophiae Doctor, ibid.,
1997 (1997)

Curtis Daniel Franks. Co-Director of Graduate
Studies, History and Philosophy of Science Program;
Associate Professor, Philosophy. Co-Director of
Graduate Studies, History and Philosophy of Science
Graduate Program. Bachelor of Mathematics,
Rice University, 2000; Philosophiae Doctor,

Malcolm J. Fraser. Rev. Julius A. Nieuweald,
C.S.C., Professor of Biological Sciences; Professor,
Biological Sciences. Bachelor of Science,
Wheeling College, 1975; Master of Science,
Ohio State University, 1979; Philosophiae

Stefan G. Fraundorf. Professor, Physics. Master of
Science, Technical University of Dresden,
1968; Philosophiae Doctor, ibid., 1971 (1998)

Stephen A. Freedman. Professor, English;
Concurrent Professor, American Studies. Bachelor of
Fine Arts, California Institute of Arts,
1971; Master of Arts, California State College
Sonom, 1976; Philosophiae Doctor, Stanford
University, 1980 (1980)

James L. Fuehrmeyer. Professional Specialist,
Accountancy; Faculty Director of the M.S. in
Accountancy program; Teaching Professor,
Accountancy. Bachelor of Science, U. S. Military
Academy, 1973; Master of Business Admin,
University of Chicago, 1980 (2007)

Agustin Fuentes. Professor, Anthropology; Fellow,
Joan B. Kroc Institute for International Peace.
Bachelor of Arts, University of California
Berkeley, 1989; Master of Arts, ibid., 1991;

Timothy S. Fuerst. William and Dorothy
O'Neill Chair in Economics; Endowed Professor,
Department of Economics. Bachelor of Science,
Ohio Northern University, 1985; Master of
Arts, University of Chicago, 1987;
Philosophiae Doctor, ibid., 1990 (2012)

Thomas E. Fuja. Professor, Electrical Engineering.
Bachelor of Science, University of Michigan,
1981; Master of Engineering, Cornell
University, 1983; Philosophiae Doctor, ibid.,
Jacek K. Furdyna. Aurora and Thomas Marquez Professor of Information Theory and Computer Technology; Professor, Physics. Bachelor of Science, Loyola University Chicago, 1955; Philosophiae Doctor, Northwestern University, 1960 (1986)


Kenneth Neil Garcia. Professional Specialist, College of Arts and Letters; Associate Director, Institute for Scholarship in the Liberal Arts. Bachelor of Arts, Old College School, 1983; Master of Arts, Catholic University of America, 1986; Master of Arts, ibid., 1997 (1996)

April Michelle Garcia. Assistant Professional Specialist, Institute for Educational Initiatives. Bachelor Degree - Unspecified, University of Notre Dame, 2005; Bachelor of Business Admin., ibid., 2005; Master Degree - Unspecified, ibid., 2007 (2015)

Anne Garcia-Romero. Thomas J. and Robert T. Rolfs Assistant Professor of Film, Television and Theatre; Fellow, Institute for Latino Studies; Assistant Professor, Film, Television, and Theatre. Bachelor of Arts, Occidental College, 1987; Master of Fine Arts, Yale University, 1995; Philosophiae Doctor, University of California Sta Barbara, 2009 (2010)

Umesh Garg. Professor, Physics. Bachelor of Science, Birla Institute of Technology and Science, 1970; Master of Science, SUNY at Stony Brook, 1975; Philosophiae Doctor, ibid., 1978 (1982)

Korey Gerard Garibaldi. Instructor, American Studies. Bachelor of Arts, University of Minnesota, 2009; Master of Arts, University of Chicago, 2010 (2016)

Peter M. Garvich. Professor, Physics. Bachelor of Science, University of Maryland, 1980; Master of Science, Massachusetts Institute of Tech, 1983; Philosophiae Doctor, University of Washington, 1991 (2000)

Nicole S. Garnett. John P. Murphy Foundation Professor of Law; Professor, Law School. Bachelor of Arts (Latin), Stanford University, 1992; Juris Doctor, Yale University, 1995 (1999)

Richard Garnett. Research Assistant Professor, Chemistry and Biochemistry. Bachelor of Science, University of Houston, 1989; Philosophiae Doctor, University of Washington, 2001 (2009)


David W. Gasperetti. Associate Professor, German and Russian Languages and Literature. Bachelor of Arts, Lawrence University, 1976; Master of Arts, UCLA, 1978; Philosophiae Doctor, ibid., 1985 (1989)

Liangyan Ge. Professor, East Asian Languages and Cultures; Acting Department Chair, East Asian Languages and Cultures. Bachelor of Arts, Hefei Polytechnic University, 1982; Master of Arts, Nanjing University, 1984; Philosophiae Doctor, Indiana Univ-Bloomington, 1995 (1995)


Frank Axel Gernmann. Assistant Professor, Marketing. Bachelor of Arts, Reutlingen University, 2001; Master of Business Admin, University of Notre Dame, 2005; Master Degree - Unspecified, Pennsylvania State University, 2012; Philosophiae Doctor, Pennsylvania St University, 2012 (2012)

Stephen E. Gersh. Professor, Medieval Institute; Concurrent Professor, Philosophy. Bachelor of Arts, University of Cambridge, 1969; Master of Arts, ibid., 1973 (1977)

Antoine Gervais. Assistant Professor, Department of Economics. Bachelor of Business Admin., Universite du Quebec/Montreal, 2003; Master of Arts, University of Toronto, 2004; Philosophiae Doctor, University of Maryland, 2009 (2010)


Lee Thomas Gettler. Assistant Professor, Anthropology. Bachelor of Arts, University of Notre Dame, 2005; Philosophiae Doctor, Northwestern University, 2012 (2007)


Nasir Ghiasieddin. Associate Professor, Management. Bachelor of Science, Arya-Mehr University of Technology; 1970; Master of Science, Purdue University, 1975; Philosophiae Doctor, ibid., 1982 (1982)
Faculty

Roya Ghiaseddin. Concurrent, Psychology; Associate Professional Specialist, AppliedComputational Mathematics & Statistics.
Bachelor of Science, Arya-Mehr University of Technology, 1978; Master of Science in Admin., University of Notre Dame, 1989; Master of Arts, ibid., 1991; Philosophiae Doctor, ibid., 1995 (2012)

Benedict F. Giamo. Associate Professor, American Studies.
Bachelor of Arts, Baldwin Wallace College, 1976; Master of Arts, The New School, 1978; Philosophiae Doctor, Emory University, 1987 (1990)

Chloe Rae Gibbs. Assistant Professor, Department of Economics.
Bachelor of Arts, University of Notre Dame, 2000; Master of Arts, University of Michigan, 2003; Master of Arts, University of Chicago, 2008; Philosophiae Doctor, ibid., 2012 (2015)

David Gibson. Associate Professor, Sociology; Fellow, Joan B. Kroc Institute for International Peace.
Bachelor of Arts, Eastern College, 1991; Master of Arts, Columbia University, 1994; Master of Philosophy, ibid., 1995; Philosophiae Doctor, ibid., 1999 (2013)

Bradley Stephen Gibson. Professor, Psychology.
Bachelor of Science, Colorado State University, 1982; Philosophiae Doctor, University of Arizona, 1992 (1994)

Timothy J. Gilbride. Associate Professor, Marketing; Notre Dame Chair in Marketing.
Bachelor of Business Admin., University of Dayton, 1988; Master of Business Admin, Ohio State University, 1993; Philosophiae Doctor, ibid., 2004 (2007)

Jeremiah Pius Gillan. Professor, Irish Language and Literature.
Bachelor of Arts, University College Dublin, 1976; Master of Arts, ibid., 1978; Philosophiae Doctor, National University of Ireland Dublin, 2006 (2008)

Robert Michael Gimello. Research Professor, Theology.
Bachelor of Arts, Seton Hall University, 1964; Master of Arts, ibid., 1965; Philosophiae Doctor, Columbia University, 1976 (2006)

Donna Marie Glowacki. Associate Professor, Anthropology.
Bachelor of Arts, Miami University, 1992; Master of Arts, University of Missouri-Columbia, 1995; Philosophiae Doctor, Arizona State University, 2006 (2007)

David Batten Go. Rooney Family Associate Professor of Engineering, aerospace and Mechanical Engineering.
Bachelor of Science, University of Notre Dame, 2001; Master of Science, University of Cincinnati, 2004; Philosophiae Doctor, Purdue University, 2008 (2008)

Joachim Goerres. Research Professor, Physics.
Bachelor of Science, University of Munster, 1974; Philosophiae Doctor, ibid., 1983 (1987)

Gary Goertz. Professor, Political Science.
Bachelor of Arts, Bethel College, 1976; Master of Science, University of Iowa, 1982; Philosophiae Doctor, University of Michigan, 1988 (2012)

Benjamin Golez. Assistant Professor, Finance.
Bachelor of Science, University of Ljubljana, 2005; Master of Science, Universitat Pompeu Fabra, 2006; Philosophiae Doctor, ibid., 2011 (2011)

Kenjiro Gomes. Assistant Professor, Physics.
Bachelor of Science, Pontificia Universidade Cath, 2001; Master of Science, ibid., 2002; Philosophiae Doctor, University of IL Urbana-Champaign, 2008 (2012)

Dawn M. Gondoli. Associate Professor, Psychology.
Bachelor of Arts, State University of NY-Buffalo, 1986; Master of Science, University of Arizona, 1991; Philosophiae Doctor, ibid., 1994 (1994)

DeeAnne M. Goodenough-Lashua. Associate Professional Specialist, Chemistry and Biochemistry; Teaching Professor.
Bachelor of Science, Valparaso University, 1994; Philosophiae Doctor, University of Michigan, 2001 (2001)

Victoria Elizabeth Goodrich. Associate Professional Specialist, College of Engineering; Associate Professor of the Practice.
Bach of Sci in Chemical Engr, University of Oklahoma-Norman, 2006; Master of Science, University of Notre Dame, 2009; Philosophiae Doctor, ibid., 2011 (2013)

Holly V. Goodson. Professor, Chemistry and Biochemistry; Concurrent Professor, Biological Sciences; Director, Integrated Biomedical Sciences.
Bachelor of Arts (Latin), Princeton University, 1988; Philosophiae Doctor, Stanford University, 1995 (2000)

John William Goodwine. Associate Professor, Aerospace and Mechanical Engineering.

Johannes Goransson. Assistant Professor, English.
Bachelor of Arts, University of Minnesota of Minneapolis, 1996; Master of Fine Arts, University of Iowa, 2000; Philosophiae Doctor, University of Georgia, 2008 (2007)

Stanislav Viktorovich Gordeyev. Research Associate Professor, Aerospace and Mechanical Engineering.
Bachelor of Science, Moscow Inst. Physics & Thec., 1991; Bachelor of Arts, Moscow Inst. of Physics & Tech, 1991; Philosophiae Doctor, University of Notre Dame, 1999 (1999)

Andrew Cleveland Gould.
Associate Professor, Political Science; Fellow, Kellogg Institute for International Studies; Fellow, Nanovic Institute for European Studies. Bachelor of Arts (Latin), Harvard University, 1985; Master of Arts, University of California Berkeley, 1986; Philosophiae Doctor, ibid., 1993 (1993)

Robert D. Goulding. Associate Professor, Program of Liberal Studies; Director, University Seminars; Concurrent Associate Professor, History; Fellow, Nanovic Institute for European Studies. Bachelor of Science, University of Canterbury, 1989; Bachelor of Arts, ibid., 1990; Master of Arts, The Warburg Institute, 1992; Philosophiae Doctor, ibid., 1999 (2003)

Daniel A. Graff. Professional Specialist, History; Director, Higgins Labor Studies Program.
Bachelor of Arts, University of IL Urbana-Champaign, 1990; Master of Arts, University of Wisconsin-Madison, 1993; Philosophiae Doctor, ibid., 2004 (2001)

Karen Graubart. Associate Professor, History; Concurrent Associate Professor, Romance Languages and literatures.
Bachelor of Arts, Barnard College, 1984; Philosophiae Doctor, University of Massachusetts, 2000 (2007)

Richard L. Gray. Associate Professor, Art, Art History, and Design; Department Chair, Art, Art History, and Design.

Barbara Jean Green. Associate Professor, English; Concurrent Associate Professor, Gender Studies.
Philosophiae Doctor, University of Virginia, 1991 (1991)

Stuart Greene. Associate Professor, English; Joint Appointment, African and African American Studies; Concurrent Associate Professor, University Writing Program.
Bachelor of Arts, State University of NY–Binghamton, 1978; Master of Arts, ibid., 1980; Philosophiae Doctor, Carnegie Mellon University, 1990 (1997)
Brad S. Gregory, Dorothy G. Griffin Collegiate Chair; Professor, History; Fellow, Nanovic Institute for European Studies; Editor, Archive of Reformation History; Bachelor of Arts, Universite Catholique De Louva, 1984; Bachelor of Science, Utah State University, 1985; Master of Arts, Catholic University of Louvain, 1987; Master of Arts, University of Arizona, 1989; Philosophiae Doctor, Princeton University, 1996 (2003)

Thomas A. Gresik. Professor, Department of Economics; Fellow, Nanovic Institute for European Studies. Bachelor of Arts, Northwestern University, 1981; Master of Science, California Institute of Techno, 1982; Philosophiae Doctor, Northwestern University, 1987 (2000)

John Paul Grieco. Research Associate Professor, Biological Sciences; Associate Director-Research, of the Eck Family Institute for Global Health. Bachelor of Science, University of Notre Dame, 1990; Master of Science, Texas A&M University, 1994; Philosophiae Doctor, Uniformed Services Health Sci., 2001 (2014)

Patrick N. Griffin. Madden Henneby Professor of History; Professor, History; Concurrent Professor, American Studies; Department Chair, History. Bachelor of Arts, University of Notre Dame, 1987; Master of Arts, Columbia University, 1991; Philosophiae Doctor, Northwestern University, 1999 (2008)

Daniel Gerard Groody, C.S.C. Associate Professor, Theology; Fellow, Kellogg Institute for International Studies; Fellow, Nanovic Institute for European Studies. Bachelor of Arts, University of Notre Dame, 1986; Master of Divinity, Jesuit School of Theology, 1992; Philosophiae Doctor, Graduate Theological Union, 2000; Licentiate in Sacred Theology, Jesuit School of Theology, 2001 (2000)


Kevin Gregory Grove, C.S.C. Assistant Professor, Theology. Bachelor of Arts, Seattle University, 2004; Master of Arts, University of Toronto, 2003; Master of Divinity, University of Notre Dame, 2009, Philosophiae Doctor, University of Cambridge, 2015 (2015)

Anastasia Guimaraes. Assistant Librarian, Hesburgh Libraries. Bachelor of Arts, Moscow State Linguistic University, 1993; Master in Library Science, Indiana-Purdue University Indpls, 2007 (1999)

Li Guo. Professor, Classics. Bachelor of Arts, Shanghai International Studies, 1979; Philosophiae Doctor, Yale University, 1994 (1999)

Ruilan Guo. Assistant Professor, Chemical and Biomolecular Engineering. Bachelor of Engineering, Beijing University of Tech., 1998; Master of Engineering, ibid., 2001; Philosophiae Doctor, Georgia Institute of Technolog, 2008 (2012)

Hong Guo. Associate Professor, Management. Bachelor of Engineering, Renmin University Beijing, 1999; Master of Engineering, ibid., 2002; Master of Science, University of Rochester, 2005; Philosophiae Doctor, University of Florida, 2009 (2009)


David Turco Gura. Concurrent Assistant Professor, Medieval Institute; Associate Librarian, Hesburgh Libraries. Bachelor of Arts, Ohio State University, 2003; Master of Arts, ibid., 2005; Philosophiae Doctor, ibid., 2010 (2010)

Perin Gurel. Assistant Professor, American Studies; Concurrent Assistant Professor, Gender Studies. Bachelor of Arts, University of California Berkeley, 2004; Master of Arts, Yale University, 2007; Master of Philosophy, ibid., 2008; Philosophiae Doctor, ibid., 2010 (2013)


Susan Kay Gursky. Assistant Professional Specialist, Preprofessional Studies. Bachelor of Science, University of Michigan, 1985; Master of Science, University of Southern California, 1991; Philosophiae Doctor, University of Chicago, 1998 (2009)


Sandra Marie Gustafson. Professor, English; Concurrent Professor, American Studies; Fellow, Joan B. Kroc Institute for International Peace; Editor, Early American Literature Journal. Bachelor of Arts, Cornell University, 1985; Philosophiae Doctor, University of California Berkeley, 1993 (1993)

Gustavo A. Gutierrez. John Cardinal O'Hara Professor of Theology; Professor, Theology. Licentiate in Sacred Theology, Universite Catholique de Lyon, 1959; Philosophiae Doctor, ibid., 1985 (2001)

Gregory Paul Haake. Assistant Professor, Romance Languages and Literatures; Fellow, Nanovic Institute for European Studies. Bachelor of Arts, University of Notre Dame, 1999; Master of Divinity, ibid., 2006; Master of Arts, Middlebury College, 2009; Philosophiae Doctor, Stanford University, 2015 (2015)

David S. Hachen. Associate Professor, Sociology. Bachelor of Arts, Lake Forest College, 1974; Master of Arts, University of Wisconsin-Madison, 1978; Philosophiae Doctor, ibid., 1983 (1987)

Gerald Haeffel. Associate Professor, Psychology. Bachelor of Arts (Latin), Lawrence University, 1997; Philosophiae Doctor, University of Wisconsin-Madison, 2005 (2006)


Alexander J. Hahn. Professor, Mathematics. Bachelor of Science, Loyola University New Orleans, 1965; Master of Science, University of Notre Dame, 1968; Philosophiae Doctor, ibid., 1970 (1972)

Azeb Haileselassie. Assistant Professional Specialist, Romance Languages and Literatures. Associate in Arts, University Paul Valery, 1992; Bachelor of Arts, University of Toulouse II, 1994; Master of Arts, ibid., 1998; Master of Arts, Indiana Univ-Bloomington, 2008; Philosophiae Doctor, University of II. Urbana-Champaign, 2015 (2016)

Kasturi Haldar. The Rev. Julius A. Nieuwland, C.S.C., Professor of Biological Sciences; Professor, Biological Sciences; James C. Parsons and Carrie Ann Quinn Director of the Center for Rare and Neglected Diseases. Bachelor of Arts, Bryn Mawr College, 1978; Philosophiae Doctor, Massachusetts Institute of Tec, 1982 (2008)

Douglas Carleton Hall. Associate Professor, Electrical Engineering. Bachelor of Science, Miami University, 1985; Master of Science, University of II. Urbana-Champaign, 1988; Philosophiae Doctor, ibid., 1991 (1994)

Brian C. Hall. Professor, Mathematics. B.S. Engineering Physics, Cornell University, 1988; Bachelor of Arts, ibid., 1988; Philosophiae Doctor, ibid., 1993 (1999)
Matthew Eric Kane Hall. Concurrent Associate Professor, Law School; Associate Professor, Political Science. Bachelor of Science, Northwestern Univ. - Chicago, 2005; Master of Arts, Yale University, 2007; Master of Philosophy, ibid., 2008; Philosophiae Doctor, ibid., 2009 (2013)


Marie Diane-Kateri Halvorsen-Ganepola. Concurrent Assistant Professional Specialist, First Year of Studies; Assistant Professional Specialist, Management; Assistant Teaching Professor. Bachelor of Arts, University of Kansas, 1999; B.S. Biology, ibid., 2003; Master of Business Admin, University of Notre Dame, 2007 (2013)

Jennifer Lynn Hames. Assistant Professional Specialist, Psychology. Bachelor Degree - Unspecified, University of Notre Dame, 2009; Doctor of Philosophy, Florida State University, ; Master of Science, ibid., (2016)

Alan Hamlet. Concurrent, Biological Sciences; Assistant Professor, Civil & Environmental Engineering & Earth Sciences. Bachelor of Arts, University of Rochester, 1981; Bachelor of Science, University of Washington, 1992; M.S. Engineering, ibid., 1996; Philosophiae Doctor, ibid., 2006 (2013)

Christopher Stone Hamlin. Professor, History. Fellow, Nanovic Institute for European Studies, Bachelor of Arts, Antioch University, 1974; Master of Arts, University of Wisconsin-Madison, 1977; Philosophiae Doctor, ibid., 1982 (1985)

Qing Han. Professor, Mathematics. Bachelor of Science, Beijing University, 1986; Master of Science, New York University, 1991; Philosophiae Doctor, ibid., 1993 (1994)

Noriako Hanabusa. Professional Specialist, East Asian Languages and Cultures; Professor of the Practice. Bachelor of Arts, Keio University, 1988; Master of Arts, University of Wisconsin-Madison, 1994 (1994)

Sean Michael Handley. Associate Professor, Management. Bachelor of Science, University of Cincinnati, 1999; Master of Business Admin, Ohio State University, 2002; Philosophiae Doctor, ibid., 2008 (2012)

Lin Hao. Assistant Professor, Management. Bachelor of Science, Tsinghua University, 2005; Master of Science, ibid., 2007; Master of Science, University of Washington, 2010; Philosophiae Doctor, ibid., 2012 (2012)

Jeffrey Joseph Harden. Assistant Professor, Political Science. Bachelor of Arts, University of IL Urbana-Champaign, 2007; Master of Arts, UNC at Chapel Hill, 2009; Doctor of Philosophy, ibid., 2012 (2016)

Chad Harms. Associate Professional Specialist, Management; Associate Teaching Professor. Bachelor of Arts, Iowa State University, 1995; Master of Arts, Michigan State University, 2000; Philosophiae Doctor, ibid., 2004 (2010)

Susan Cannon Harris. Associate Professor, English; Concurrent Associate Professor, Gender Studies. Bachelor of Arts, Yale University, 1991; Master of Arts, UNC at Chapel Hill, 1993; Philosophiae Doctor, University of Texas-Austin, 1998 (1998)

Bruce A. Harris. Assistant Professional Specialist, Management; Assistant Teaching Professor. Bachelor of Arts, University California Irvine, 1976; Master of Science in Admin., ibid., 1978 (1998)


David Bawden Hartvigsen. Professor, Management; Concurrent Professor, Applied Computational Mathematics & Statistics. Bachelor of Arts, Colgate University, 1979; Master of Science, Carnegie Mellon University, 1980; Philosophiae Doctor, ibid., 1984 (1993)


Mandy Lynn Havert. Assistant Librarian, Hesburgh Libraries. Bachelor of Arts, Ball State University, 1996; Master of Library & Info Sci, Indiana-Purdue University Indpls, 2007 (2008)

Stephen M. Hayes. Librarian, Hesburgh Libraries. Bachelor of Science, Michigan State University, 1972; Master in Library Science, Western Michigan University, 1974; Master of Science in Admin., University of Notre Dame, 1979 (1974)


Barbara J. Hellenthal. Associate Professional Specialist, Biological Sciences; Curator of Museum of Biodiversity & Greene-Nieuwland Herbarium. Bachelor of Science, University of Minnesota, 1974 (1980)

Ben A. Heller. Associate Professor, Romance Languages and Literatures. Bachelor of Arts, University of Pennsylvania, 1981; Philosophiae Doctor, Washington University, 1990; Master of Arts, ibid., 1990 (2000)

Paul Helquist. Professor, Chemistry and Biochemistry. Bachelor of Arts, University of Minnesota at Dul, 1969; Master of Science, Cornell University, 1971; Philosophiae Doctor, ibid., 1972 (1984)

Michael Lee Hemler. Associate Professor, Finance. Bachelor of Science, University of Dayton, 1974; Philosophiae Doctor, Washington University, 1980; Master of Business Admin, University of Chicago, 1985; Philosophiae Doctor, ibid., 1988 (1992)

Douglass Robert Hemphill. Assistant Professional Specialist, Management. Bachelor of Arts, Bucknell University, 1966; Master of Arts, University of Notre Dame, 1980 (1991)

David Ray Hernandez. Concurrent Assistant Professor, Anthropology; Assistant Professor, Classics. Bachelor of Arts, University of California Berkeley, 1996; Master of Arts, University of Cincinnati, 2004; Philosophiae Doctor, ibid., 2010 (2009)


Jason C. Hicks. Associate Professor, Chemical and Biomolecular Engineering. Bachelor of Science, Kentucky Wesleyan College, 2001; Bachelor of Engineering, Vanderbilt University, 2003; Philosophiae Doctor, Georgia Institute of Technol, 2007 (2010)

Michael Douglas Hildreth. Professor, Physics; Associate Dean for Research and Graduate Studies, College of Science. Bachelor of Arts (Latin), Princeton University, 1988; Philosophiae Doctor, Stanford University, 1995 (2000)
M. Catherine Hilbert, OP. Professor, Theology. Bachelor of Arts, University of Dayton, 1971; Master of Arts, Catholic University of America, 1979; Philosophiae Doctor, ibid., 1984 (1995)

David A. Hill. Associate Professor, Chemical and Biomolecular Engineering. M.S. Chemical Engineering, University of Naples, 1983; Philosophiae Doctor, University of California Berkeley, 1989 (1990)

Reginald Hill. The Archibald Assistant Professor of Cancer Biology. Assistant Professor, Biological Sciences. Bachelor of Science, Florida Agricultural-Mechanica, 1998; Philosophiae Doctor, UNC at Chapel Hill, 2005 (2012)

Richard K. Hind. Professor, Mathematics; Associate Chair, Mathematics. Bachelor of Arts, University of Cambridge, 1993; Philosophiae Doctor, Stanford University, 1997 (2000)

Amy E. Hixon. Assistant Professor, Civil & Environmental Engineering & Earth Sciences. Bachelor of Science, Radford University, 2006; Master of Science, Clemson University, 2008; Philosophiae Doctor, ibid., 2013 (2013)

Daniel Bruce Hobbs. Associate Professor, History. Bachelor of Science, Pensacola Christian College, 1989; Master of Arts, Bowling Green State University, 1995; Master of Medieval Studies, University of Notre Dame, 1997; Philosophiae Doctor, ibid., 2002 (2012)

Bertrand M. Hochwald. Professor, Electrical Engineering; The Frank M. Freimann Professor of Electrical Engineering. Bachelor of Science, Swarthmore College, 1984; Master of Science, Duke University, 1986; Master of Arts, Yale University, 1993; Philosophiae Doctor, ibid., 1995 (2011)

Michel Hockx. Professor, East Asian Languages and Cultures; Director, Institute for Asia & Asian Studies. Master Degree - Unspecified, Universiteit Leiden, 1987; Philosophiae Doctor, ibid., 1994 (2016)

Michael Thomas Hoffman. Instructor, Political Science. Bachelor of Arts, University of Notre Dame, 2010; Master of Arts, Princeton University, 2012 (2016)

Anthony James Hoffman. Assistant Professor, Electrical Engineering. Bachelor of Science, University of Maryland Baltimore Cou, 2004; M.S. Engineering, Princeton University, 2006; Philosophiae Doctor, ibid., 2009 (2012)

John Mark Hofman. Assistant Professor, Air Science. Bachelor of Science, Wright State University, 2006; Master of Arts, University of Oklahoma, 2010 (2014)

Peter D. Holland. McMeel Professor of Shakespeare Studies; Professor, Film, Television, and Theatre; Associate Dean for the Arts, College of Arts and Letters; Concurrent Professor, English. Bachelor of Arts, Trinity Hall Cambridge, 1972; Philosophiae Doctor, ibid., 1977; Philosophiae Doctor, ibid., 1977 (2002)

Gary Edward Hollibaugh. Assistant Professor, Political Science. Bachelor of Arts, Univ. of California-San Diego, 2006; Master of Arts, University of Rochester, 2010; Philosophiae Doctor, ibid., 2012 (2014)

Laura Louise Hollis. Associate Professional Specialist, Accountancy; Associate Teaching Professor. Bachelor of Arts, University of Notre Dame, 1983; Juris Doctor, ibid., 1986 (2010)


Vittorio G. Hosle. Paul G. Kimball Professor of Arts and Letters; Professor, German and Russian Languages and Literature; Concurrent Professor, Philosophy; Fellow, Joan B. Kroc Institute for International Peace. Philosophiae Doctor, Eberhard Karl University of Tubingen, 1982 (1999)

Don A. Howard. Professor, Philosophy. Bachelor of Science, Michigan State University, 1971; Master of Arts, Boston University, 1973; Philosophiae Doctor, ibid., 1979 (1997)

Scott Sheridan Howard. Assistant Professor, Electrical Engineering. Bachelor of Science, University of Notre Dame, 2003; Philosophiae Doctor, Princeton University, 2008 (2011)


Xiaobo Hu. Professor, Computer Science and Engineering; Concurrent Professor, Electrical Engineering. Bachelor of Science, Tianjin University, 1982; Master of Science, Polytechnic Institute of New Y, 1984; Philosophiae Doctor, Purdue University, 1989 (1996)

Bei Hu. Associate Chair, Applied Computational Mathematics & Statistics; Professor, Applied Computational Mathematics & Statistics. Bachelor of Science, East China Normal University, 1982; Master of Science, ibid., 1984; Master of Science, University of Minnesota, 1989; Philosophiae Doctor, ibid., 1990 (1990)

Jia Hu. Assistant Professor, Management. Bachelor of Arts, Central University of Finance & Econ, 2005; Master of Arts, Renmin University Beijing, 2007; Philosophiae Doctor, University of Illinois-Chicago, 2012 (2012)

Yib-Fang Huang. Professor, Electrical Engineering; Senior Associate Dean for Education and Undergraduate Programs, College of Engineering. Bach of Sci in Electrical Engr, National Taiwan University, 1976; Master of Science, University of Notre Dame, 1979; Philosophiae Doctor, Princeton University, 1982 (1982)


Roger D. Huang. Martin J. Gillen Dean of the Mendoza College of Business; Dean, Mendoza College of Business; Kenneth R. Meyer Professor of Global Investment Management; Professor, Finance. Bachelor of Science, Purdue University, 1975; Master of Arts, University of Pennsylvania, 1978; Philosophiae Doctor, ibid., 1980 (2000)

Paul W. Huber. Professor, Chemistry and Biochemistry. Bachelor of Science, Boston College, 1973; Philosophiae Doctor, Purdue University, 1978 (1985)

Bruce Robert Huber. Associate Professor, Law School. Bachelor of Arts, Stanford University, 1996; Juris Doctor, University of California Berkeley, 2000; Master of Arts, ibid., 2006; Philosophiae Doctor, ibid., 2010 (2011)

Alan Huebner. Assistant Professional Specialist, Applied Computational Mathematics & Statistics. Bachelor of Arts, Concordia University, 2001; Master of Science, DePaul University, 2003; Philosophiae Doctor, University of II. Urbana-Champaign, 2008 (2011)

Victoria Tin-bor Hui. Associate Professor, Political Science; Fellow, Kellogg Institute for International Studies. Bachelor of Social Science, Chinese University of Hong Kon, 1990; Master of Arts, Columbia University, 1995; Master of Philosophy, ibid., 1997; Philosophiae Doctor, ibid., 2000 (2004)
Faculty

Romana Christina Huk. Associate Professor, English; Editor, Religion and Literature Journal. Bachelor of Arts, Coll of William & Mary, 1981; Master of Arts, University of Notre Dame, 1984; Philosophiae Doctor, ibid., 1987 (2002)

Amanda Beth Hummon. Huisking Foundation, Inc. Assistant Professor of Chemistry and Biochemistry; Associate Professor, Chemistry and Biochemistry. Bachelor of Arts (Latin), Cornell University, 1999; Philosophiae Doctor, University of IL Urbana-Champaign, 2004 (2009)

Edward Francis Hums. Professional Specialist, Accountancy; Teaching Professor. Bachelor of Business Admin., University of Notre Dame, 1975; Master of Science, Indiana University South Bend, 1979; Master of Business Admin, ibid., 1989 (1975)

Daniel Michael Hungerman. Associate Professor, Department of Economics. Bachelor of Arts, Miami University, 2000; Philosophiae Doctor, Duke University, 2005 (2005)

Charlice Glen Hurst. Assistant Professor, Management. Bachelor of Arts, Harvard College, 1994; M International Bus Admin, University of South Carolina, 2004; Philosophiae Doctor, University of Florida, 2010 (2014)

David E. Hutchison. Associate Professional Specialist, Finance; Associate Teaching Professor. Bachelor of Arts, Illinois Wesleyan University, 1981; Master of Science, University of IL Urbana-Champaign, 1985; Philosophiae Doctor, ibid., 1993 (2008)

Huy Huynh. Assistant Professional Specialist, Applied Computational Mathematics & Statistics; Assistant Professor of the Practice, Applied Computational Mathematics & Statistics. Associate in Science, Georgia Perimeter College, 2004; Bachelor of Science, Kennesaw State University, 2006; Master of Science, Georgia Institute of Technol, 2009; Philosophiae Doctor, ibid., 2012 (2012)

David R. Hyde. The Rev. Howard J. Kenna, C.S.C., Memorial Director of the Zebrafish Research Center; Professor, Biological Sciences. Bachelor of Science, Michigan State University, 1980; Philosophiae Doctor, Pennsylvania State University, 1985 (1988)


Vlad Mihai Iluc. Assistant Professor, Chemistry and Biochemistry. Bachelor of Science, Univ. of Politehnica-Bucharest, 2000; Master of Science, University of Illinois-Chicago, 2003; Philosophiae Doctor, ibid., 2009 (2011)

Seong-kyun Im. Assistant Professor, Aerospace and Mechanical Engineering. Bach of Sci in Aerospace Engr, Seoul National University, 2007; Master in Mechanical Engr, Stanford University, 2009; Philosophiae Doctor, ibid., 2013 (2016)

Andrew John Imdieke. Assistant Professor, Accountancy. Bachelor of Arts, Hope College, 2003; Master of Business Admin, Michigan State University, 2011; Doctor of Philosophy, ibid., 2016 (2016)

Z’etoile Imma. Assistant Professor, English; Concurrent Assistant Professor, Gender Studies. Bachelor of Arts, CUNY College of Staten Island, 2004; Philosophiae Doctor, University of Virginia, 2012 (2012)

Lakshmi Iyer. Associate Professor, Department of Economics. Bachelor Degree - Unspecified, Indian Statistical Institute, 1995; Master Degree - Unspecified, ibid., 1997; Philosophiae Doctor, Massachusetts Institute of Tec, 2003 (2016)

Jesus Antonio Izaguirre. Associate Professor, Computer Science and Engineering. Bachelor of Science, University of Monterrey, 1991; Master of Science, University of IL Urbana-Champaign, 1996; Philosophiae Doctor, ibid., 1999 (1999)

Ankita Jain. Assistant Professional Specialist, Applied Computational Mathematics & Statistics; Assistant Professor of the Practice, Applied Computational Mathematics & Statistics. Bachelor of Mathematics, University of Delhi, 2006; M.S. Mathematics, University of Houston, 2009; Philosophiae Doctor, ibid., 2012 (2012)

Monica Nicole Jancha. Assistant Professional Specialist, Romance Languages and Literatures; Assistant Professor of the Practice, Romance Languages and Literature. Bachelor of Arts, University of Notre Dame, 2006; Master of Arts, ibid., 2007 (2010)

Ireneusz Janik. Research Assistant Professor, Radiation Laboratory. Master of Science, University of Lodz, 1995; Philosophiae Doctor, Technical University of Lodz, 2001 (2004)


Katie Lynn Jarvis. Assistant Professor, History. Bachelor of Arts, Boston College, 2007; Doctor of Philosophy, University of Wisconsin-Madison, 2014 (2016)

Carlos Alberto Jauregui. Director of Graduate Studies, Romance Languages and Literatures; Associate Professor, Romance Languages and Literatures; Concurrent Associate Professor, Anthropology; Director of Graduate Studies, Department of Romance Languages and Literatures. Bachelor of Laws, National University of Colmbi, 1993; Master of Arts, West Virginia University, 1997; Philosophiae Doctor, University of Pittsburgh, 2001; Certificate Program, ibid., (2011)

Debra Javeline. Associate Professor, Political Science; Fellow, Joan B. Kroc Institute for International Peace. Bachelor of Arts (Latin), Brown University, 1989; Philosophiae Doctor, Harvard University, 1997 (2004)

Pascal Jean-Pierre. Research Associate Professor, Psychology. Bachelor of Arts, Brooklyn College, 1999; Master of Arts, University of Rhode Island, 2003; Philosophiae Doctor, ibid., 2005; Master of Public Health, University of Rochester, 2009 (2012)

Alexander Jech. Assistant Professional Specialist, Philosophy; Assistant Professor of the Practice. Bachelor of Arts, University of Washington, 2002; Master of Arts, University of Notre Dame, 2007; Philosophiae Doctor, ibid., 2009 (2014)

Peter Grant Jeffery. Michael P. Grace Professor of Medieval Studies; Professor, Music; Concurrent Professor, Anthropology; Concurrent Professor, Theology; Fellow, Novacek Institute for European Studies. Bachelor of Arts, Brooklyn College, 1975; Philosophiae Doctor, Princeton University, 1980 (2009)


John Ignatius Jenkins, C.S.C. President; Professor, Philosophy. Bachelor of Arts, University of Notre Dame, 1976; Master of Arts, ibid., 1978; Bachelor of Philosophy, University of Oxford, 1987; Master of Divinity, Jesuit School of Theology, 1988; Licentiate in Sacred Theology, ibid., 1988; Philosophiae Doctor, University of Oxford, 1989 (1990)
Richard A. Jensen. Gilbert Schaeffer Chair in Economics; Professor, Department of Economics. Bachelor of Arts, University of Kansas, 1971; Philosophiae Doctor, Northwestern University, 1980 (2000)

Lionel M. Jensen. Associate Professor, East Asian Languages and Cultures; Concurrent Associate Professor, History; Fellow, Joan B. Kroc Institute for International Peace. Bachelor of Arts, Williams College, 1976; Master of Arts, Washington University, 1980; Philosophiae Doctor, University of California Berkeley, 1992 (2000)

Robin Jensen. Patrick O’Brien Professor of Theology; Professor, Theology; Fellow, Nanovic Institute for European Studies; Concurrent Professor, Art, Art History, and Design. Bachelor of Arts, Concordia College at Moorhead, 1973; Master of Arts, Columbia University, 1977; Philosophiae Doctor, ibid., 1986 (2015)

Michael James Jenuwine. Professional Specialist, Clinical Law Center; Clinical Professor, Clinical Law Center. Bachelor of Science, University of Michigan, 1988; Master of Arts, University of Chicago, 1990; Juris Doctor, Loyola University Chicago, 2000 (2005)


Kaifeng Jiang. Assistant Professor, Management. Bachelor of Arts, Renmin University Beijing, 2005; Master of Arts, ibid., 2007; Philosophiae Doctor, Rutgers State University of NJ, 2013 (2013)


Ick Hoon Jin. Assistant Professor. Bachelor of Science, Yonsei University, 2004; Master of Science, ibid., 2006; Philosophiae Doctor, Texas A&M University, 2011 (2015)

Maxwell Edwin Johnson. Professor, Theology. Bachelor of Arts, Augustana College, 1974; Master of Divinity, Wartburg Theological Seminary, 1978; Master of Arts, Saint John’s University, 1982; Master of Arts, University of Notre Dame, 1989; Philosophiae Doctor, ibid., 1992 (1997)

Reid Johnson. Research Assistant Professor, Computer Science and Engineering. Bachelor Degree - Unspecified, Univ. of Illinois -Springfield, 2009; Philosophiae Doctor, University of Notre Dame, 2016 (2016)

Mark Thomas Johnson. Assistant Professional Specialist, Institute for Educational Initiatives. Bachelor Degree - Unspecified, Carroll College; Master of Arts, Northeastern University, 1995; Master of Arts, University of Wisconsin, 2003; Philosophiae Doctor, ibid., 2008 (2010)

Daniel Jonas Johnson. English Literature/ Digital Humanities Librarian. Bachelor Degree - Unspecified, Bethany Lutheran College Inc, 2006; Bachelor of Arts, ibid., 2006; Master Degree - Unspecified, Wake Forest University, 2008 (2015)

Terence Robert Johnson. Joe and Deborah Laughery Assistant Professor of Economics and Human Development; Fellow, Kellogg Institute for International Studies; Assistant Professor, Department of Economics. Bachelor of Arts, Syracuse University, 2006; Philosophiae Doctor, University of Maryland, 2011 (2011)

Cyraina Evelene Johnson-Roullett. Associate Professor, English; Concurrent Associate Professor, American Studies; Concurrent Associate Professor, Gender Studies. Bachelor of Science, Ohio University, 1982; Master of Arts, Ohio State University, 1985; Master of Arts, State University of NY at Albany, 1980; Philosophiae Doctor, State University of NY-Buffalo, 1992 (1991)


Mackenzie Regan Jones. Assistant Professor, Naval Science; Concurrent Assistant Professor, First Year of Studies. Bachelor of Arts, SUNY at Albany, 2002; Master of Business Admin, Florida State University, 2010 (2014)

Jennifer Ann Meri Jones. Assistant Professor, Sociology. Bachelor of Arts, Pomona College, 2003; Master of Arts, University of California Berkeley, 2006; Philosophiae Doctor, ibid., 2011 (2013)

Claire Taylor Jones. Assistant Professor, German and Russian Languages and Literature; Fellow, Nanovic Institute for European Studies. Bachelor of Arts, Mount Holyoke College, 2005; Master of Arts, Dartmouth College, 2006; Master of Arts, University of Pennsylvania, 2008; Philosophiae Doctor, ibid., 2012 (2012)

Stuart Jones. Associate Professor, Biological Sciences. Bachelor of Science, University of Wisconsin Center, 2003; Philosophiae Doctor, ibid., 2008 (2010)

Mary Frances Jones. Assistant Professional Specialist, Institute for Educational Initiatives; Assistant Clinical Professor, Institute for Educational Initiatives. Bachelor of Arts, University of Notre Dame, 2004; Master of Arts Education, ibid., 2006 (2015)


Diana Jorza. Assistant Professor, Romance Languages and Literatures; Fellow, Nanovic Institute for European Studies. Bachelor of Arts, Babes Bolyai University, 2000; Master of Arts, ibid., 2002; Master of Arts, Johns Hopkins University, 2006; Philosophiae Doctor, Princeton University, 2013 (2012)

Andrei Jorza. Assistant Professor, Mathematics. Bachelor of Arts, Harvard University, 2005; Philosophiae Doctor, Princeton University, 2010 (2013)

Madhav Raj Joshi. Research Assistant Professor, Joan B. Kroc Institute for International Peace. Master of Arts, Tribhuvan University, 2001; Philosophiae Doctor, University of North Texas, 2010 (2010)


Anthony Juan. Professor, Film, Television, and Theatre; Fellow, Kellogg Institute for International Studies; Fellow, Nanovic Institute for European Studies. Philosophiae Doctor, University of Athens, 1990 (2005)

Timothy Judge. Franklin D. Schurz Professor of Management; Professor, Management; Associate Dean for Faculty and Research, Mendoza College of Business; Concurrent Professor, Psychology. Bachelor of Business Admin., University of Iowa, 1985; Master of Business Admin, University of IL Urbana-Champaign, 1988; Philosophiae Doctor, ibid., 1990 (2010)


Thomas Juliano. Assistant Professor, Aerospace and Mechanical Engineering. Bach of Sci in Aerospace Engr, California Institute of Techno, 2004; Master of Science, Purdue University, 2006; Philosophiae Doctor, ibid., 2010 (2014)

Eric John Juniper. Roth-Gibson Professor of Aerospace and Mechanical Engineering; Professor, Aerospace and Mechanical Engineering. Bachelor of Science, University of New Mexico Main, 1968; Master of Science, University Wyoming, 1969; Philosophiae Doctor, Air Force Institute Technology, 1975 (1989)

Joseph Paul Kaboski. The David F. and Erin M. Seng Foundation Professor of Economics; Professor, Department of Economics; Fellow, Kellogg Institute for International Studies. Bach of Sci in Chemical Eng, Cornell University, 1994; Master of Arts, University of Chicago, 1998; Philosophiae Doctor, ibid., 2001 (2010)

Juhi Kaboski. Research Assistant Professor, Psychology. Bachelor of Arts, University of IL Urbana-Champaign, 1995; Master of Social Work, ibid., 1999; Philosophiae Doctor, University of Chicago, 2012 (2013)


Prashant V. Kamat. Rev. John A. Zahm Professor of Science; Professor, Chemistry and Biochemistry. Bachelor of Science, Karnataka University, 1972; Master of Science, University of Bombay, 1974; Philosophiae Doctor, ibid., 1979 (1983)

S. Alex Kandel. Associate Professor, Chemistry and Biochemistry. Bachelor of Science, Yale University, 1993; Philosophiae Doctor, Harvard University, 1999 (2001)

Hana Kang. Associate Professional Specialist, East Asian Languages and Cultures; Associate Professor of the Practice, East Asian Languages and Cultures. Bachelor of Arts, Rutgers State University of NJ, 2001; Master of Arts, Ohio State University, 2004; Philosophiae Doctor, ibid., 2011 (2014)

Jeffrey C. Kantor. Professor, Chemical and Biomolecular Engineering. Bachelor of Science, University of Minnesota of Minneapolis, 1976; Master of Arts, Princeton University, 1977; Philosophiae Doctor, ibid., 1981 (1981)

Joshua B. Kaplan. Associate Professional Specialist, Political Science; Director of Undergraduate Studies. Bachelor of Arts (Latin), University California Santa Cruz, 1974; Master of Arts, University of Chicago, 1977 (1987)

Joseph Karbowski. Assistant Professor, Philosophy. Bachelor of Arts, University of Pittsburgh, 2003; Philosophiae Doctor, University of California Berkeley, 2009 (2009)

Ahsan Kareem. The Robert M. Manan Professor of Civil Engineering; Professor, Civil & Environmental Engineering & Earth Sciences. Bachelor of Science, W Pakistan U of Engr and Tech, 1968; Master of Science, University Hawaii Honolulu, 1975; Philosophiae Doctor, Colorado State University, 1978 (1990)

Daniel J. Karmgard. Research Assistant Professor, Physics. Associate in Science, El Camino College, 1991; Bachelor of Science, UCLA, 1993; Master of Science, California State U-Long Beach, 1995; Philosophiae Doctor, Florida State University, 1999 (1999)

Michelle Ann Karnes. Associate Professor, English. Doctor of Philosophy, University of Pennsylvania, ; Bachelor of Arts, University of California Berkeley, ; Master of Arts, University of Pennsylvania, (2016)


Mary Celeste Kearney. Associate Professor, Film, Television, and Theatre; Concurrent Associate Professor, American Studies; Concurrent Associate Professor, Gender Studies; Director, Gender Studies Program. Bachelor of Arts, University of San Diego, 1984; Master of Arts, Georgetown University, 1992; Philosophiae Doctor, University of Southern California, 1998 (2013)

Barry Patrick Keating. Professor, Finance. Bachelor of Business Admin., University of Notre Dame, 1967; Master of Arts, Lehigh University, 1968; Philosophiae Doctor, University of Notre Dame, 1974 (1978)


Kenneth Kelley. Professor, Management; Concurrent Professor, Psychology; Associate Dean, Mendoza College of Business. Bachelor of Arts, University of Cincinnati, 2000; Master of Arts, University of Notre Dame, 2003; Philosophiae Doctor, ibid., 2005 (2008)

Anita Elena Kelly. Professor, Psychology. Bachelor of Arts, Northwestern University, 1986; Master of Science, University of Florida, 1988; Philosophiae Doctor, ibid., 1991 (1994)


Peter Wiest Kelly. Assistant Professor, Finance. Bachelor of Science, University of Notre Dame, 2009; Master of Accountancy, Yale University, 2012; Master of Philosophy, ibid., 2012; Philosophiae Doctor, ibid., 2015 (2015)

Daniel Bruce Kelly. Professor, Law School. Bachelor of Arts, University of Notre Dame, 2002; Juris Doctor, Harvard University, 2005 (2009)

Sean Kelsey. Associate Professor, Philosophy. Bachelor of Arts, Thomas Aquinas College, 1992; Philosophiae Doctor, Princeton University, 1997 (2009)
Andrew Brian Kennedy. Associate Professor, Civil & Environmental Engineering & Earth Sciences; Concurrent Associate Professor, Aerospace and Mechanical Engineering. Bachelor of Science, Queen’s University, 1991; Master of Science, Univ. of British Columbia, 1993; Philosophiae Doctor, Monash University, 1998 (2008)


Elizabeth Ann Kerr. Assistant Professional Specialist, Civil & Environmental Engineering & Earth Sciences. Bachelor of Science, University of Evansville, 2003; Master of Science, University of Notre Dame, 2007; Philosophiae Doctor, ibid., 2008 (2009)

Mary Martha Keys. Associate Professor, Political Science; Acting Director, Interdisciplinary minor, Philosophy, Politics, and Economics. Bachelor of Arts, Boston College, 1988; Master of Arts, University of Toronto, 1989; Philosophiae Doctor, ibid., 1998 (1994)

Kapil Khandelwal. Associate Professor, Civil & Environmental Engineering & Earth Sciences. Master of Arts, Indian Inst of Tech-Delhi, 2000; Philosophiae Doctor, University of Michigan, 2008 (2008)

Declan Kiberd. Donald and Marilyn Keough Professor of Irish Studies; Professor, English; Concurrent Professor, Irish Language and Literature. Philosophiae Doctor, University of Oxford, 1977 (2011)

Tracy Lynn Kijewski-Correa. Leo E. and Patti Ruth Linbeck Professor of Engineering; Associate Professor, Civil Eng & Envr & Earth Sciences. Bach of Sci in Civil Engr, University of Notre Dame, 1997; M.S. Civil Eng, ibid., 2000; Philosophiae Doctor, ibid., 2003 (2003)

Micha A. Kiburn. Assistant Professional Specialist, Physics. B.S. Physics, Northern Michigan University, 2004; Master of Science, Michigan State University, 2006; Philosophiae Doctor, ibid., 2011 (2011)

Peter K. Kilpatrick. Matthew H. McCluskey Dean of the College of Engineering; Dean, College of Engineering; Professor, Chemical and Biomolecular Engineering. Bachelor of Arts, Occidental College, 1978; Philosophiae Doctor, University of Minnesota, 1983 (2008)

Tae Hyun Kim. Assistant Professor, Finance. Bachelor of Arts, Yonsei University, 2007; Master of Arts, ibid., 2009; Philosophiae Doctor, University of IL Urbana-Champaign, 2015 (2015)


Kenneth Joseph Kinslow. Assistant Librarian, Hobbsburg Libraries. Bachelor of Arts, St. Joseph’s University, 1968; Philosophiae Doctor, University of Notre Dame, 1978; Master of Science, Indiana University, 1992 (1985)


Tanyel Kiziltepe Bilgicer. Assistant Professional Specialist, Chemical and Biomolecular Engineering. Bachelor of Science, Bilkent University, 1998; Philosophiae Doctor, Massachusetts Institute of Tec, 2005 (2008)

Michael Patrick Kitz. Assistant Professional Specialist, College of Engineering. Bachelor of Arts, University of Notre Dame, 1985; Bachelor of Science, ibid., 1985; Master of Business Admin, University of Michigan, 1989 (2012)


Matthew Joseph Kloos. Concurrent, College of Science; Assistant Professional Specialist, Institute for Educational Initiatives. Bachelor of Arts, University of Notre Dame, 2002; Master of Education, ibid., 2004; Master of Science, Stanford University, 2010; Philosophiae Doctor, ibid., 2011 (2012)

Julia F. Knight. The Charles L. Huisking Professor of Mathematics; Professor, Mathematics. Bachelor of Arts, Utah State University, 1964; Philosophiae Doctor, University of California Berkeley, 1972 (1977)

Laura L. Knoppers. Professor, English. Bachelor of Arts, Calvin College, 1979; Master of Arts, Harvard University, 1981; Philosophiae Doctor, ibid., 1986 (2014)


Kole Kneuppel. Assistant Professional Specialist, Institute for Educational Initiatives; Director, Alliance for Catholic Education. Bachelor of Arts, Wisconsin Lutheran College, 1993; Master of Science, University Wisconsin Superior, 1995 (2015)

Karrie J. Koessel. Associate Professor, Political Science; Fellow, Nanovic Institute for European Studies; Fellow, Kellogg Institute for International Studies. Bachelor of Arts, Drake University, 1997; Master of Arts, University of Notre Dame, 2001; Master of Arts, Cornell University, 2005; Philosophiae Doctor, ibid., 2009 (2015)

Peter Michael Kogge. Ted H. McCourtney Professor of Computer Science and Engineering; Professor, Computer Science and Engineering. Bachelor of Science, University of Notre Dame, 1968; Master of Science, Syracuse University, 1970; Philosophiae Doctor, Stanford University, 1973 (1994)


Christopher F. Kolda. Professor, Physics; The Glynn Family Honors Collegiate Professor of Physics. Bachelor of Arts, Johns Hopkins University, 1990; Master of Arts, University of Michigan, 1992; Philosophiae Doctor, ibid., 1995 (2000)

Elisabeth Koll. William Payden Associate Professor of History; Associate Professor, History; Fellow, Kellogg Institute for International Studies. Bachelor of Arts, Fudan University, 1988; Master of Arts, University of Bonn, 1992; Philosophiae Doctor, University of Oxford, 1998 (2015)

Paul Vincent Kollman, C.S.C. Associate Professor, Theology; Fellow, Joan B. Kroc Institute for International Peace. Bachelor of Arts, University of Notre Dame, 1984; Master of Divinity, ibid., 1990; Philosophiae Doctor, University of Chicago, 2001 (2001)

Mary Ellen Konieczny. Concurrent, American Studies; Associate Professor, Sociology. Bachelor of Science, University of Notre Dame, 1981; Master of Divinity, Weston School of Theology, 1985; Philosophiae Doctor, University of Chicago, 2005 (2008)
Janet A. Kourany. Associate Professor, Philosophy; Concurrent Associate Professor, Gender Studies. Bachelor of Science, Columbia University, 1965; Philosophiae Doctor, ibid., 1977 (1998)

Monica Jane Kowalski. Assistant Professional Specialist, Alliance for Catholic Education. Bachelor of Arts, University of Notre Dame, 2003; Master of Education, ibid., 2005; Philosophiae Doctor, Ohio State University, 2013 (2012)


Brian Alexander Krostenko. Associate Professor, Classics; Director of the Gaska Program; Fellow, Nanovic Institute for European Studies; Department Chair, Classics. Bachelor of Arts, Princeton University, 1986; Master of Arts, Harvard University, 1989; Philosophiae Doctor, ibid., 1993 (2001)


Thomas A. Kselman. Professor, History, Fellow, Nanovic Institute for European Studies. Bachelor of Arts, St. Joseph’s University, 1970; Master of Arts, University of Michigan, 1972; Philosophiae Doctor, ibid., 1978 (1979)

Gregory Peter Kucich. Professor, English. Bachelor of Arts, San Francisco State University, 1978; Master of Arts, University of Michigan, 1979; Philosophiae Doctor, ibid., 1983 (1983)

Ian Kuijt. Professor, Anthropology. Bachelor of Arts, University of Lethbridge, 1984; Master of Arts, Simon Fraser University, 1988; Master of Arts, Harvard University, 1991; Philosophiae Doctor, ibid., 1995 (2000)


Yahya C. Kurama. Professor, Civil & Environmental Engineering & Earth Sciences. Bachelor of Science, Bogazici University, 1990; Master of Science, Lehigh University, 1993; Philosophiae Doctor, ibid., 1997 (1998)

Robert Lee Kusmer. Associate Librarian, Hesburgh Libraries; Fellow, Nanovic Institute for European Studies. Bachelor of Arts, Cleveland State University, 1972; Master of Arts, Northwestern University, 1977; Philosophiae Doctor, ibid., 1983; Master in Library Science, Kent State University, 1988 (1997)

Dae Kun Kwon. Research Assistant Professor, Civil & Environmental Engineering & Earth Sciences. Bach of Sci in Civil Engr, Yonsei University, 1993; M.S. Civil Engr, Korea Advanced Institute of Sc, 1995; Philosophiae Doctor, ibid., 2001 (2006)


Manuela Lahne. Research Assistant Professor, Biological Sciences. Philosophiae Doctor, University College, 2007 (2009)

Jason Richard Lahr. Assistant Professor, Art, Art History, and Design. Bachelor of Fine Arts, Clarion University of PA, 1997; Master of Fine Arts, Pennsylvania St University, 1999 (2010)

Gary A. Lamberti. Professor, Biological Sciences; Director of the GLOBES Graduate Certificate Program in Environment and Society. Bachelor of Science, University California Davis, 1975; Philosophiae Doctor, University of California Berkeley, 1983 (1989)

Stephen J Lancaster. Associate Professional Specialist, Music; Associate Professor of the Practice. Bachelor of Music, Moody Bible Institute, 2003; Master of Music, University of Notre Dame, 2005; Doctor of Music, University of Michigan, 2008 (2007)

Frederick William Landau. Associate Professor, Naval Science; Concurrent Associate Professor, First Year of Studies. B.A. History, Pennsylvania St University, 1991; Master of Business Admin, University of Massachusetts, 2009 (2013)

Jesse M. Landers. Associate Professor, English; Department Chair, English. Bachelor of Arts, Columbia College, 1988; Bachelor of Arts, University College Oxford, 1991; Philosophiae Doctor, Columbia University, 1998 (1999)


Amy Gill Langenkamp. Assistant Professor, Sociology. Bachelor of Arts, Villanova University, 1997; Master of Arts, University of Texas-Austin, 2001; Philosophiae Doctor, ibid., 2007 (2011)

Kevin Lannon. Associate Professor, Physics. Bachelor of Arts, St. Norbert College, 1997; Philosophiae Doctor, University of IL Urbana-Champaign, 2003 (2008)

David Manuel Lantigua. Assistant Professor, Theology. Bachelor of Arts, University of South Florida, 2004; Master of Arts, University of South Florida, 2007 (2016)

Jill Amanda Lany. Assistant Professor, Psychology. Bachelor of Arts, New College University S Flori, 1998; Philosophiae Doctor, University of Arizona, 2007 (2010)


Daniel K. Lapsley. The Alliance for Catholic Education Collegiate Professor of Psychology (ACE); Professor. Psychology. Bachelor of Arts, Indiana University of Pennsylv, 1977; Master of Science, University of New Orleans, 1979; Philosophiae Doctor, University of Wisconsin-Madison, 1982 (2006)

Stephanie Larocque. Associate Professor, Accountancy. Bachelor of Arts, University of Western Ontario, 1992; Philosophiae Doctor, University of Toronto, 2009 (2009)

Donald G LaSalle. Assistant Professional Specialist, First Year of Studies; Co-Director, Peer Advising Program. Bachelor of Arts, Fordham University, 1976; Master of Theology, Catholic University of America, 1980; Philosophiae Doctor, ibid., 1997 (2013)
Jay A. LaVerne. Concurrent Professional Specialist, Physics; Professional Specialist, Radiation Laboratory. Bachelor of Science, Lamar University, 1972; Philosophiae Doctor, University of Nebraska-Lincoln, 1981 (1978)


James Leady. Assistant Chair, Finance; Assistant Professional Specialist, Finance; Assistant Teaching Professor. Bachelor of Science, U. S. Military Academy, 1991; Master of Arts (Latin), University of Michigan, 1997; Philosophiae Doctor, ibid., 2011 (2006)

William Henry Leahy. Professor, Department of Economics. Bachelor of Arts, University of Notre Dame, 1959; Master of Arts, ibid., 1960; Philosophiae Doctor, ibid., 1966 (1963)

Byung-Joo Lee. Associate Professor, Department of Economics. Bachelor of Science, Seoul National University, 1982; Master of Arts, Pennsylvania State University, 1984; Master of Science, University of Wisconsin-Madison, 1986; Philosophiae Doctor, ibid., 1988 (1996)

Shaun Wook Lee. Associate Professor, Biological Sciences. Bachelor of Arts, University of California Berkeley, 1994; Bachelor of Architecture, ibid., 1994; Philosophiae Doctor, Oregon Health Sciences University, 2003 (2009)


W. Matthew Leevy. Research Associate Professor, Biological Sciences. Bachelor of Science, University of IL Urbana-Champaign, 2000; Philosophiae Doctor, Washington University, 2005 (2008)


Nicolas Lehner. Research Associate Professor, Physics. Bachelor of Science, Louis Pasteur University Strasbourg, 1994; Master of Science, ibid., 1995; Philosophiae Doctor, Queens University of Belfast, 2000 (2005)

David T. Leighton. Professor, Chemical and Biomolecular Engineering. Undeclared, Princeton University, 1980; Master of Science, Stanford University, 1981; Philosophiae Doctor, ibid., 1985 (1986)


Eriun Moira Lemrow. Assistant Professional Specialist, First Year of Studies. Bachelor of Arts, University of Wisconsin, 1997; Philosophiae Doctor, Indiana Univ-Bloomington, 2014; Master of Arts, ibid., (2014)

Craig Stanley Lent. The Frank M. Freimann Chair in Engineering (IV); Professor, Electrical Engineering; Concurrent Professor, Physics. Bachelor of Arts, University of California Berkeley, 1978; Philosophiae Doctor, University of Minnesota of Minneapolis, 1984 (1985)

Giovanna Lenzi-Sandusky. Associate Professional Specialist, Romance Languages and Literatures; Fellow, Nanovic Institute for European Studies, Laurea, University of Florence, 1979 (1990)

Anne C. Leone. Research Assistant Professor, Romance Languages and Literatures. Bachelor of Arts, Yale University, 2003; Master of Philosophy, University of Cambridge, 2005; Philosophiae Doctor, ibid., 2010 (2011)


Brian Raymond Levey. Professional Specialist, Accountancy; Teaching Professor. Bachelor of Business Admin., University of Notre Dame, 1984; Juris Doctor, Catholic University of America, 1987; Master of Law, George Washington University, 1992 (2007)

Robert Lewandowski. Associate Professional Specialist, Management; Associate Teaching Professor, Management. Bachelor of Arts, Purdue University, 1996; Master of Science, ibid., 2002 (2004)

Kristin Marie Lewis. Associate Professional Specialist, Biological Sciences. Bachelor of Science, University of Notre Dame, 1991; M.S. Biology, ibid., 1997 (1997)

Blake Leyerle. Associate Professor, Theology. Bachelor of Arts, Yale University, 1982; Master of Arts, Duke University, 1988; Philosophiae Doctor, ibid., 1991 (1990)

Lei Li. Associate Professor, Biological Sciences. Bachelor of Science, Shandong Medical University, 1985; Philosophiae Doctor, Georgia State University, 1995 (2003)

Jun Li. Assistant Professor, Applied Computational Mathematics & Statistics. Bachelor of Engineering, Tsinghua University, 2004; Master of Science, ibid., 2007; Philosophiae Doctor, Stanford University, 2012 (2012)


Kathryn Ann Lichon. Assistant Professional Specialist, Institute for Educational Initiatives; Director, Alliance for Catholic Education ENL Program. Bachelor of Business Admin., Baylor University, 2005; Master of Education, University of Notre Dame, 2007 (2012)

Ethan Lieber. Assistant Professor, Department of Economics. Bachelor of Arts, University of Chicago, 2004; Master of Arts, ibid., 2008; Philosophiae Doctor, ibid., 2013 (2013)

Marya Lieberman. Professor, Chemistry and Biochemistry. Bachelor of Science, Massachusetts Institute of Tec, 1989; Philosophiae Doctor, University of Washington, 1994 (1996)


Hai Lin. Associate Professor, Electrical Engineering. Bachelor of Science, University of Science & Techno, 1997; Master of Science, Chinese Academy of Sciences, 2000; Master of Science, University of Notre Dame, 2002; Philosophiae Doctor, ibid., 2005 (2012)
Faculty

David Nathan Lincicum. Associate Professor, Theology; Fellow, Nanovic Institute for European Studies. Bachelor of Arts, Whitworth College, 2001; Master of Arts, Wheaton College, 2004; Philosophiae Doctor, University of Oxford, 2009 (2015)

Daniel A. Lindley. Associate Professor, Political Science. Bachelor of Arts, Tufts University, 1983; Philosophiae Doctor, Massachusetts Institute of Tech, 1998 (1999)

Alan Euan Lindsay. Assistant Professor, Applied Computational Mathematics & Statistics. B.S. Mathematics, University of Edinburgh, 2005; Philosophiae Doctor, Univ. of British Columbia, 2010 (2013)

Laurie Elizabeth Littlepage. Campbell Family Assistant Professor of Cancer Research; Assistant Professor, Chemistry and Biochemistry. Bachelor of Science, University of Texas-Austin, 1995; Master of Science, University of Texas, 1999 (2002)

Chao-Shin Liu. Associate Professor, Accountancy. Bachelor of Business Admin., National Taiwan University, 1979; Master of Business Admin, National Chengchi University, 1983; Philosophiae Doctor, University of IL Urbana-Champaign, 1992 (1992)

Xinyu Liu. Research Associate Professor, Physics. Bachelor of Science, Univ. of Sci. & Tech. of China, 1993; Master of Science, ibid., 1996; Philosophiae Doctor, University of Notre Dame, 2003 (2002)

Lei Liu. Assistant Professor, Electrical Engineering. Bachelor of Science, Nanjing University, 1998; M.S. Electrical Engr, ibid., 2001; Philosophiae Doctor, University of Virginia, 2007 (2009)

Fang Liu. Huisking Foundation, Inc. Assistant Professor of Applied and Computational Mathematics and Statistics; Assistant Professor, Applied Computational Mathematics & Statistics. Bachelor of Science, Peking University, 1997; Master of Science, Iowa State University, 1999; Philosophiae Doctor, University of Michigan, 2003 (2011)

Cheng Liu. Research Assistant Professor, Psychology. B.S. Physics, China University of Science an, 2004; Bachelor of Science, University of Science & Techno, 2004; Philosophiae Doctor, University of IL Urbana-Champaign, 2011; Doctor of Philosophy, ibid., (2011)

Omar A Lizardo. Professor, Sociology. Bachelor of Science, Brooklyn College, 1997; Master of Arts, University of Arizona, 2002; Philosophiae Doctor, ibid., 2006 (2006)

Neil Francis Lobo. Research Associate Professor, Biological Sciences. B.S. Microbiology, St. Joseph's College, 1995; Philosophiae Doctor, University of Notre Dame, 2001 (2000)


Timothy James Loughran. C.R. Smith Professor of Finance. Bachelor of Arts, University of IL Urbana-Champaign, 1984; Bachelor of Science, ibid., 1985; Master of Business Admin, Indiana Univ-Bloomington, 1989; Philosophiae Doctor, University of IL Urbana-Champaign, 1993 (1999)


Jiacai Lu. Research Assistant Professor, Aerospace and Mechanical Engineering. Bachelor of Science, Xi’an Jiaotong University, 1994; Philosophiae Doctor, ibid., 1999 (2014)

Xin Lu. Assistant Professor, Biological Sciences. Bachelor of Science, Tsinghua University, 2004; Philosophiae Doctor, Princeton University, 2010 (2017)

Gitta Lubke. Professor, Psychology. Bachelor of Science, Johann W Goethe U of Frankfurt, 1979; Master of Arts, University of Amsterdam, 1997; Philosophiae Doctor, Free University Amsterdam, 2002 (2004)

John Ryan Lubker. Concurrent Associate Professional Specialist, Psychology; Professional Specialist, Graduate School. Bachelor of Arts, University of Notre Dame, 2000; Master of Arts, James Madison University, 2003; Philosophiae Doctor, West Virginia University, 2006 (2011)

Cecilia Lucero. Assistant Professional Specialist, First Year of Studies. Bachelor of Arts, University of Notre Dame, 1984; Master of Arts, University of Colorado, 1990; Philosophiae Doctor, University of Michigan, 2002 (1998)

Joshua Kristoffer Lund. Associate Professor, Romance Languages and Literatures. Bachelor of Arts, Gustavus Adolphus College, 1991; Master of Arts, University of Minnesota, 1998; Philosophiae Doctor, ibid., 2002 (2015)

James McMurrin Lundberg. Assistant Professional Specialist, History; Assistant Professor of the Practice. Bachelor of Arts, Connecticut College, 2000; Master of Arts, Yale University, 2005; Philosophiae Doctor, ibid., 2009 (2016)

Tengfei Luo. Assistant Professor, Aerospace and Mechanical Engineering. Bachelor of Science, Xi’an Jiaotong University, 2005; Philosophiae Doctor, Michigan State University, 2009 (2012)

Semion Lyandres. Professor, History; Fellow, Nanovic Institute for European Studies. Bachelor of Arts, St Petersburg University, 1980; Master of Arts, Boston University, 1987; Master of Arts, Stanford University, 1988; Philosophiae Doctor, ibid., 1992 (2001)

Natalia Lyandres. Librarian, Hesburgh Libraries; Fellow, Nanovic Institute for European Studies. Bachelor of Arts, Moscow State University, 1990; M.S. Librarianship, San Jose State University, 1993 (2001)

Michael N. Lykoudis. Francis and Kathleen Rooney Dean of the School of Architecture; Dean, School of Architecture; Professor, School of Architecture; Fellow, Nanovic Institute for European Studies. Bachelor of Architecture, Cornell University, 1979; Master of Architecture, University of IL Urbana-Champaign, 1983 (1991)

Congcong Ma. Assistant Professional Specialist, East Asian Languages and Cultures. Bachelor of Arts, Minzu University, 2009; Master of Arts, Beijing Normal University, 2012 (2012)


Kati Shannon Macaluso. Assistant Professional Specialist, Institute for Educational Initiatives; Director, ACE Advocates. Bachelor of Arts, University of Notre Dame, 2005; Master of Education, ibid., 2007 (2016)

Louis MacKenzie. Associate Professor, Romance Languages and Literatures; Fellow, Nanovic Institute for European Studies. Bachelor of Arts, University of Notre Dame, 1969; Master of Arts, Middlebury College, 1972; Philosophiae Doctor, Cornell University, 1977 (1983)

Nicole R MacLaughlin. Associate Professional Specialist, University Writing Program; Assistant Teaching Professor; Associate Teaching Professor. Bachelor of Arts, University of IL Urbana-Champaign, 1992; Master of Arts, ibid., 1995; Master of Arts, ibid., 1995 (2007)

Tara Aine MacLeod. Associate Professional Specialist, Irish Language and Literature; Associate Teaching Professor. Bachelor of Science, University College Dublin, 1991; Master of Science, University College Cork, 1997 (2008)

Gregory R. Madey. Research Professor, Computer Science and Engineering. Bachelor of Science, Cleveland State University, 1974; Master of Science, ibid., 1975; Master of Science, Case Western Reserve Univ., 1979; Philosophiae Doctor, ibid., 1984 (2008)

Edward Joseph Maginn. The Dorini Family Chair of Energy Studies; Professor, Chemical and Biomolecular Engineering; Department Chair, Chemical and Biomolecular Engineering. Bach of Sci in Chemical Eng, Iowa State University, 1987; Philosophiae Doctor, University of California Berkeley, 1995 (1995)

Scott P. Mainwaring. The Eugene P. and Helen Conley Professor of Political Science; Professor, Political Science. Bachelor of Arts, Yale University, 1976; Master of Arts, ibid., 1976; Philosophiae Doctor, Stanford University, 1983 (1983)


Jennifer Marie Malherbek. Assistant Professor, Naval Science. Bachelor of Business Admin., University of Notre Dame, 2010; B.S. Business Administration, ibid., 2010; M.S. Engineering, Old Dominion University, 2016 (2015)


Theodore Eugene Mandell. Associate Professional Specialist, Film, Television, and Theatre. Bachelor of Arts, University of Notre Dame, 1986; Master of Arts, University of Iowa, 1989 (1988)

Elena Maria Mangione-Lora. Associate Professional Specialist, Romance Languages and Literatures. Bachelor of Arts, Saint Mary’s College, 1990; Master of Arts, University of Notre Dame, 1998 (1998)

Michael Joseph Manner. John F. O’Shaughnessy Associate Professor of Family Enterprise, Mendoza College of Business; Associate Professor, Management. Bachelor of Science, Aquinas College, 2002; Master of Business Admin, Grand Valley State University, 2004; Philosophiae Doctor, Michigan State University, 2007 (2008)

Khachatur Manukyan. Research Assistant Professor, Physics. Bachelor of Science, Yerevan State University, 2001; Master of Science, ibid., 2003; Philosophiae Doctor, ibid., 2006 (2016)

Nancy Marinelli. Research Associate Professor, Physics. Bachelor of Arts, University of Bari, 1993; Philosophiae Doctor, ibid., 1997 (2008)

Nelson Mark. Alfred C. DeCrane Jr. Professor of International Economics; Professor, Department of Economics. Bachelor of Arts, University of California Sta Barbara, 1978; Philosophiae Doctor, University of Chicago, 1983 (2002)

Kate Elizabeth Marshall. Concurrent Associate Professor, American Studies; Associate Professor, English. Bachelor of Arts, University California Davis, 1997; Master of Arts, University of Southern California, 2006; Philosophiae Doctor, UCLA, 2009 (2009)

Jennifer Newsome Martin. Assistant Professor, Program of Liberal Studies, Concurrent Assistant Professor, Theology. Bachelor of Arts, Atlanta Christian College, 2002; Master of Theological Studies, University of Notre Dame, 2007; Philosophiae Doctor, ibid., 2012 (2005)

Holly Elizabeth Martin. Professional Specialist, First Year of Studies; Associate Dean, First Year of Studies. Bachelor of Arts, Saint Olaf College, 1978; Master of Arts, University of Notre Dame, 1979; Philosophiae Doctor, ibid., 1983 (1983)

Adam Martin. Assistant Professor, Physics. Bachelor of Science, University of Wisconsin-Madison, 2001; Philosophiae Doctor, Boston University, 2007 (2012)

Alexander Martin. Professor, History; Fellow, Nanovic Institute for European Studies. Bachelor of Arts, Cornell University, 1985; Master of Arts, Columbia University, 1986; Philosophiae Doctor, University of Pennsylvania, 1993 (2006)


Thomas G. Marullo. Professor, German and Russian Languages and Literature. Bachelor of Arts, College of the Holy Cross, 1970; Master of Arts, Cornell University, 1971; Philosophiae Doctor, ibid., 1975; Master of Business Admin, Indiana University South Bend, 1989 (1975)

Julia J. Marvin. Associate Professor, Program of Liberal Studies. Bachelor of Arts, Princeton University, 1988; Master of Arts, ibid., 1992; Philosophiae Doctor, ibid., 1997 (1997)

Nancy Masters. Assistant Professional Specialist, Alliance for Catholic Education. Bachelor of Arts, Saint Mary’s College, 1976; Master of Science, Indiana University South Bend, 1979 (2001)

Grant James Mathews. Professor, Physics. Bachelor of Science, Michigan State University, 1972; Philosophiae Doctor, University of Maryland Univers, 1977 (1994)


Karel Matous. Associate Professor, Aerospace and Mechanical Engineering. Bachelor of Science, Czech Technical University of Prague, 1996; Master of Science, ibid., 1998; Philosophiae Doctor, ibid., 2000 (2009)
Timothy M. Matovina.  Professor, Theology; Co-Director, Institute for Latino Studies; Concurrent Professor, American Studies. Bachelor of Arts in Education, Indiana Univ-Bloomington, 1978; Master of Divinity, University of St Michaels Coll, 1983; Philosophiae Doctor, Catholic University of America, 1993 (2000)

William C. Mattison.  Associate Professor, Theology. Bachelor of Arts, Georgetown University, 1993; Master of Arts, Trinity College, 1995; Master of Theological Studies, Weston School of Theology, 1997; Philosophiae Doctor, University of Notre Dame, 2003 (2016)

Sara L. Maurer.  Associate Professor, English. Bachelor of Arts, Rice University, 1995; Master of Arts, Indiana Univ-Bloomington, 1997; Philosophiae Doctor, ibid., 2003 (2003)

George Mavroedis.  Assistant Professor, Civil & Environmental Engineering & Earth Sciences. Diploma, Natl Technical University of Athens, 1997; Master of Science, Rensselaer Polytechnic Institu, 1998; Philosophiae Doctor, State University of NY-Buffalo, 2004 (2013)

Scott E. Maxwell.  The Matthew A. Fitzsimons Chair in Psychology; Professor, Psychology. Bachelor of Science, Duke University, 1972; Master of Arts, UNC at Chapel Hill, 1974; Philosophiae Doctor, ibid., 1977 (1982)


David Thomas Mayernik.  Associate Professor, School of Architecture. Bachelor of Architecture, University of Notre Dame, 1983 (2002)

Gail Anne Mayotte, SASV.  Associate Professional Specialist, Alliance for Catholic Education. Bachelor Degree - Unspecified, University of Lowell, 1983; Master Degree - Unspecified, Boston College, 1991; Doctorate Degree, ibid., 2001 (2004)


Elizabeth F. Mazurek.  Associate Professor, Classics. Bachelor of Arts, Dickinson College, 1983; Master of Arts, UNC at Chapel Hill, 1985; Philosophiae Doctor, ibid., 1988 (1990)

Tadeusz R. Mazurek.  Associate Professional Specialist, Classics; Assistant Teaching Professor; Associate Teaching Professor. Bachelor of Arts, Yale University, 1985; Philosophiae Doctor, UNC at Chapel Hill, 1997 (1997)

A. James McAdams.  Dr. Scholl Professor of International Affairs; Professor, Political Science; Director, Nanovic Institute for European Studies; Fellow, Kellogg Institute for International Studies; Fellow, Nanoic Institute for European Studies; Fellow, Joan B. Kroc Institute for International Peace; Concurrent Professor, History. Bachelor of Arts, Earlham College, 1976; Master of Arts, University of California Berkeley, 1977; Philosophiae Doctor, ibid., 1983 (1992)


Rodney Lee McClain.  Associate Professor, Aerospace and Mechanical Engineering; Bach of Sci in Mech Engr, Purdue University, 1972; M.S. Mechanical Engr, University of Notre Dame, 1982 (1980)

Elizabeth Aura McClintock.  Assistant Professor, Sociology. Bachelor of Arts, Princeton University, 2003; Master of Arts, Stanford University, 2005; Philosophiae Doctor, ibid., 2011 (2011)

Barry McCrea.  Donald R. Keough Family Professor of Irish Studies; Professor, English; Concurrent Professor, Romance Languages and Literatures; Concurrent Professor, Irish Language and Literature. Bachelor of Arts, University of Dublin Trinity College, 1997; Philosophiae Doctor, Princeton University, 2004 (2012)

Mark J. McCready.  Senior Associate Dean of Research and Graduate Studies, College of Engineering; Professor, Chemical and Biomolecular Engineering. Bach of Sci in Civil Engr, University of Delaware, 1979; Master of Science, University of Ill Urbana-Champaign, 1981; Philosophiae Doctor, ibid., 1984 (1984)

Bill D. McDonald.  Thomas A. and James J. Bruder Chair in Administrative Leadership; Professor, Finance; College Information Officer. Bachelor of Science, Central Missouri State University, 1975; Master of Business Admin, Arizona State University, 1976; Philosophiae Doctor, ibid., 1979 (1979)

Nyree Valeah McDonald.  Associate Dean of Admissions and Recruitment, Graduate School; Associate Professional Specialist, Graduate School. Bachelor of Science, Tuskegee Institute, 1994; Master of Science, University Alaska Anchorage, 2000; Master of Science, University of Notre Dame, 2003; Philosophiae Doctor, ibid., 2006 (2009)

Terence McDonnell.  Concurrent Assistant Professor, American Studies; Assistant Professor, Sociology. Fellow, Kellogg Institute for International Studies. Bachelor of Arts, University of Virginia, 2000; Philosophiae Doctor, Northwestern University, 2009 (2011)

Erin McDonnell.  Concurrent, African and African American Studies; Fellow, Kellogg Institute for International Studies; Fellow, Joan B. Kroc Institute for International Peace; Assistant Professor, Sociology. B.S. Education, Northwestern University, 2002; Philosophiae Doctor, ibid., 2012 (2011)

Mary Ann McDowell.  Associate Professor, Biological Sciences; Provost Fellow. Bachelor of Science, University of Nebraska-Lincoln, 1988; Master of Science, ibid., 1990; Philosophiae Doctor, University of Wisconsin-Madison, 1995 (2001)


Paul J. McGinn.  Professor, Chemical and Biomolecular Engineering. Bachelor of Science, University of Notre Dame, 1980; M.S. Metallurgical Engr, ibid., 1983; Philosophiae Doctor, ibid., 1984 (1987)

Sean David McGraw, C.S.C.  Assistant Professor, Political Science; Fellow, Kellogg Institute for International Studies; Fellow, Nanoic Institute for European Studies. Bachelor of Arts, University of Notre Dame, 1992; Master of Science, London School of Econ & Pol Sc, 1993; Master of Divinity, University of Notre Dame, 2000; Philosophiae Doctor, Harvard University, 2009 (2009)

John Thomas McGreevy.  I.A. O'Shaughnessy Dean of the College of Arts and Letters; Dean, College of Arts and Letters; Professor, History; Concurrent Professor, American Studies. Bachelor of Arts, University of Notre Dame, 1986; Master of Arts, Stanford University, 1987; Philosophiae Doctor, ibid., 1992 (1997)

Amanda McKendree. Associate Professional Specialist, Management; Associate Teaching Professor. Bachelor of Arts, Chatham College, 2001; Master of Public Administration, University of Pittsburgh, 2003; Philosophiae Doctor, Duquesne University, 2009 (2009)

Mark Philip McKenna. Professor, Law School. Bachelor of Arts, University of Notre Dame, 1997; Juris Doctor, University of Virginia, 2000 (2008)

James Joseph McKenna. The Rev. Edmund P. Joyce, C.S.C., Professor of Anthropology; Professor, Anthropology. Bachelor of Arts, University of California Berkeley, 1970; Master of Arts, San Diego State University, 1972; Philosophiae Doctor, University of Oregon, 1975 (1997)

Rebecca Tinio McKenna. Concurrent Assistant Professor, American Studies; Assistant Professor, History. Bachelor of Arts, Columbia University, 1999; Master of Arts, Yale University, 2005; Master of Philosophy, ibid., 2007; Philosophiae Doctor, ibid., 2010 (2011)

Maria Kathleen McKenna. Associate Professional Specialist, Institute for Educational Initiatives; Associate Professor of the Practice. Bachelor of Arts, University of Notre Dame, 1997; Master of Science, Northwestern University, 1998; Philosophiae Doctor, Saint Louis University, 2010 (2009)

Gerald P. McKenny. Walter Professor of Theology; Professor, Theology. Bachelor of Arts, Wheaton College, 1979; Master of Divinity, Princeton Theological Seminary, 1982; Philosophiae Doctor, University of Chicago, 1989 (2001)


Sarah E. McKibben. Associate Professor, Irish Language and Literature; Acting Department Chair, Irish Language and Literature; Concurrent Associate Professor, Gender Studies. Bachelor of Arts, University of California Berkeley, 1993; Master of Philosophy, National University of Ireland Dubl, 1997; Master of Arts, Cornell University, 2000; Philosophiae Doctor, ibid., 2003 (2002)

Jason Stiller McLachlan. Associate Professor, Biological Sciences. Bachelor of Arts, Columbia University, 1989; Master of Science, University of Washington, 1994; Philosophiae Doctor, Duke University, 2003 (2006)

Erin Fyne McLaughlin. Associate Professional Specialist, University Writing Program; Associate Teaching Professor. Bachelor of Arts, Eastern Washington University, 2003; Master of Arts, Bowling Green State University, 2007; Philosophiae Doctor, ibid., 2010 (2010)


Jessica McManus Warnell. Associate Professional Specialist, Management; Associate Teaching Professor. Bachelor of Arts, Saint Mary's College, 1998; Master of Arts, University of Chicago, 2000 (2008)

Collin McMillan. Assistant Professor, Computer Science and Engineering. Bachelor of Science, University of Tulsa, 2007; Master of Science, Coll of William & Mary, 2009; Philosophiae Doctor, ibid., 2012 (2012)


Peter Thomas McQuillan. Associate Professor, Irish Language and Literature. Bachelor of Arts, University College Dublin, 1981; Master of Arts, ibid., 1983; Philosophiae Doctor, Harvard University, 1991 (1994)

Joyelle McSweeney. Professor, English. Bachelor of Arts (Latin), Harvard University, 1997; Master of Philosophy, University of Oxford, 1999; Master of Fine Arts, University of Iowa, 2001 (2006)

Rory M. McVeigh. Professor, Sociology; Co-Editor, American Sociological Review. Bachelor of Arts, University of Arizona, 1991; Master of Arts, UNC at Chapel Hill, 1993; Doctor of Social Science, ibid., 1996 (2002)

Leo Hubbard McWilliams. Associate Professional Specialist, College of Engineering. Bachelor of Arts, University of Notre Dame, 1981; Bachelor of Science, ibid., 1982; Bach of Sci in Electrical Engr, ibid., 1982; M.S. Electrical Engr, ibid., 1985; Philosophiae Doctor, ibid., 1993 (2001)


David Michael Medvigy. Associate Professor, Biological Sciences. Bachelor of Science, Rutgers University, 1998; Philosophiae Doctor, Harvard University, 2006 (2016)


Collin Meissner. Assistant Professional Specialist, Office of Arts & Letters Undergraduate Study; Assistant Dean. Bachelor of Arts, Univ. of British Columbia, 1985; Master of Arts, University of Notre Dame, 1987; Philosophiae Doctor, ibid., 1995 (1995)

Bruce J Melanson. Research Assistant Professor, Chemistry and Biochemistry. Bachelor of Science, Louisiana State University, 2002; Doctor of Philosophy, University of Notre Dame, 2008 (2015)

John Christopher Mellor. Associate Professional Specialist, School of Architecture; Associate Professor of the Practice, School of Architecture. Bachelor of Architecture, University of Notre Dame, 1995; Master of Architecture, ibid., 2010 (2011)

Richard R. Mendenhall. The William and Cassie Daley Professor of Finance; Professor, Finance; Department Chair, Finance. Bachelor of Science, U. S. Naval Academy, 1974; Master of Business Admin, Indiana Univ-Bloomington, 1980; Philosophiae Doctor, University of Ill. Urbana-Champaign, 1985 (1985)

Ivis Menez. Associate Professional Specialist, Romance Languages and Literatures. Associate in Arts, Miami-Dade Community College, 1993; Bachelor of Arts, Florida International Universi, 1994; Master of Arts, Loyola University Chicago, 1996 (2000)

John George Michel. Associate Professional Specialist, Management; Associate Teaching Professor. Bachelor of Arts, Tulane University, 1982; Master of Philosophy, Columbia University, 1992; Philosophiae Doctor, ibid., 1995 (2006)


Kenneth W. Milani. Professor, Accountancy. Bachelor of Science, Bradley University, 1962; Master of Business Admin, ibid., 1967; Philosophiae Doctor, University of Iowa, 1972 (1972)

Tijana Milenkovic. Associate Professor, Computer Science and Engineering. Bachelor of Science, University of Sarajevo, 2005; Master of Science, University California Irvine, 2008; Philosophiae Doctor, ibid., 2010 (2010)

Jeffrey S. Miller. Associate Professor, Accountancy. Bachelor of Science, Ohio State University, 1982; Master of Business Admin, University of Michigan, 1988; Philosophiae Doctor, University of Texas-Austin, 2000 (2000)


Douglas Andrew Miller. Assistant Professional Specialist, Chemistry and Biochemistry; Assistant Teaching Professor. Bachelor of Arts, Drew University, 1981; Philosophiae Doctor, Pennsylvania St University, 1989 (1997)

Laura E Miller-Graff. Fellow, Nanovic Institute for European Studies; Assistant Professor, Psychology. Bachelor of Arts, University of Notre Dame, 2008; Master of Science, University of Michigan, 2010; Philosophiae Doctor, ibid., 2013 (2013)

Heather Hyde Minor. Associate Professor, Art, Art History, and Design. Bachelor of Arts, Mount Holyoke College, 1993; Master of Arts, Princeton University, 1999; Philosophiae Doctor, ibid., 2002 (2015)


Philip E. Mirowski. The Carl E. Koch Professor of Economics; Professor, College of Arts and Letters; Acting Director, Reilly Center for Science, Technology, and Value; Acting Director of the Reilly Center. Bachelor of Arts, Michigan State University, 1973; Master of Arts, University of Michigan, 1976; Philosophiae Doctor, ibid., 1979 (1990)


Vanessa A. Miseres. Assistant Professor, Romance Languages and Literatures; Fellow, Kellogg Institute for International Studies; Fellow, Nanovic Institute for European Studies. Bachelor of Arts, National University of Rosario, 2004; Master of Arts, Vanderbilt University, 2006; Philosophiae Doctor, ibid., 2010 (2011)

Gerard Krzysztof Misiolek. Professor, Mathematics. Master of Science, Technical University of Warsaw, 1987; Master of Arts, University of Warsaw, 1988; Philosophiae Doctor, SUNY at Stony Brook, 1992 (1993)

H. Fred Mittelstaedt. Deloitte Foundation Professor of Accountancy; Professor, Accountancy; Department Chair, Accountancy. Bachelor of Science, Illinois State University, 1979; Master of Science, ibid., 1982; Philosophiae Doctor, University of I. Urbana-Champaign, 1987 (1992)

Pavel Nikolayevich Mnev. Assistant Professor, Mathematics. Bachelor of Physics, St Petersburg University, 2002; Philosophiae Doctor, Russian Academy of Sciences, 2008 (2016)

Bahram Moasser. Associate Professional Specialist and Associate Teaching Professor, Chemistry and Biochemistry. B.A. Chemistry, Cornell University, 1987; Master of Science, University of Wisconsin Center, 1990; Philosophiae Doctor, University of Minnesota, 1995 (2016)

Shahriar Mobashery. Natavi Family Professor of Life Sciences; Professor, Chemistry and Biochemistry. Bachelor of Science, University of Southern California, 1980; Bachelor of Science, ibid., 1981; Philosophiae Doctor, University of Chicago, 1985 (2003)
Christian Robert Moews. Associate Professor, Romance Languages and Literatures. Bachelor of Arts, Harvard University, 1980; Master of Arts, Columbia University, 1989; Philosophiae Doctor, ibid., 1994 (1994)

Scott M. Monroe. The William K. Warren Foundation Professor of Psychology; Professor, Psychology. Bachelor of Arts, Saint Olaf College, 1972; Master of Arts, Southern Illinois University at Carbondale, 1975; Philosophiae Doctor, State University of NY-Buffalo, 1979 (2006)

Susannah Brietz Monta. Associate Professor, English; Glynn Family Honors Associate Professor of English; Acting Director, Glynn Family Honors Program. Bachelor of Arts, Urbana University, 1992; Bachelor of Science, ibid., 1992; Master of Arts, University of Wisconsin-Madison, 1993; Philosophiae Doctor, ibid., 1998 (2007)

Vittorio Montemaggi. Concurrent, Theology; Fellow, Nanovic Institute for European Studies; Associate Professor, Romance Languages and Literatures. Bachelor of Arts, University of Cambridge, 2000; Master of Philosophy, ibid., 2001; Philosophiae Doctor, ibid., 2006 (2009)

Elizabeth S. Moore. Associate Professor, Marketing. Bachelor of Arts, Mount Holyoke College, 1980; Masters in Education, University of Florida, 1989; Doctorate of Business Administration, ibid., 1994 (1999)

Monica Moore. Assistant Librarian, Hesburgh Libraries. Bachelor of Science, Eastern Michigan University, 1992; Master of Library & Information Science, Syracuse University, 2008 (2012)

Ebrahim Moosa. Professor, History; Co-Director, Contending Modernities Initiative; Concurrent Professor, Law School. Bachelor of Arts, University of KwaZulu-Natal, 1982; Master of Arts, University of Cape Town, 1989; Philosophiae Doctor, ibid., 1995 (2014)

Miguel Morales. Assistant Professor, Biological Sciences. Bachelor of Science, Universidad Complutense de Madrid, 1997; Philosophiae Doctor, Complutense Univ of Madrid, 2002 (2011)

Dennis William Moran. Professional Specialist, Review of Politics; Managing Editor, Review of Politics. Bachelor of Arts, Youngstown State University, 1966; Philosophiae Doctor, University of Notre Dame, 1976 (1976)

Daniel Andrew Morden. Assistant Professor, Naval Science. Bachelor of Science in Chemical Engineering, Villanova University, 2009; Bachelor of Science, ibid., 2009; Undeclared, Unspecified (College), (2014)

Olivier Morel. Fellow, Joan B. Kroc Institute for International Peace; Assistant Professor, Romance Languages and Literatures; Fellow, Nanovic Institute for European Studies. Bachelor of Arts, University of Aix-Marseille III, 1987; Master of Arts, ibid., 1990; Philosophiae Doctor, Université de Paris-Sorbonne, 2010 (2008)

Marisel C. Moreno. Fellow, Institute for Latino Studies; Associate Professor, Romance Languages and Literatures. Bachelor of Arts, University of Pennsylvania, 1995; Philosophiae Doctor, Georgetown University, 2004 (2007)

Leslie L. Morgan. Associate Librarian, Hesburgh Libraries; Concurrent Associate Professor, Specialist, First Year of Studies. Bachelor of Arts, Mercy College of Detroit, 2001; Master in Library Science, Wayne State University, 2005 (2007)

Vinicius Moris Placco. Research Assistant Professor, Physics. B.S. Physics, University of Sao Paulo, 2005; Master of Science, ibid., 2007; Philosophiae Doctor, ibid., 2010 (2015)

Michael H. Morris. Professor, Accountancy. Bachelor of Science, Case Western Reserve University, 1972; Master of Business Administration, University of Cincinnati, 1974; Philosophiae Doctor, ibid., 1980 (1979)

Scott Christopher Morris. Research Director, Turbomachinery Facility; Professor, Aerospace and Mechanical Engineering. Bachelor of Science in Mechanical Engineering, Michigan State University, 1994; M.S. Mechanical Engineering, ibid., 1997; M.S. Mathematics, ibid., 2001; Philosophiae Doctor, ibid., 2002 (2002)

Karen Marie Morris. Associate Professional Specialist, Alliance for Catholic Education. Bachelor of Science, Purdue University, 1986; Master of Arts, Andrews University, 1993 (2008)


Hildegund Gerlinde Muller. Associate Professor, Classics. Bachelor of Arts, University of Vienna, 1988; Philosophiae Doctor, ibid., 2004 (2008)

Michele Muller-Itten. Instructor, Economics. Bachelor of Science, Federal Institute of Technology Lausanne, 2008; Master of Science, ibid., 2010 (2017)

Amy C. Mulligan. Assistant Professor, Irish Language and Literature. Bachelor of Arts, University of Iowa, 1997; Master of Philosophy, University of Oxford, 2000; Doctor of Philosophy, ibid., 2004 (2013)

Vincent Phillip Munoz. Director, Constitutional Studies/Tocqueville; Associate Professor, Political Science; Concurrent Associate Professor, Law School. B.A. Economics, Claremont McKenna College, 1993; Master of Arts, Boston College, 1995; Philosophiae Doctor, Claremont Graduate School, 2001 (2009)

G. Felicita Munzel. Program, Program of Liberal Studies. Bachelor of Arts, Mercer University Main Campus, 1983; Master of Arts, Emory University, 1988; Philosophiae Doctor, ibid., 1990 (1992)

Andre Christopher Murmicks. Assistant Professor, Art, Art History, and Design. Bachelor of Science, Ohio State University, 1996; Master of Fine Arts, ibid., 2005 (2010)

Patrick Edward Murphy. Professor, Marketing. Bachelor of Business Administration, University of Notre Dame, 1970; Master of Business Administration, Bradley University, 1971; Philosophiae Doctor, University of Houston, 1975 (1984)

David W. Murphy. Associate Professor, ESTEEM Graduate Program; Associate Dean of Entrepreneurship in Engineering and Science. B.A. Economics, University of Notre Dame, 1980; Master of Business Administration, Dartmouth College, 1984 (2011)

Francesca Aran Murphy. Professor, Theology. Bachelor of Arts, University of Georgia, 1997; Master of Arts, University of Virginia, 1999; Philosophiae Doctor, Stanford University, 2006 (2011)

Tonia Hay Murphy. Professor, Accountancy. Teaching Professor, Bachelor of Arts, University of Notre Dame, 1984; Juris Doctor, University of Michigan, 1987 (1992)

Sarah Anne Mustillo. Professor, Sociology; Department Chair, Sociology. Bachelor of Arts, University of Notre Dame, 1996; Master of Arts, Duke University, 1999; Philosophiae Doctor, ibid., 2001 (2014)

John Copeland Nagle. John N. Matthews
Professor of Law; Professor, Law School. Bachelor of
Arts, Indiana Univ-Bloomington, 1982; Juris Doctor, University of Michigan, 1986
(1998)

Darcia Fe Narvaez. Professor, Psychology; Fellow, Joan B. Kroc Institute for International Peace.
Bachelor of Arts, University of Northern Colorado, 1976; Master of Divinity, Lutheran School of Theology, 1984; Philosophiae Doctor, University of Minnesota, 1993 (2000)

Clive R. Neal. Professor, Civil & Environmental Engineering & Earth Sciences. Bachelor of Science, University of Leicester, 1979; Philosophiae Doctor, University of Leeds, 1986 (1990)


Robert Nerenberg. Associate Professor, Civil & Environmental Engineering & Earth Sciences. Bachelor of Arts, Universidad de Buenos Aires, 1990; Master of Science, Wayne State University, 1992; Philosophiae Doctor, Northwestern University, 2003 (2004)

Svetlana Neretina. Associate Professor, Aerospace and Mechanical Engineering, B.S. Engineering Physics, Moscow State University, 1998; Philosophiae Doctor, McMaster University, 2007 (2016)

Scott Nestler. Associate Professional Specialist, Management; Associate Teaching Professor. Bachelor of Science, Lehigh University, 1989; Master of Science, Naval Postgraduate School, 1999; Philosophiae Doctor, University of Maryland Unives, 2007 (2015)

Andreas Neuhierl. Assistant Professor, Finance. Diploma, University of Augsburg, 2005; Doctorate Degree, ibid., 2009; Philosophiae Doctor, Northwestern University, 2015 (2015)

Samuel Newlands. William J. and Dorothy K. O'Neill Professor of Philosophy; Associate Professor, Philosophy; Associate Director, Center for Philosophy of Religion. Bachelor of Philosophy, Wake Forest University, 2000; Master of Arts, Yale University, 2003; Master of Philosophy, ibid., 2003; Philosophiae Doctor, ibid., 2006 (2006)


Ian D Newman. Assistant Professor, English; Fellow, Nanovic Institute for European Studies. Bachelor of Arts, University of Cambridge, 1998; Master of Arts, California State U Los Angeles, 2009; Philosophiae Doctor, UCLA, 2014 (2013)


James Ng. Assistant Librarian, Hesburgh Libraries. Bachelor of Science, University of Michigan, 2005; Master of Arts, Ohio University, 2007 (2013)

Martin Lam Nguyen, C.S.C. Associate Professor, Art, Art History, and Design. Bachelor of Arts, University of Portland, 1982; Master of Divinity, University of Notre Dame, 1988; Master of Arts, Yale University, 1993; Master of Fine Arts, University of California Berkeley, 1995 (1995)

 Dong Quan Ngoc Nguyen. Assistant Professor, Applied Computational Mathematics & Statistics. Philosophiae Doctor, University of Arizona, 2012 (2016)

Briona Mary Nic Dhiarmada. Thomas J. and Kathleen M. O'Donnell Professor of Irish Studies; Professor, Irish Language and Literature. Bachelor of Arts, Trinity College, 1980; Master of Arts, ibid., 1991; Philosophiae Doctor, University College Dublin, 1995 (2008)


Liviu Nicolaescu. Professor, Mathematics. Bachelor of Science, Al I Cuza University, 1987; Philosophiae Doctor, Michigan State University, 1994 (1998)


Jonathan Noble. Fellow, Kellogg Institute for International Studies; Associate Professional Specialist; VP-Associate Provost for Internationalization. Bachelor of Arts, Coll of William & Mary, 1994; Master of Arts, Ohio State University, 1996; Philosophiae Doctor, ibid., 2003 (2007)

Stacey Stough Noem. Concurrent Assistant Professional Specialist, First Year of Studies; Assistant Professional Specialist, Theology. Bachelor of Arts, University of Notre Dame, 1998; Bachelor of Science, ibid., 1999; Master of Divinity, ibid., 2005 (2012)

Daniel Patrick Nolan. Professor, Philosophy. Bachelor of Arts, University of Queensland, 1992; Bachelor of Arts, ibid., 1992; Bachelor of Arts, ibid., 1993; Doctor of Philosophy, Australian National University, 1998 (2016)

Robert Edward Norton. Professor, German and Russian Languages and Literature; Director, VP-Associate Provost for Internationalization. Bachelor of Arts, University of California Sta Barbara, 1982; Master of Arts, Princeton University, 1985; Philosophiae Doctor, ibid., 1988 (1998)

Michael Tzvi Novick. Associate Professor, Theology; Abraham Associate Professor of Jewish Thought and Culture. Bachelor of Arts, Yale University, 1998; Juris Doctor, ibid., 2002; Master of Arts, Yeshiva University, 2003; Master of Arts, Yale University, 2006; Philosophiae Doctor, ibid., 2008 (2008)

Rachel S Novick. Assistant Professional Specialist, Biological Sciences; Assistant Professor of the Practice. Bachelor of Science, Cornell University, 1999; Master of Science, Yale University, 2002; Philosophiae Doctor, ibid., 2008 (2008)


Kenneth Oakes. Assistant Professor, Theology. Bachelor of Arts, Point Loma Nazarene University, 2002; BS Biology, ibid., 2002; MTS, Garrett-Evangelical Theological Seminary, 2004; Philosophiae Doctor, University of Aberdeen, 2009 (2014)

James Arthur O'Brien. Assistant Chair, Accountancy; Professional Specialist, Accountancy; Teaching Professor. Bachelor of Business Admin., University of Notre Dame, 1988; Juris Doctor, ibid., 1993 (1997)
Christopher Stuart O’Byrne. Associate Librarian, Library Law. Bachelor of Arts, Reed College, 1998; Master of Arts, University of Massachusetts, 2001; Juris Doctor, University of Washington, 2005 (2006)

John Patrick O’Callaghan. Associate Professor, Philosophy; Director, Marianita Center; Fellow, Nanovic Institute for European Studies. B.S. Physics, St. Norbert College, 1984; Master of Science, University of Notre Dame, 1986; Master of Arts, ibid., 1990; Philosophiae Doctor, ibid., 1996 (2003)


Paul Robert Ocobock. Assistant Professor, History; Fellow, Kellogg Institute for International Studies; Fellow, Joan B. Kroc Institute for International Peace; Concurrent Assistant Professor, Gender Studies. Bachelor of Arts, University of Michigan, 2002; Master of Philosophy, University of Oxford, 2004; Philosophiae Doctor, Princeton University, 2010 (2010)

Brian O’Conchubhair. Associate Professor, Irish Language and Literature; Director, Center for Study of Language & Culture. Bachelor of Arts in Education, Mary Immaculate College, 1991; Master of Arts, University College Galway, 1995; Master of Arts, Boston College, 1997; Philosophiae Doctor, National University of Ireland Galway, 2002 (2004)


David Kevin O’Connor. Associate Professor, Philosophy; Concurrent Associate Professor, Classics; Fellow, Nanovic Institute for European Studies. Bachelor of Arts, University of Notre Dame, 1980; Philosophiae Doctor, Stanford University, 1985 (1985)

Paulinus I. Odozor, C.S.C. Associate Professor, Theology. Bachelor of Sacred Theology, Bigard Memorial Seminary, 1984; Master of Theology, University of Toronto, 1989; Licentiate in Sacred Theology, University of St Michaels Coll, 1990; Doctor of Theology, University of Toronto, 1993 (2000)

Sayuri Oguchi. Assistant Professional Specialist, East Asian Languages and Cultures; Assistant Teaching Professor. Bachelor of Arts, Kobe University, 2000; Master of Arts, Purdue University, 2015 (2016)

Lisa Joy Oglesee. Assistant Professional Specialist, Center for Study of Language & Culture; Assistant Teaching Professor. Bachelor of Arts, Bethel College, 2002; Master of Arts, Indiana Univ-Bloomington, 2005 (2014)

Patricia Anne O’Hara. Professor, Law School; Fellow, Institute for Educational Initiatives. Bachelor of Arts, Santa Clara University, 1971; Juris Doctor, University of Notre Dame, 1974 (1981)

Susan C. Ohmer. Associate Professor, Film, Television, and Theatre; Concurrent Associate Professor, American Studies; William T. and Helen Kuhn Carey Associate Professor of Modern Communication. Bachelor of Arts, Ohio State University, 1976; Bachelor of Fine Arts, ibid., 1978; Master of Arts, New York University, 1984; Philosophiae Doctor, ibid., 1997 (1998)

Rahul Chandrashekhar Oka. Concurrent Assistant Professor, African and African American Studies; Assistant Professor, Anthropology; Fellow, Kellogg Institute for International Studies. Bachelor of Arts, Lawrence University, 2000; Master of Arts, University of Illinois-Chicago, 2001; Philosophiae Doctor, ibid., 2008 (2008)

Allen Grayson Oliver. Research Professor, Chemistry and Biochemistry. Bachelor of Science, University of Waikato, 1993; Master of Science, ibid., 1994; Philosophiae Doctor, ibid., 2000 (2008)

Maria R. Olivera-Williams. Professor, Romance Languages and Literatures; Fellow, Kellogg Institute for International Studies; Fellow, Nanovic Institute for European Studies. Bachelor of Arts, University Toledo, 1976; Master of Arts, Ohio State University, 1978; Philosophiae Doctor, ibid., 1983 (1982)

Mitchell Charles Olsen. Assistant Professor, Marketing. B.S. Business Administration, Indiana Univ-Bloomington, 2007; Master of Science, ibid., 2013 (2016)

T. Mark Olsen. Associate Professional Specialist, Biological Sciences. Bachelor of Arts (Latin), Saint Michael’s College, 1981; Master of Science, University of Notre Dame, 1989; Philosophiae Doctor, ibid., 1994 (1994)

Timothy Patrick O’Malley. Associate Professional Specialist, ND Center for Liturgy; Concurrent Assistant Professional Specialist, Theology. Bachelor of Arts, University of Notre Dame, 2004; Master of Theological Studies, ibid., 2006; Philosophiae Doctor, Boston College, 2010 (2004)


Atalia Omer. Associate Professor, Sociology. Bachelor of Arts, University of California Sta Barbara, 1998; Master of Arts, Harvard University, 2002; Philosophiae Doctor, ibid., 2008 (2008)

Kathleen C. Opel. Associate Professional Specialist, Off-Campus Programs. Bachelor of Arts, Pennsylvania State University, 1973; Master of Arts, Fairfield University, 1977 (1999)

Cyril J. O’Regan. The Catherine F. Huisking Professor of Theology; Professor, Theology. Bachelor of Arts, University College Dublin, 1974; Master of Arts, ibid., 1978; Master of Arts, Yale University, 1983; Master of Philosophy, ibid., 1984; Philosophiae Doctor, ibid., 1989 (1999)


James S. O’Rourke. Arthur F. & Mary J. O’Neil Director, Fanning Center Bus Comm; Professional Specialist, Management; Teaching Professor. Bachelor of Business Admin., University of Notre Dame, 1968; Master of Science, Temple University, 1970; Master of Arts, University of New Mexico Main, 1973; Philosophiae Doctor, Syracuse University, 1980 (1990)


Janet Lee O’Tousa. Associate Professional Specialist, Accountancy; Associate Teaching Professor. B.S. Biology, University California Irvine, 1975; Master of Business Admin, University of Notre Dame, 1988 (1988)

John Parkhill. Assistant Professor, Chemistry and Biochemistry. Bachelor of Science, University of Chicago, 2005; Bachelor of Science, ibid., 2005; Bachelor of Science, ibid., 2005; Bachelor of Science, ibid., 2005; Philosophy Doctor, University of California Berkeley, 2010 (2013)

Rachel Rivers Parroquin. Associate Professional Specialist, Romance Languages and Literatures; Associate Professor of the Practice, Romance Languages and Literatures. Bachelor of Arts, Valparaiso University, 1985; Bachelor of Science, ibid., 1985; Master of Education, ibid., 1990; Philosophy Doctor, Loyola University Chicago, 2008 (2010)

Jessica Payne. Associate Professor, Psychology; The Nancy O'Neill Assistant Professor of Psychology. Bachelor of Arts, University of San Diego, 1995; Master of Arts, Mount Holyoke College, 1999; Philosophy Doctor, University of Arizona, 2005 (2009)

Matthew Thomas Payne. Assistant Professor, Film, Television, and Theatre. Bachelor of Arts, Berry College, 2000; Master of Arts, University of Texas-Austin, 2006; Doctor of Philosophy, ibid., 2011 (2016)

Zhangli Peng. Assistant Professor. Bachelor of Science, Tong Ji University, 2004; Master of Science, Zhejiang Inst. of Technology, 2006; Philosophy Doctor, Univ. of California-San Diego, 2011 (2014)

Jeffrey W. Peng. Associate Professor, Chemistry and Biochemistry. Bachelor of Science, Cornell University, 1987; Philosophy Doctor, University of Michigan, 1993 (2003)

Jaime M Pensado. Fellow, Kellogg Institute for International Studies; Associate Professor, History. Bachelor of Arts, California State U Los Angeles, 1997; Master of Arts, ibid., 2000; Master of Arts, University of Chicago, 2002; Philosophy Doctor, ibid., 2008 (2008)

Troy Alexander Perkins. Assistant Professor, Biological Sciences; Concurrent Assistant Professor, Applied Computational Mathematics & Statistics. Bachelor of Arts, University Tennessee Knoxville, 2006; Philosophy Doctor, University of California Davis, 2011 (2014)

Margaret Rose Pfef. Fellow, Joan B. Kroc Institute for International Peace; Associate Professional Specialist, Theology; Associate Teaching Professor, Theology. Bachelor of Arts, University of Notre Dame, 1987; Master of Theological Studies, Weston School of Theology, 1994; Master of Arts, University of Notre Dame, 1997; Philosophy Doctor, ibid., 2000 (2002)

Michael Pfrender. Associate Professor, Biological Sciences. Bachelor of Science, University of Michigan, 1988; Master of Science, ibid., 1992; Philosophy Doctor, University of Oregon, 1998 (2009)

William Anthony Phillip. Assistant Professor, Chemical and Biomolecular Engineering. Bachelor of Science, University of Notre Dame, 2004; Philosophy Doctor, University of Minnesota, 2009 (2011)

Lara Arielle Phillips. Research Assistant Professor, Physics. Bachelor of Science, McGill University, 1996; Philosophy Doctor, Princeton University, 2003 (2009)

David Phillips. Research Assistant Professor, Lab for Economic Opportunities. Bachelor of Arts, Butler University, 2007; Master of Arts, Georgetown University, 2009; Doctor of Philosophy, ibid., 2012 (2016)

James Daniel Philpott. Professor, Political Science; Fellow, Kellogg Institute for International Studies; Concurrent Professor, Law School. Bachelor of Arts, University of Virginia, 1989; Master of Arts, Harvard University, 1991; Philosophy Doctor, ibid., 1996 (2001)

Alessandro Pierattini. Assistant Professor, School of Architecture. Bachelor of Architecture, Roma Tre University, 2002; Master of Architecture, ibid., 2005 (2015)

Richard B. Pierce. Associate Professor, History; Concurrent Associate Professor, American Studies. Bachelor of Arts, Valparaiso University, 1985; Master of Arts, University of Wisconsin-Milwaukee, 1988; Philosophy Doctor, Indiana Univ-Bloomington, 1996 (1996)


Anne Bernadette Pilkington. Associate Professional Specialist, Mathematics; Assistant Professor of Practice, Mathematics. Bachelor of Arts, University College Dublin, 1984; Master of Arts, ibid., 1985; Philosophy Doctor, University of Notre Dame, 1991 (2009)

Anand Pillay. The William J. Hank Family Professor of Mathematics; Professor, Mathematics. Bachelor of Arts, Balliol College Oxford, 1973; Master of Science, King’s College, 1974; Philosophy Doctor, Bedford College, 1977 (2013)
Dianne M. Pinderhughes. Professor, African and African American Studies; Concurrent Professor, American Studies; Concurrent Professor, Political Science; Department Chair, African and African American Studies. Bachelor of Arts, Alberus Magnus College, 1969; Master of Arts, University of Chicago, 1973; Philosophiae Doctor, ibid., 1977 (2006)


Claudia Polini. Professor, Mathematics. Bachelor of Science, University of Padua, 1990; Philosophiae Doctor, Rutgers University, 1995 (2001)

Pierpaolo Polzonetti. Concurrent Associate Professor, Music; Professor, Program of Liberal Studies. Bachelor of Arts (Latin), University of Rome, 1995; Master of Arts, Cornell University, 2001; Philosophiae Doctor, ibid., 2003 (2006)

Janice Marie Poorman. Director of Formation and Field Education; Professional Specialist, Theology. Bachelor of Science, Southern Illinois University at Carbondale, 1976; Master of Arts, University of Notre Dame, 1988; Philosophiae Doctor, ibid., 1996 (1993)

Wolfgang Porod. Frank M. Freimann Professor of Electrical Engineering; Professor, Electrical Engineering. Master of Science, University of Graz, 1979; Philosophiae Doctor, ibid., 1981 (1986)

Jean Porter. John A. O’Brien Professor of Theology; Professor, Theology. Bachelor of Arts, University of Texas-Austin, 1976; Master of Divinity, Weston School of Theology, 1980; Master of Arts, Yale University, 1981; Philosophiae Doctor, ibid., 1984 (1990)

Natalie Porter. Assistant Professor, Anthropology; Fellow, Kellogg Institute for International Studies. Bachelor of Arts, University of California Santa Barbara, 2002; Master of Arts, University of Wisconsin-Madison, 2006; Philosophiae Doctor, ibid., 2012 (2015)

Emilia Justyna Powell. Fellow, Kellogg Institute for International Studies; Fellow, Joan B. Kroc Institute for International Peace; Concurrent Assistant Professor, Law School; Associate Professor, Political Science. Master of Law, Copernicus University, 2001; Master of Arts, Florida State University, 2003; Philosophiae Doctor, ibid., 2006 (2011)


Joseph Michael Powers. Professor, Aerospace and Mechanical Engineering; Concurrent Professor, Applied Computational Mathematics & Statistics; Associate Chair, Aerospace and Mechanical Engineering. Bachelor of Science, University of Illinois Urbana-Champaign, 1983; Master of Science, ibid., 1985; Philosophiae Doctor, ibid., 1988 (1989)

Gerard Francis Powers. Professional Specialist, Joan B. Kroc Institute for International Peace; Professor of the Practice, Catholic Peacebuilding; Director, Catholic Peacebuilding Studies. Bachelor of Arts (Latin), Princeton University, 1980; Juris Doctor, University of Notre Dame, 1986; Master of Arts, ibid., 1988 (2004)

Thomas Gregory Pratt. Research Professor, Electrical Engineering. Bachelor of Science, University of Notre Dame, 1985; Master of Science, Georgia Institute of Technology, 1989; Philosophiae Doctor, ibid., 1999 (2008)

Christopher Daniel Pratt. Professor of Military Science. Bachelor of Arts, Canisius College, 1996; Master of Science, Naval Postgraduate School, 2009 (2015)

Ava Preacher. Associate Professional Specialist, Office of Arts & Letters Undergraduate Study; Concurrent Associate Professional Specialist, Film, Television, and Theatre; Assistant Dean, Arts and Letters Office for Undergraduate Studies. Bachelor of Arts, University of Iowa, 1975; Master of Arts, ibid., 1981 (1989)

Lynette Anne Prezyna. Associate Professional Specialist, College of Science. B.S. Chemistry, Daemen College, 1987; Master of Science, Rensselaer Polytechnic Institute, 1989; Philosophiae Doctor, ibid., 1993 (2010)

Michael Jason Pries. Associate Professor, Department of Economics. Bachelor of Arts, University of Notre Dame, 1993; Philosophiae Doctor, Stanford University, 1999 (2007)

Linda Przybyszewski. Associate Professor, History. Bachelor of Arts, Northwestern University, 1984; Master of Arts, Stanford University, 1986; Philosophiae Doctor, ibid., 1989 (2005)

Sylwia Ptasinska. Tom and Carolyn Marquez Assistant Professor of Biophysics; Concurrent , First Year of Studies; Associate Professor, Physics. Master of Science, Marie Curie-Sklodowska University, 2001; Philosophiae Doctor, University of Innsbruck, 2004 (2010)


Thomas Andrew Putman. Professor, Mathematics. Bachelor of Science, Mathematics, Rice University, 2002; Philosophiae Doctor, University of Chicago, 2007 (2016)

Jason Quinn. Research Assistant Professor, Joan B. Kroc Institute for International Peace. Bachelor of Arts, University of Memphis, 2001; Master of Arts, ibid., 2003; Philosophiae Doctor, University of North Texas, 2010 (2012)

Benjamin Radcliff. Professor, Political Science. Bachelor of Arts, University of Illinois-Urbana-Champaign, 1984; Master of Arts, ibid., 1986; Philosophiae Doctor, ibid., 1991 (1991)

Andrew Joseph Radde-Gallwitz. Assistant Professor, Program of Liberal Studies; Concurrent Assistant Professor, Theology. Bachelor of Arts, David Lipscomb College, 2000; Master of Arts in Theological Studies, Duke University, 2002; Philosophiae Doctor, Emory University, 2007 (2014)

Marco Radeschi. Assistant Professor, Mathematics. Bachelor of Mathematics, Polytechnic Institute of Turin, 2006; University of Turin, M.S. Mathematics, 2008; Philosophiae Doctor, Mathematics, Univ. of Pennsylvania, 2012 (2017)

Gabriel Allen Radvansky. Professor, Psychology. Bachelor of Arts, Cleveland State University, 1987; Master of Arts, Michigan State University, 1989; Philosophiae Doctor, ibid., 1992 (1993)

Evan Ralph Ragland. Assistant Professor, History; Fellow, Nanovic Institute for European Studies. Bachelor of Science, Hillsdale College, 2003; Master of Arts, Indiana University-Bloomington, 2007; Philosophiae Doctor, ibid., 2012 (2015)

Claudiu Raicu. Assistant Professor, Mathematics. B.S. Mathematics, University of Bucharest, 2007; Philosophiae Doctor, University of California Berkeley, 2011 (2014)
To Table of Contents

Faculty


Ricardo Ramirez. Associate Professor, Political Science; Interim Director, Hesburgh Program. Bachelor of Arts, UCLA, 1995; Master of Arts, Stanford University, 2001; Philosophiae Doctor, ibid., 2002 (2010)

Samuel Joseph Ranzilla. Associate Professional Specialist, Accountancy; Teaching Professor. Bachelor of Science, University of Detroit, 1978 (2015)

Rory Rapple. Associate Professor, History; Fellow, Nanovic Institute for European Studies. Bachelor of Arts, Trinity College, 1997; Master of Philosophy, University of Cambridge, 1998; Philosophiae Doctor, ibid., 2002 (2007)

Kali P. Rath. Associate Professor, Department of Economics. Master of Arts, Utkal University, 1979; Master of Arts, Johns Hopkins University, 1988; Philosophiae Doctor, ibid., 1992 (1990)

Matthew J. Ravosa. Professor, Biological Sciences; Concurrent Professor, Anthropology. Bachelor of Arts, University of Rochester, 1983; Master of Arts, Northwestern Univ. - Chicago, 1986; Philosophiae Doctor, ibid., 1989 (2011)

Michael Cannon Rea. Professor, Philosophy; Director, Center for Philosophy of Religion. Bachelor of Arts, UCLA, 1991; Master of Arts, University of Notre Dame, 1994; Philosophiae Doctor, ibid., 1996 (2000)

Alisha Jacqueline Reaves. Assistant Professional Specialist, Romance Languages and Literatures; Assistant Teaching Professor. Bachelor of Science, Tulane University, 2006; Master of Arts, George Washington University, 2009 (2016)

Jason Robert Reed. Assistant Professional Specialist, Finance; Assistant Teaching Professor. Bachelor Degree - Unspecified, Grand Valley State University, 2005; Bachelor of Science, ibid., 2005; Bachelor of Arts, ibid., 2005; Master of Arts, Wayne State University, 2010; Philosophiae Doctor, ibid., 2015 (2015)


Patrick M. Regan. Professor, Political Science; Associate Director, ND Environmental Change Initiative. Bachelor of Science, Western Michigan University, 1981; Master of Arts, New York University, 1986; Philosophiae Doctor, University of Michigan, 1992 (2012)

Stephen J Reifenberg. Fellow, Joan B. Kroc Institute for International Peace; Concurrent Associate Professional Specialist, Political Science; Associate Professional Specialist, Kellogg Institute for International Studies; Associate Professor of the Practice; Executive Director, Kellogg Institute for International Studies. Bachelor of Arts, University of Notre Dame, 1981; Master of Science, Boston University, 1986; Master of Public Affairs, Harvard University, 1988 (2010)

Emily Ann Remus. Assistant Professor, History. Bachelor of Arts, Swarthmore College, 2006; Master of Arts, University of Chicago, 2007; Philosophiae Doctor, ibid., 2014 (2015)

Robert Mark Rennie. Research Associate Professor, Aerospace and Mechanical Engineering, B.S. Engineering Physics, Queen’s University, 1987; M.S. Aerospace Engr, University of Notre Dame, 1994; Philosophiae Doctor, ibid., 1996 (2004)

Terrence W. Rettig. Professor, Physics. Bachelor of Arts, Defiance College, 1968; Master of Science, Ball State University, 1970; Master of Arts, Indiana University, 1972; Philosophiae Doctor, Indiana Univ-Bloomington, 1976 (1983)

Luc Henri Reydams. Associate Professional Specialist, Political Science; Associate Professor of the Practice; Fellow, Kellogg Institute for International Studies; Fellow, Nanovic Institute for European Studies. Legum Magister, University of Notre Dame, 1995; Juridicae Scientiae Doctor, ibid., 2001 (1997)

Gretchen J. Reydams-Schils. Professor, Program of Liberal Studies; Concurrent Professor, Theology; Concurrent Professor, Classics. Bachelor of Arts, Katholieke University Te Leuven, 1987; Master of Arts, University of Cincinnati, 1989; Philosophiae Doctor, University of California Berkeley, 1994 (1994)

Gabriel S. Reynolds. Professor, Theology. Bachelor of Arts, Columbia University, 1994; Master of Arts, Yale University, 2001; Master of Philosophy, ibid., 2001; Philosophiae Doctor, ibid., 2003 (2003)

Robin Francis Rhodes. Associate Professor, Art, Art History, and Design; Concurrent Associate Professor, School of Architecture. Fellow, Nanovic Institute for European Studies. Bachelor of Arts, UNC at Chapel Hill, 1974; Philosophiae Doctor, ibid., 1984 (1996)

David N. Ricchiute. The Deloitte & Touche Professor of Accountancy; Professor, Accountancy. Bachelor of Science, Bryant College, 1970; Master of Science, University of Kentucky, 1974; Doctorate of Bus. Admin., ibid., 1977 (1977)

Alison Rice. Associate Professor, Romance Languages and Literatures; Concurrent Associate Professor, Gender Studies; Fellow, Joan B. Kroc Institute for International Peace. Bachelor of Arts, Loma Linda University La Sierra, 1996; Master of Arts, California State U Los Angeles, 1999; Philosophiae Doctor, UCLA, 2003 (2005)

Karen Ellen Richman. Professional Specialist, Institute for Latino Studies; Director, Border and Inter-American Affairs, Institute for Latino Studies; Concurrent Associate Professional Specialist, Romance Languages and Literatures; Concurrent Associate Professional Specialist, Anthropology; Fellow, Kellogg Institute for International Studies. Bachelor of Arts, Wesleyan University, 1978; Master of Arts, University of Virginia, 1981; Philosophiae Doctor, ibid., 1992 (2007)

David Richter. Concurrent, Civil & Environmental Engineering & Earth Sciences; Assistant Professor, Civil & Environmental Engineering & Earth Sciences. Bachelor of Science, University of Massachusetts, 2006; M.S. Mechanical Engr, Stanford University, 2007; Philosophiae Doctor, ibid., 2011 (2013)


Laurel Riek. Assistant Professor, Computer Science and Engineering. Bachelor of Science, Carnegie Mellon University, 2000; Philosophiae Doctor, University of Cambridge, 2011 (2011)

Kenneth F. Ripple. Professor, Law School. Bachelor of Arts, Fordham University, 1965; Juris Doctor, University of Virginia, 1968; Master of Law, George Washington University, 1972 (1977)

Daniel John Robertson. Research Assistant Professor, Physics. Masters of Science, University of Surrey, 2003; Master of Science, University of Notre Dame, 2005; Philosophiae Doctor, ibid., 2010 (2010)
Denis Jean-Jacques Robichaud. Assistant Professor, Program of Liberal Studies; Concurrent Assistant Professor, Romance Languages and Literatures. Bachelor of Arts, Concordia University, 2005; Master of Arts, Johns Hopkins University, 2010; Master of Arts, ibid., 2010; Master of Arts, ibid., 2010; Master of Arts, ibid., 2011 (2011)

Jennifer Diane Robichaud. Associate Professional Specialist, Biological Sciences; Assistant Teaching Professor; Associate Teaching Professor, Biological Sciences. Bachelor of Arts, Coll of St. Scholastica, 1995; Master of Science, University of Georgia, 1997 (2009)


Adrian V. Rocha. Concurrent, Civil & Environmental Engineering & Earth Sciences; Assistant Professor, Biological Sciences. Bachelor of Science, CA State Univ. Monterey Bay, 2001; Master of Science, Ohio State University, 2003; Philosophiae Doctor, University California Irvine, 2008 (2012)

Mark William Roche. Rev. Edmund Joyce, C.S.C., Professor of German Language and Literature; Professor, German and Russian Languages and Literature; Concurrent Professor, Philosophy; Fellow, Nanovic Institute for European Studies. Bachelor of Arts, Williams College, 1978; Master of Arts, Eberhard Karl University of Tübingen, 1980; Philosophiae Doctor, Princeton University, 1984 (1996)

Daniel Blake Roche. Assistant Professor, Philosophy. Bachelor of Arts, Wheaton College, 2002; Master of Arts, Northern Illinois University, 2008; Philosophiae Doctor, Rutgers State University of NJ, 2013 (2013)

Ryan K. Roeder. Professor, Aerospace and Mechanical Engineering. Bachelor of Science, Purdue University, 1994; Philosophiae Doctor, ibid., 1999 (2001)

Kimberly Ann Rollings. Assistant Professor, School of Architecture; Concurrent Assistant Professor, Psychology. Bachelor of Architecture, University of Notre Dame, 2003; Master of Science, Cornell University, 2010; Philosophiae Doctor, ibid., 2013 (2013)

Jeanne Romero-Severson. Professor, Biological Sciences. Bachelor of Science, University of Wisconsin-Madison, 1974; Master of Science, ibid., 1975; Philosophiae Doctor, ibid., 1984 (1997)


Sebastian Rosato. Associate Professor, Political Science; Fellow, Joan B. Kroc Institute for International Peace. Bachelor of Arts, University of Cambridge, 1994; Master of Philosophy, University of Oxford, 1996; Master of Arts, University of Chicago, 2000; Philosophiae Doctor, ibid., 2006 (2006)


Nathan Scott Rose. Assistant Professor, Psychology. Bachelor of Science, Aquinas College, 2003; Master of Arts, Washington University, 2007; Doctor of Philosophy, ibid., 2010 (2016)

Robert Jason Rosenbaum. Assistant Professor, Applied Computational Mathematics & Statistics. Bachelor of Science, University of Houston, 2006; M.S. Mathematics, ibid., 2008; Philosophiae Doctor, ibid., 2011 (2014)

Joseph Rosenberg. Assistant Professional Specialist, Program of Liberal Studies; Fellow, Nanovic Institute for European Studies; Assistant Professor of the Practice, Liberal Studies. Bachelor of Arts, Dalhousie University Halifax, 2001; Master of Arts, Queen’s University, 2002; Philosophiae Doctor, Trinity Hall Cambridge, 2008 (2011)


Deborah Lynn Rotman. Associate Professional Specialist, CUSE-Ctr Undergrad Scholarly Enggmt. Bachelor of Arts, Grand Valley State University, 1993; Master of Arts, Western Michigan University, 1995; Philosophiae Doctor, University of Massachusetts Bo, 2001 (2006)


Ingrid Drake Rowland. Professor, School of Architecture. Bachelor of Arts, Pomona College, 1974; Master of Arts, Bryn Mawr College, 1976; Philosophiae Doctor, ibid., 1980 (2005)

David F. Ruccio. Professor, College of Arts and Letters. Bachelor of Arts, Bowdoin College, 1976; Philosophiae Doctor, University of Massachusetts, 1984 (1982)

Randal C. Ruchti. Professor, Physics. Bachelor of Science, University of Wisconsin-Madison, 1968; Master of Science, University of IL Urbana-Champaign, 1970; Philosophiae Doctor, Michigan State University, 1973 (1977)

Kristin Joy Rudenga. Assistant Professional Specialist, Kaneb Center for Teaching and Learning; Concurrent Assistant Professional Specialist, First Year of Studies. Bachelor of Science, Purdue University, 2005; Bachelor of Arts, ibid., 2005; Master of Philosophy, Yale University, 2008; Philosophiae Doctor, ibid., 2012 (2014)


Jason Michael Ruiz. Associate Professor, American Studies; Concurrent Associate Professor, Gender Studies; Director of Undergraduate Studies, American Studies. Bachelor of Arts, University of Minnesota, 2001; Philosophiae Doctor, ibid., 2008 (2008)

Nicholas Vincent Russo. Associate Professional Specialist, Office of Arts & Letters Undergraduate Study; Assistant Dean; Concurrent Associate Professional Specialist, College Seminar - Arts & Letters; Concurrent Associate Professional Specialist, Theology. Bachelor of Arts, University of Virginia, 1998; Master of Arts, University of Notre Dame, 2002; Philosophiae Doctor, ibid., 2009 (2011)

Michael Barry Ryan. Assistant Professional Specialist, College of Engineering; Assistant Dean of Academic Affairs, College of Engineering. Bachelor of Science in Aerospace Engineering, University of Notre Dame, 1985; Naval Postgraduate School, 1993 (2015)

Maura Anne Ryan. Associate Provost and Vice President for Faculty Affairs; Associate Professor, Theology. Bachelor of Arts, St. Bonaventure University, 1979; Master of Arts, Boston College, 1987; Master of Philosophy, Yale University, 1990; Philosophiae Doctor, ibid., 1993 (1993)

Salma Saddawi. Professional Specialist, Chemical and Biomolecular Engineering. Bachelor of Science, University of Baghdad, 1977; Master of Science, Technical University of Warsaw, 1984; Philosophiae Doctor, ibid., 1989 (1996)

Hirotaka Sakaue. Associate Professor, Aerospace and Mechanical Engineering. Bachelor of Science in Aerospace Engineering, Tokyo Institute of Technology, 1996; Master of Engineering, Purdue University, 1999; Philosophiae Doctor, ibid., 2003 (2015)

Philip J. Sakimoto. Professional Specialist, First Year of Studies. Bachelor of Arts, Pomona College, 1976; Master of Arts, University of Southern California, 1979; Philosophiae Doctor, ibid., 1985 (2005)

Samantha Lynn Salden Teach. Assistant Professional Specialist, School of Architecture; Assistant Dean of the Graduate Programs, School of Architecture; Fellow, Nanovic Institute for European Studies; Assistant Professor of the Practice, School of Architecture. Bachelor of Architecture, University of Notre Dame, 2002; Master of Architecture, ibid., 2008 (2008)


Kevin John Sandberg. Concurrent Assistant Professional Specialist, Theology; Assistant Professional Specialist, Center for Social Concerns. Bachelor of Arts, University of Notre Dame, 1988; Master of Arts, Jesuit School of Theology, 1994; Master of Divinity, University of Notre Dame, 2004; Philosophiae Doctor, Fordham University, 2014 (2014)


Ken David Sauer. Associate Professor, Electrical Engineering. Bachelor of Science in Electrical Engineering, Purdue University, 1984; Master of Science, Purdue University, 1985; Master of Arts, Princeton University, 1987; Philosophiae Doctor, ibid., 1989 (1989)

Valerie L. Sayers. Professor, English; Concurrent Professor, American Studies. Bachelor of Arts, Fordham University, 1973; Master of Fine Arts, Columbia University, 1976 (1993)

Thomas F. Schafer. The KPMG Chair in Accountancy; Professor, Accountancy. Bachelor of Arts, Northern Illinois University, 1974; Master of Accounting Science, University of Illinois Urbana-Champaign, 1976; Philosophiae Doctor, ibid., 1982 (1998)

Jennifer Lyn Schafer. Assistant Professor, Chemical and Biomolecular Engineering. Master of Engineering, Widener University, 2008; Bachelor of Science, ibid., 2008; Philosophiae Doctor, Cornell University, 2014 (2015)


Zachary Thomas Schafer. Associate Professor, Biological Sciences; Coleman Foundation Associate Professor of Cancer Biology. Bachelor of Science, University of Notre Dame, 2001; Philosophiae Doctor, Duke University, 2006 (2009)

Walter J. Scheirer. Assistant Professor, Computer Science and Engineering. Bachelor of Science in Computer Science, Lehigh University, 2004; Master of Engineering, ibid., 2006; Philosophiae Doctor, University of Colorado, 2009 (2015)


Daniel Schlosberg. Assistant Professional Specialist, Music; Fellow, Nanovic Institute for European Studies; Assistant Professor of the Practice. Bachelor of Arts, Johns Hopkins University, 2000; Bachelor of Music, Peabody Inst. of John Hopkins, 2000; Master of Music, ibid., 2001; Doctor of Musical Arts, SUNY at Stony Brook, 2005 (2005)


James Patrick Schmiedler. Associate Professor, Aerospace and Mechanical Engineering. Bachelor of Science, University of Notre Dame, 1996; Master of Science, Ohio State University, 1998; Philosophiae Doctor, ibid., 2001 (2008)

Robert P. Schmuhl. The Walter H. Annenberg-Edmund P. Joyce Professor of American Studies and Journalism; Professor, American Studies; Director, John W. Gallivan Program in Journalism, Ethics & Democracy; Kogos- Naughton Institute Faculty Fellow. Bachelor of Arts, University of Notre Dame, 1970; Master of Arts, Indiana Univ-Bloomington, 1978; Philosophiae Doctor, ibid., 1978 (1980)

William Frederick Schneider. Professor, Chemical and Biomolecular Engineering; Concurrent Professor, Chemistry and Biochemistry. B.S. Chemistry, University of Michigan-Dearborn, 1986; Philosophiae Doctor, Ohio State University, 1991 (2004)

Ilaria Maria Franca Schnyder von Wartensee. Research Assistant Professor, Kellogg Institute for International Studies. Philosophiae Doctor, Bocconi University, 2009 (2014)

Christopher John Schommer-Pries. Assistant Professor, Mathematics. Master Degree - Unspecified, Harvey Mudd College, 2003; Philosophiae Doctor, University of California Berkeley, 2009 (2016)

Jeffrey S. Schorey. George Craig, Jr. Collegiate Professor of Biological Sciences; Professor, Biological Sciences. Bachelor of Science, Southeast Missouri St University, 1985; Philosophiae Doctor, University of Texas-San Antonio, 1991 (1998)

Michael John Schreffler. Associate Professor, Art, Art History, and Design. Bachelor of Arts, University of Virginia, 1989; Master of Arts, Arizona State University, 1994; Philosophiae Doctor, University of Chicago, 2000 (2015)

Paul H. Schultz. John W. and Maude Clarke Professor of Finance; Professor, Finance. Bachelor of Arts, Macalester College, 1978; Master of Business Admin, University of Chicago, 1985; Philosophiae Doctor, ibid., 1988 (1998)

Zachary Dale Schultz. Associate Professor, Chemistry and Biochemistry. Bachelor of Science, Ohio State University, 2000; Philosophiae Doctor, University of IL Urbana-Champaign, 2005 (2009)

Robert A. Schulz. The Notre Dame Professor of Biological Sciences; Professor, Biological Sciences. B.A. Chemistry, UNC at Chapel Hill, 1976; Philosophiae Doctor, Georgetown University, 1981 (2007)

Mark Richard Schurr. Professor, Anthropology. Bachelor of Science, Purdue University, 1977; Philosophiae Doctor, Indiana Univ-Bloomington, 1989 (1991)


Roy William Scraton. Assistant Professor, English. Bachelor of Arts, The New School, 2008; Master of Arts, ibid., 2010; Philosophiae Doctor, Princeton University, 2016 (2016)


Alan C. Seabaugh. Director of the Midwest Institute for Nanoelectronics Discovery; Professor, Electrical Engineering; Frank M. Freimann Chaired Professor of Electrical Engineering. Bach of Sci in Electrical Eng, University of Virginia, 1977; M.S. Electrical Engs, ibid., 1979; Philosophiae Doctor, ibid., 1985 (1999)

James Herbert Seckinger. Professor, Law School. Bachelor of Science, Saint John's University, 1964; Master of Science, Vanderbilt University, 1968; Juris Doctor, University of Notre Dame, 1968 (1974)


James A. Seida. Associate Professor, Accountancy. Bachelor of Science, Arizona State University, 1989; Master of Science, University of IL Urbana-Champaign, 1990; Philosophiae Doctor, Texas A&M University, 1997 (2001)

Dayle Seidenspinner-Nunez. Professor, Romance Languages and Literatures. Bachelor of Arts, University of California Berkeley, 1968; Master of Arts, ibid., 1971; Philosophiae Doctor, Stanford University, 1977 (1997)

Steven Wayne Semes. Director of Graduate Studies for the Historic Preservation Program, School of Architecture; Professor, School of Architecture. Bachelor of Science, University of Virginia, 1975; Master of Architecture, Columbia University, 1980 (2005)


Satyajyoti Senapati. Research Assistant Professor, Chemical and Biomolecular Engineering. Philosophiae Doctor, University of Pune, 2006 (2006)

Anthony S. Serianni. Professor, Chemistry and Biochemistry. Bachelor of Science, Albright College, 1975; Philosophiae Doctor, Michigan State University, 1980 (1982)

David William Severson. Professor, Biological Sciences. Associate in Arts, Rochester Community College, 1970; Bachelor of Arts, Winona State University, 1975; Master of Science, University Wisconsin La Crosse, 1978; Philosophiae Doctor, University of Wisconsin-Madison, 1983 (1997)

Slavi Christov Sevov. Professor, Chemistry and Biochemistry. Bachelor of Science, University of Sofia, 1983; Master of Science, ibid., 1985; Philosophiae Doctor, Iowa State University, 1993 (1995)

Sunny S Shah. Assistant Professional Specialist, College of Engineering. Bachelor of Science, University California Davis, 2006; Philosophiae Doctor, ibid., 2011 (2013)

Andrea Smith Shappell. Concurrent Associate Professor, Theology; Associate Professor, Specialist, Center for Social Concerns. Bachelor of Arts, University of Notre Dame, 1979; Master of Theology, ibid., 1985 (1997)

Mei-Chi Shaw. Professor, Mathematics. Bachelor of Science, National Taiwan University, 1977; Master of Science, Princeton University, 1978; Philosophiae Doctor, ibid., 1981 (1987)


Susan Guise Sheridan. Associate Professor, Anthropology. Bachelor of Arts, University of Maryland, 1984; Master of Arts, ibid., 1986; Philosophiae Doctor, University of Colorado-Boulder, 1992 (1992)

John Francis Sherry. Ray W. and Kenneth G. Herrick Professor of Marketing; Professor, Marketing; Concurrent Professor, Anthropology; Fellow, Kellogg Institute for International Studies; Fellow, Joan B. Kroc Institute for International Peace; Fellow, Nanovic Institute for European Studies. Bachelor of Arts, University of Notre Dame, 1974; Master of Arts, University of IL Urbana-Champaign, 1978; Doctor of Philosophy, ibid., 1983 (2005)

Zonggao Shi. Research Assistant Professor, Chemistry and Biochemistry. Master of Science, Suzhou University, 1995; Philosophiae Doctor, Fudan University, 2001 (2011)

Yiyu Shi. Associate Professor, Computer Science and Engineering. Philosophiae Doctor, UCLA, 2009; Bachelor of Engineering, Tsinghua University, 2015 (2015)

Christopher J. Shields. Professor, Philosophy; George N. Shuster Chair in Philosophy; Concurrent Professor, Classics; Fellow, Nanovic Institute for European Studies. Bachelor of Arts, Bowling Green State University, 1979; Master of Arts, ibid., 1981; Master of Arts, Cornell University, 1984; Philosophiae Doctor, ibid., 1986 (2014)
Scott Shim. Professor, Art, Art History, and Design. Bachelor of Fine Arts, University of Illinois-Chicago, 1995; Master of Arts, Ohio State University, 1997 (2016)

Sophie Anne Shive. Associate Professor, Finance. Bachelor of Science, Cornell University, 1998; Master of Science, ibid., 2000; Philosophiae Doctor, University of Michigan, 2005 (2005)

Kristin Shadrer-Frechette. O’Neill Family Professor of Philosophy; Professor, Philosophy; Concurrent Professor, Biological Sciences; Fellow, Joan B. Kroc Institute for International Peace. Bachelor of Arts, Xavier University, 1967; Philosophiae Doctor, University of Notre Dame, 1971 (1998)

Gina Venice Shrophshire. Concurrent Assistant Professional Specialist, First Year of Studies; Assistant Professional Specialist, Management. Bachelor of Arts, University of Notre Dame, 1983; Master of Arts, Purdue University, 1993; Philosophiae Doctor, ibid., 1999 (1998)

Joshua Shroult. Associate Professor, Civil & Environmental Engineering & Earth Sciences; Concurrent Associate Professor, Biological Sciences. Bachelor of Science, Northwestern University, 1994; Master of Science, Marquette University, 1998; Philosophiae Doctor, University of Iowa, 2002 (2007)

Sara Elizabeth Sievers. Associate Professional Specialist, Keough School of Global Affairs; Associate Dean for Policy and Practice, Keough School of Global Affairs; Fellow, Kellogg Institute for International Studies. Bachelor Degree - Unspecified, Harvard University, 1990; Master of Business Admin, Massachusetts Institute of Tec, 1997 (2015)


Anna Maria Simon. Assistant Professor, Physics. Master of Science, Jagellonian University, 2006; Philosophiae Doctor, ibid., 2010 (2014)


Antonio Simonetti. Associate Professor, Civil Engineering and Geological Sciences. Bachelor of Science, McGill University, 1987; Master of Science, ibid., 1989; Philosophiae Doctor, Carleton University Ottawa, 1994 (2008)

Stefanie Simonetti. Assistant Professional Specialist, Civil & Environmental Engineering & Earth Sciences. Bachelor of Science, Eberhard Karl University of Tubingen, 1993; Master of Science, ibid., 1996; Philosophiae Doctor, McGill University, 2002 (2011)

Marcy Lynn Simons. Assistant Librarian, Hesburgh Libraries. Bachelor of Arts, Indiana University South Bend, 1997; Master Degree - Unspecified, ibid., 2002; Master in Library Science, Indiana-Purdue University Indpls, 2008 (1988)

Eric Russell Sims. Associate Professor, Department of Economics; Michael P. Grace II Associate Professor of Economics. Bachelor of Arts, Trinity University, 2003; Master of Arts, University of Michigan, 2006; Philosophiae Doctor, ibid., 2009 (2009)


Scott Thomas Small. Research Assistant Professor, Biological Sciences. Bachelor of Science, University of Wisconsin-Steven, 2002; Philosophiae Doctor, University of Georgia, 2009 (2016)

Roxana Smarandache. Associate Professor, Mathematics. Bachelor of Science, University of Bucharest, 1996; Master of Science, University of Notre Dame, 1997; Philosophiae Doctor, ibid., 2001 (2012)

Christian Smith. The William R. Kenan Jr. Professor of Sociology; Professor, Sociology; Concurrent Professor, Theology; Fellow, Kellogg Institute for International Studies; Director, Center for Study of Religion and Society. Bachelor of Arts, Gordon College, 1983; Master of Arts, Harvard University, 1990; Philosophiae Doctor, ibid., 1990 (2006)


David Alan Smith. Professor, Psychology. Bachelor of Arts, University of Minnesota, 1983; Master of Arts, ibid., 1986; Philosophiae Doctor, SUNY at Stony Brook, 1991 (1997)


Bradley Dennis Smith. Emil T. Hofman Professor of Chemistry and Biochemistry. Professor, Chemistry and Biochemistry. Bachelor of Science, University of Melbourne, 1983; Philosophiae Doctor, Pennsylvania State University, 1988 (1991)

Peter Howard Smith. Professor, Music; Fellow, Nanovic Institute for European Studies; Department Chair, Music. Bachelor of Music, The Juilliard School, 1986; Master of Music, ibid., 1986; Master of Arts, Yale University, 1987; Master of Philosophy, ibid., 1989; Philosophiae Doctor, ibid., 1992 (1991)

Vania Smith. Associate Professor, Anthropology; Director of Graduate Studies, Anthropology. Bachelor of Arts, Lawrence University, 1998; Master of Arts, University of Florida, 2001; Philosophiae Doctor, University of Illinois-Chicago, 2006 (2006)

Brian James Smith. Assistant Professional Specialist, Civil & Environmental Engineering & Earth Sciences. Bach of Sci in Civil Engr, University of Notre Dame, 2001; M.S. Civil Engr, Georgia Institute of Technol, 2002; Philosophiae Doctor, University of Notre Dame, 2013 (2012)

Cody Jean Smith. Elizabeth and Michael Gallagher Family Assistant Professor in Adult Stem Cell Research; Assistant Professor, Biological Sciences. B.S. Biology, Mercyhurst College, 2007; Philosophiae Doctor, Vanderbilt University, 2012 (2016)

Robert Owen Smith. Concurrent Assistant Professional Specialist, Keough School of Global Affairs; Concurrent Assistant Professional Specialist, Theology; Assistant Professional Specialist, Jerusalem; Academic Director. Bachelor of Philosophy, Oklahoma State University, 1998; Master of Divinity, Luther Theological Seminary, 2003; Doctor of Philosophy, Baylor University, 2010 (2014)

Michelle Kimberly Smith Ware. Assistant Professional Specialist, First Year of Studies. Bachelor of Science, Xavier University, 2002; Master of Science, Springfield College, 2004 (2011)

Brian Brendan Smyth. Professor, Mathematics. Bachelor of Science, National University of Ireland Dublin, 1961; Master of Science, ibid., 1962; Philosophiae Doctor, Brown University, 1966 (1966)


Cheryl K. Snay. Assistant Professional Specialist, Suite Museum; Curator of European Art. Bachelor of Arts, Oakland University, 1987; Master of Arts, Michigan State University, 1991; Philosophiae Doctor, Pennsylvania State University, 2000 (2010)

Orlando Carter Snead. Professor, Law School; The William P. and Hazel B. White Director, Center for Ethics and Culture. Bachelor of Arts, Saint Johns College Main Campus, 1996; Juris Doctor, Georgetown University, 1999 (2005)

Gregory Lynn Snider. Professor, Electrical Engineering. Bachelor of Science, Calif St Poly U Pomona, 1983; Master of Science, University of California Sta Barbara, 1987; Philosophiae Doctor, ibid., 1991 (1994)

Dennis Michael Snow. Professor, Mathematics. Bachelor of Science, Merrimack College, 1975; Master of Science, University of Notre Dame, 1977; Philosophiae Doctor, ibid., 1979 (1982)

Brittany Solomon. Research Assistant Professor, Management. Bachelor of Arts, University of Arizona, 2007; Master of Arts, Washington University, 2012; Philosophiae Doctor, ibid., 2015 (2015)

Yasmin Hana Solomonescu. Assistant Professor, English. Bachelor of Science, Carleton University Ottawa, 2001; Master of Philosophy, University of Cambridge, 2002; Philosophiae Doctor, ibid., 2007 (2011)


Andrew John Sommese. The Vincent J. and Annamarie Micus Duncan Professor of Mathematics; Professor, Applied Computational Mathematics & Statistics; Department Chair, Applied Computational Mathematics & Statistics. Bachelor of Arts, Fordham University, 1969; Philosophiae Doctor, Princeton University, 1973 (1979)

Cesar Sosa Padilla Araujo. Assistant Professor, Economics and Policy Studies. B.A. Economics, National University of Tucuman, 2005; Master of Arts, University of Maryland Univ, 2008; Doctor of Philosophy, University of Maryland, 2012 (2016)

Jeffrey Joseph Speaks. Professor, Philosophy; Department Chair, Philosophy. Bachelor of Arts, University of Notre Dame, 1997; Philosophiae Doctor, Princeton University, 2003 (2006)

Elyse Deeb Speaks. Assistant Professional Specialist, Art, Art History, and Design; Assistant Professor of the Practice, Art, Art History and Design. Bachelor of Arts, University of Notre Dame, 1997; Master of Arts, Brown University, 2001; Philosophiae Doctor, ibid., 2005 (2013)

Forrest Rule Spence. Assistant Professional Specialist, Department of Economics; Assistant Teaching Professor. Bachelor of Science, University of South Carolina, 2009; Philosophiae Doctor, UNC at Chapel Hill, 2015 (2015)

D. Katherine Spiess. Associate Professor, Finance; Associate Dean, Mendoza College of Business. Philosophiae Doctor, University of Missouri-Columbia, 1991; Bachelor of Science, ibid., 1994 (1991)

Lynette Patrice Spillman. Professor, Sociology; Fellow, Kellogg Institute for International Studies; Director of Graduate Studies, Department of Sociology. Bachelor of Arts, Australian National University, 1982; Master of Arts, University of California Berkeley, 1985; Philosophiae Doctor, ibid., 1991 (1991)

Jeffrey Vincent Spoonhower. Assistant Professor, Film, Television, and Theatre. Bachelor of Arts, University of Notre Dame, 1999; Master of Fine Arts, Rochester Inst of Technology, 2002 (2012)

Jason Andrew Springs. Associate Professor, Sociology. Bachelor of Arts, Georgetown University, 1995; Master of Arts, Baylor University, 1996; Master of Divinity, Princeton Theological Seminary, 2000; Philosophiae Doctor, Harvard University, 2005 (2008)

Susan Monica St. Ville. Associate Professional Specialist, Joan B. Kroc Institute for International Peace. Bachelor of Arts, University of Notre Dame, 1985; Master of Arts, University of Chicago, 1986; Philosophiae Doctor, ibid., 1996 (2008)

Mary Sharon Stack. Kleider-Pezold Professor of Biochemistry; Professor, Chemistry and Biochemistry; Concurrent Professor, Biological Sciences. Bachelor of Science, Clemson University, 1981; Master of Science, East Tennessee State University, 1985; Philosophiae Doctor, University of Louisville, 1989 (2011)

Mark Allen Stadtherr. Keating-Crawford Professor of Chemical and Biomolecular Engineering; Professor, Chemical and Biomolecular Engineering; Concurrent Professor, Applied Computational Mathematics and Statistics; Concurrent Professor, Applied Computational Mathematics & Statistics. Bachelor of Science, University of Minnesota, 1972; Philosophiae Doctor, University of Wisconsin-Madison, 1976 (1996)

John W. Stamper. Associate Dean, School of Architecture; Professor, School of Architecture. Bachelor of Science, University of II. Urbana-Champaign, 1973; Master of Architecture, ibid., 1975; Master of Arts, Williams College, 1977; Philosophiae Doctor, Northwestern University, 1985 (1984)

Joseph B. Stanfield. Assistant Dean, Office of Arts & Letters Undergraduate Study; Director of Advising, Office of Undergraduate Studies; Professional Specialist, Office of Arts & Letters Undergraduate Study. Bachelor of Arts, University of Georgia, 1985; Master of Arts, ibid., 1997; Philosophiae Doctor, University of London, 2001 (2006)

Zachary Ronald Stangebye. Assistant Professor, Department of Economics; Fellow, Kellogg Institute for International Studies. Bachelor of Science, University of Michigan, 2010; Philosophiae Doctor, University of Pennsylvania, 2015 (2015)

Faculty


Thomas A. Stapleford. Associate Professor, Program of Liberal Studies; Department Chair, Program of Liberal Studies. Bachelor of Arts, University of Delaware, 1997; Bach of Sci in Mech Engr, ibid., 1997; M.S. Engineering, University of Edinburgh, 1998; Philosophiae Doctor, Harvard University, 2003 (2003)


Amy Stark. Assistant Professional Specialist, Biological Sciences; Assistant Professor of the Practice. B.S. Biology, Valparaiso University, 2006; Philosophiae Doctor, University of Chicago, 2011 (2014)

John Joseph Staud. Concurrent Professional Specialist, Institute for Educational Initiatives; Concurrent Professional Specialist, First Year of Studies; Professional Specialist, Alliance for Catholic Education; Sr. Director Pastoral Formation and Administration. Bachelor of Arts, University of Notre Dame, 1987; Master of Arts, University of Michigan, 1990; Philosophiae Doctor, ibid., 1992 (1996)


Lucien Francois Steil. Associate Professor, School of Architecture; Fellow, Nanovic Institute for European Studies. Bachelor of Arch in Arch, Ecole des Beaux-Arts, 1980 (2010)

Marcus Stephens. Associate Professional Specialist, Film, Television, and Theatre. Bachelor of Arts, Southeast Missouri St University, 2004; Master of Fine Arts, Northwestern University, 2006 (2007)

James P. Sterba. Professor, Philosophy; Fellow, Joan B. Kroc Institute for International Peace. Bachelor of Arts, La Salle University, 1966; Master of Arts, University of Pittsburgh, 1972; Philosophiae Doctor, ibid., 1973 (1973)

Robert L. Stevenson. Professor, Electrical Engineering. B Electrical Engineering, University of Delaware, 1986; Philosophiae Doctor, Purdue University, 1990 (1990)

Marsha Stevenson. Librarian, Hesburgh Libraries; Fellow, Nanovic Institute for European Studies. Bachelor of Arts (Latin), University of Wisconsin-Madison, 1974; Master of Arts, ibid., 1976 (1990)

Kay Lorraine Stewart. Concurrent Associate Professional Specialist, Biological Sciences; Associate Professional Specialist, Freimann Animal Care Facility. Associate in Applied Science, Purdue University, 1982 (1985)

John Stiver. Associate Professional Specialist, Finance; Associate Teaching Professor. Bachelor of Arts, State University of NY-Buffalo, 1993; Master of Arts, University of Rochester, 1997; Doctorate Degree, ibid., 2000 (2004)

Thomas L. Stober. Associate Professor, Accountancy. B.S. Business Administration, Ohio State University, 1974; Master of Business Admin, University of Minnesota, 1975; Philosophiae Doctor, University of Chicago, 1983 (1995)

Stephan Alfred Stolz. The Rev. John A. Zahm, C.S.C., Professor of Mathematics; Professor, Mathematics. Bachelor of Science, University of Bielefeld, 1975; Master of Science, Rhenish Friedrich Wilhelm U Bo, 1979; Philosophiae Doctor, Johannes Gutenberg University of Mai, 1984 (1986)

Daniel Charles Stowe. Associate Professional Specialist, Music; Director, Glee Club; Associate Teaching Professor. Bachelor of Arts (Latin), University California Davis, 1984; Master of Music, University of Southern California, 1986; Master of Arts, Cornell University, 1989 (1993)


Thomas Gerard Streit, C.S.C. Associate Professional Specialist, Biological Sciences; Associate Professor of the Practice. Bachelor of Science, University of Notre Dame, 1980; Master of Divinity, ibid., 1985; Master of Science, ibid., 1991; Philosophiae Doctor, ibid., 1994 (1997)

Aaron Striegel. Associate Professor, Computer Science and Engineering. Bachelor of Science, Iowa State University, 1998; Philosophiae Doctor, ibid., 2002 (2003)

Duncan G. Stroik. Professor, School of Architecture; Fellow, Nanovic Institute for European Studies. Bachelor of Architecture, University of Virginia, 1984; Master of Architecture, Yale University, 1987 (1990)

Leopold Stubenberg. Associate Professor, Philosophy. Bachelor of Arts, University of Graz, 1984; Master of Arts, University of Arizona, 1988; Philosophiae Doctor, ibid., 1992 (1990)

James Xavier Sullivan. Rev. Thomas J. McDonagh, C.S.C., Associate Professorship of Economics; Associate Professor, Department of Economics. Bachelor of Arts, University of Notre Dame, 1993; Master of Arts, Northwestern University, 1997; Philosophiae Doctor, ibid., 2002 (2002)


Meghan Elizabeth Sullivan. Rev. John A. O'Brien Associate Professor of Philosophy; Associate Professor, Philosophy. Bachelor of Arts, University of Virginia, 2005; Bachelor of Philosophy, University of Oxford, 2007; Philosophiae Doctor, Rutgers State University of NJ, 2011 (2011)


Daewon Sun. Associate Professor, Management; Notre Dame Chair in Management. Bachelor of Business Admin., Korea University, 1994; Master of Business Admin, Bowling Green State University, 1999; Philosophiae Doctor, Pennsylvania St University, 2004 (2004)

Rebecca Surman. Associate Professor, Physics. Bachelor of Arts, SUNY College at Geneseo, 1993; Master of Science, Michigan State University, 1995; Philosophiae Doctor, UNC at Chapel Hill, 1998 (2014)


Kasey Ann Swanke. Assistant Professional Specialist, First Year of Studies. Bachelor of Science, University Wisconsin Eau Clair, 2004; Master of Arts, University of Iowa, 2005 (2014)
Christopher Richard Sweet. Research Assistant Professor, Computer Science and Engineering. B.S. Mathematics, University of California, 2001; Doctorate Degree, ibid., 2004 (2005)

Zainulabeddin Syed. Assistant Professor, Biological Sciences. Bachelor of Science, Osmania University, 1992; Master of Science, Aligarh Muslim University, 1994; Philosophiae Doctor, University of Neuchatel, 2002 (2011)


Gabor Szekelyhidi. The Rev. Howard J. Kenna, C.S.C., Memorial Associate Professor of Mathematics; Associate Professor, Mathematics. Bachelor of Mathematics, Trinity College Cambridge, 2002; Philosophiae Doctor, Imperial Coll of Science & Tec, 2006 (2011)

Alexandros A. Taflanidis. Associate Professor, Civil & Environmental Engineering & Earth Sciences; Concurrent Associate Professor, Aerospace and Mechanical Engineering; Fellow, Kellogg Institute for International Studies. Bachelor of Arts, Aristotle University of Thessal, 2002; Master of Science, ibid., 2003; Philosophiae Doctor, California Institute of Techno, 2007 (2008)

Wanpeng Tan. Research Associate Professor, Physics. B.S. Physics, Beijing University, 1994; Master of Science, Chinese Academy of Sciences, 1997; Philosophiae Doctor, Michigan State University, 2002 (2002)

Julie K Tanaka. Assistant Librarian, Hesburgh Libraries. Bachelor of Humanities, San Jose State University, 1997; Master of Arts, University California Irvine, 1999; Philosophiae Doctor, University of California Berkeley, 2006; M.S. Library Science, University of Washington, 2012 (2012)

Jennifer Leah Tank. The Ludmilla E. Stephen J., and Robert T. Gallà Professor of Biological Sciences; Professor, Biological Sciences; Director, ND Environmental Change Initiative. Bachelor of Science, Michigan State University, 1988; Master of Science, Virginia Polytechnic Institute, 1992; Philosophiae Doctor, ibid., 1996 (2000)

Carol E. Tanner. Professor, Physics. Bachelor of Science, University of IL Urbana-Champaign, 1980; Master of Science, University of California Berkeley, 1982; Philosophiae Doctor, ibid., 1985 (1990)

Melvin Raymond Tardy. Assistant Professional Specialist, First Year of Studies. Bachelor of Arts, University of Notre Dame, 1986; Master of Business Admin, ibid., 1990 (1990)


Katherine Ann Taylor. Professional Specialist, College of Science. B.S. Biology, Purdue University, 1979; Master of Science, University of Notre Dame, 1985; Philosophiae Doctor, Vrije Universiteit Brussel, 1997 (2009)

Nicholas Joshua Y. Teh. Assistant Professor, Philosophy. Bachelor of Arts, Princeton University, 2005; Master of Arts, University of Pittsburgh, 2008; Philosophiae Doctor, University of Cambridge, 2012 (2015)

Sandra M. Teixeira. Associate Professional Specialist, Romance Languages and Literatures. Bachelor of Arts, Pontificial Catholic University Sao Paulo, 1975; Master of Arts, ibid., 1975; Bachelor of Arts in Education, Faculdade Mozartem Sao Paulo, 1976 (2007)

Carmen Helena Tellez. Professor, Music; Concurrent Professor, Theology; Fellow, Kellogg Institute for International Studies; Fellow, Nanovic Institute for European Studies. Bachelor of Arts, Indiana Univ-Bloomington, 1980; Master of Music, ibid., 1982; Doctor of Music, ibid., 1989 (2012)

Ann Elizabeth Tenbrunsel. David E. Gallo Professor of Business Ethics; Professor, Management; Co-Director, College of Business Ethics. Bachelor of Science, University of Michigan, 1986; Master of Arts, Northwestern University, 1990; Philosophiae Doctor, ibid., 1995 (1995)

Douglas L. Thain. Associate Professor, Computer Science and Engineering. Bachelor of Science, University of Minnesota of Minneapolis, 1997; Master of Science, University of Wisconsin-Madison, 1999; Philosophiae Doctor, ibid., 2004 (2004)


Julia A. Thomas. Associate Professor, History. Bachelor of Arts (Latin), Princeton University, 1981; Master of Arts, University of Chicago, 1984; Philosophiae Doctor, ibid., 1993 (2001)

Flint Owen Thomas. Professor, Aerospace and Mechanical Engineering. B.S. Physics, Indiana State University Main, 1977; M.S. Mechanical Engr, Purdue University, 1980; Philosophiae Doctor, ibid., 1983 (1988)


Ashley Parkinson Thrall. Assistant Professor, Civil & Environmental Engineering & Earth Sciences. Bachelor of Physics, Vassar College, 2004; M.S. Civil Engr, Princeton University, 2008; Master of Science, ibid., 2009; Philosophiae Doctor, ibid., 2011 (2011)

Jeffrey Michael Thurk. Assistant Professor, Department of Economics; Fellow, Nanovic Institute for European Studies. Bachelor of Arts, Carleton College, 2001; Master of Science, University of Texas-Austin, 2006; Philosophiae Doctor, ibid., 2010 (2010)


Gregory L. Timp. The Keough-Hesburgh Professor of Electrical Engineering and Biological Sciences; Professor, Electrical Engineering; Professor, Biological Sciences; Fellow, Nanovic Institute for European Studies. Bach of Sci in Electrical Engr, University of IL Urbana-Champaign, 1978; M.S. Electrical Engr, Massachusetts Institute of Tec, 1980; Philosophiae Doctor, ibid., 1984 (2010)

Aaron T Timperman. Concurrent Professional Specialist, Chemistry and Biochemistry; Professional Specialist, Advanced Diagnostics & Therapeutics; Professor of the Practice. Bachelor of Science, Saint Louis University, 1990; Philosophiae Doctor, University of IL Urbana-Champaign, 1995 (2015)

Tsuboshi Tokuami. Research Assistant Professor, Biological Sciences. Bachelor of Arts, University of Tsukuba, 1991; Philosophiae Doctor, ibid., 1997 (2007)
To Table of Contents
Anre Venter. Professional Specialist, Psychology. Bachelor of Arts, University of Cape Town, 1980; Master of Arts, Pepperdine University, 1990; Master of Arts, University of Notre Dame, 1994; Philosophiae Doctor, ibid., 1996 (1996)

Christine Mary Venter. Professional Specialist, Law School; Teaching Professor. Bachelor of Arts, University of Cape Town, 1983; Bachelor of Laws, ibid., 1985; Master of Arts, University of Notre Dame, 1992; Juris Doctor, ibid., 1995 (1993)


Ernesto Verdeja. Associate Professor, Political Science; Fellow, Kellogg Institute for International Studies; Fellow, Nanovic Institute for European Studies. Bachelor of Arts, University of Texas-Austin, 1995; Master of Arts, The New School, 1998; Philosophiae Doctor, ibid., 2005 (2008)

David Jude Velselik. Associate Professional Specialist, Biological Sciences; Associate Teaching Professor, Biological Sciences. Bachelor of Arts, University of Notre Dame, 1996; Master of Science, Georgetown University, 1998; Philosophiae Doctor, ibid., 2006 (2006)

Dana R Villa. The Packey J. Dee Professor of Political Science; Professor, Political Science. Bachelor of Arts, Amherst College, 1980; Master of Arts, Princeton University, 1982; Philosophiae Doctor, ibid., 1987 (2006)


Elliott Thomas Visconsi. Associate Professor, English; Director, Office of Digital Learning. Bachelor of Arts (Latin), College of the Holy Cross, 1995; Philosophiae Doctor, UCLA, 2001; Master of Law, Yale Law School, 2010 (2010)

Juan Marcelo Vitulli. Associate Professor, Romance Languages and Literatures; Fellow, Kellogg Institute for International Studies. Bachelor of Arts, National University of Rosario, 2000; Master of Arts, Vanderbilt University, 2005; Philosophiae Doctor, ibid., 2007 (2007)

Patrick Leonard Vivirito. Associate Professional Specialist, Romance Languages and Literatures. Bachelor of Arts, Loyola University Chicago, 1997; B.S. Criminal Justice, ibid., 1997; Master of Arts, University of Notre Dame, 2002 (2002)

Warren J. von Eschenbach. Assistant Professor, Political Science; Assistant Professor, Army Science. Bachelor of Science, U.S. Military Academy, 2007; Master of Arts, University of Texas at El Paso, 2014 (2015)


Dervis Can Vural. Assistant Professor, Physics. Master of Science, University of IL Urbana-Champaign, 2004; Philosophiae Doctor, ibid., 2011 (2014)

Jennifer Rotondo Waddell. Assistant Department Chair, Information Technology, Analytics, and Operations Department, Mendoza College of Business; Associate Professional Specialist, Management; Associate Teaching Professor. Bachelor of Arts, Muhlenberg College, 1995; Master of Arts, University of Notre Dame, 1998; Philosophiae Doctor, ibid., 2000 (2012)

Todd Walatka. Assistant Professional Specialist, Theology. Assistant Chair for Graduate Studies. Bachelor of Arts, University of Dayton, 2004; Master of Theological Studies, University of Notre Dame, 2006; Philosophiae Doctor, ibid., 2011 (2011)


Paul Mark Walker. Associate Professional Specialist, Music; Associate Professor of the Practice. Bachelor of Arts, Albion College, 1975; Master of Arts, University of Kansas, 1976; Philosophiae Doctor, State University of NY-Buffalo, 1987 (2011)


Laura Dassow Walls. William P. and Hazel B. White Professor of English; Professor, English; Concurrent Professor, American Studies. Bachelor of Arts, University of Washington, 1976; Master of Arts, ibid., 1978; Philosophiae Doctor, Indiana Univ-Bloomington, 1992 (2011)

Robert E. Walls. Assistant Professional Specialist, American Studies; Assistant Teaching Professor. Bachelor of Arts, University of Washington, 1980; Master of Arts, Indiana Univ-Bloomington, 1987; Philosophiae Doctor, ibid., 1997 (2011)

Chaoli Wang. Associate Professor, Computer Science and Engineering. Bachelor of Engineering, Fuzhou University, 1998; Master of Engineering, ibid., 2001; Philosophiae Doctor, Ohio State University, 2006 (2014)


Lijuan Wang. Associate Professor, Psychology. Bachelor of Science, Renmin University Beijing, 2000; Master of Science, ibid., 2003; Master of Arts, University of Virginia, 2006; Philosophiae Doctor, ibid., 2008 (2008)


Cheng Wang. Research Assistant Professor, Sociology. LLB - Law, Nanjing University, 1998; Master of Arts, University of Notre Dame, 2009; Philosophiae Doctor, ibid., 2012 (2016)

Wei Wang. Assistant Professional Specialist, East Asian Languages and Cultures; Assistant Teaching Professor. Bachelor of Arts, Capital Normal University, 2010; Master of Arts, University of Iowa, 2012 (2012)
Leonor Laverne Wangenstein. Assistant Professional Specialist, First Year of Studies; Director, First Year of Studies; Bachelor of Arts, University of Notre Dame, 2003; Master of Arts, ibid., 2009 (2009)


David Bruce Watson. Andrew J. McKenna Family Professor of Psychology; Professor, Psychology. Bachelor of Science, Santa Clara University, 1975; Philosophiae Doctor, University of Minnesota, 1982 (2010)

Stephen H. Watson. Professor, Philosophy. Bachelor of Arts, Carroll College, 1972; Master of Arts, Duquesne University, 1975; Philosophiae Doctor, ibid., 1980 (1983)

Joseph Peter Wawrykow. Professor, Theology. Bachelor of Arts, University of Minnesota, 1978; Master of Arts, ibid., 1980; Master of Arts, Yale University, 1981; Master of Philosophy, ibid., 1985; Philosophiae Doctor, ibid., 1986 (1986)


Matthew Jerry Webber. Assistant Professor, Chemical and Biomolecular Engineering. Bach of Sc in Chemical Eng, University of Notre Dame, 2006; Master of Engineering, Northwestern University, 2009; Philosophiae Doctor, ibid., 2011 (2016)

Hannelore Helena Weber. Professional Specialist, German and Russian Languages and Literature; Teaching Professor. Bachelor of Arts, Mount Mary College, 1966; Master of Arts, University of Notre Dame, 1994 (1991)

Jerry C. Wei. Associate Professor, Management. Bachelor of Science, National Tsing Hua University, 1979; Master of Engineering, Rochester Inst of Technology, 1983; Philosophiae Doctor, Texas A&M University, 1987 (1987)

Na Wei. Assistant Professor, Civil & Environmental Engineering & Earth Sciences. B.S. Engineering & Environ Sci, Sichuan University, 2006; Master of Engineering, University of IL Urbana-Champaign, 2008; Philosophiae Doctor, ibid., 2011 (2015)

Andrew J. Weigert. Professor, Sociology. Bachelor of Arts, Saint Louis University, 1958; Master of Philosophy, ibid., 1959; Master of Arts, ibid., 1960; Philosophiae Doctor, University of Minnesota, 1968 (1968)

Henry Michael Weinfield. Professor, Program of Liberal Studies; Concurrent Professor, English. Bachelor of Arts, City College of New York, 1970; Master of Arts, State University of NY–Binghamton, 1973; Philosophiae Doctor, City University of New York, 1985 (1991)

Paul Jude Weithman. Professor, Philosophy. Director, Glynn Family Honors Program; Director, Interdisciplinary Minor, Politics, and Economics. Bachelor of Arts, University of Notre Dame, 1981; Master of Arts, Harvard University, 1986; Philosophiae Doctor, ibid., 1988 (1990)


John P. Welle. Professor, Romance Languages and Literatures; Concurrent Professor, Film, Television, and Theatre. Bachelor of Arts, Saint John's University, 1974; M.A. Teaching, St Thomas College, 1975; Master of Arts, Indiana Univ-Bloomington, 1980; Philosophiae Doctor, ibid., 1983 (1983)

Susanne Wengle. Assistant Professor, Political Science; Fellow, Nanovic Institute for European Studies. Bachelor of Science, London School of Economics, 2000; Master of Arts, University of California Berkeley, 2004; Philosophiae Doctor, ibid., 2015 (2015)

Timothy Weninger. Assistant Professor, Computer Science and Engineering. Bachelor of Science, Kansas State University, 2007; Master of Science, ibid., 2008; Philosophiae Doctor, University of IL Urbana-Champaign, 2013 (2013)

Kathleen Fehrenbach Werener. Assistant Professional Specialist, Romance Languages and Literatures; Assistant Teaching Professor. Bachelor of Arts, Rosary College, 1973; Master of Arts, Eastern Michigan University, 1975 (2014)

Sean Patrick Wernert. Associate Professional Specialist, First Year of Studies. Bachelor of Arts, Xavier University, 2002; Master of Arts, University Toledo, 2008 (2008)

Sarah E. West. Assistant Professional Specialist, Chemistry and Biochemistry; Teaching Professor. Bachelor of Arts, Augustana College, 1996 (1998)

Joannes J. Westerink. Joseph and Nona Ahearn Professor of Computational Engineering and Science; Professor, Civil & Environmental Engineering & Earth Sciences; Concurrent Professor, Applied Computational Mathematics & Statistics; Concurrent Professor, Aerospace and Mechanical Engineering; Concurrent Professor, Computer Science and Engineering. Bachelor of Science, State University of NY-Buffalo, 1979; Master of Science, ibid., 1981; Philosophiae Doctor, Massachusetts Institute of Tec, 1984 (1990)

Michelle A. Whaley. Professional Specialist, Biological Sciences; Teaching Professor, Biological Sciences. Bachelor of Arts, Scripps College, 1987; Philosophiae Doctor, University of Notre Dame, 1993 (1993)

Sophie K. White. Concurrent Associate Professor, African and African American Studies; Associate Professor, American Studies; Concurrent Associate Professor, Gender Studies; Concurrent Associate Professor, History. Master of Arts, University of Edinburgh, 1990; Master of Arts, Courtauld Institute of Art, 1993; Philosophiae Doctor, ibid., 2000 (2001)

Jonathan Whitmer. Assistant Professor, Chemical and Biomolecular Engineering. Bachelor of Science, Kansas State University, 2005; Master of Science, University of Illinois-Chicago, 2009; Philosophiae Doctor, ibid., 2011 (2014)

Todd David Whitmore. Associate Professor, Anthropology; Fellow, Kellogg Institute for International Studies; Fellow, Joan B. Kroc Institute for International Peace. Bachelor of Arts, Wabash College, 1979; Master of Divinity, Harvard Divinity School, 1985; Philosophiae Doctor, University of Chicago, 1990 (1990)

Erin Nicole Wibbens. Assistant Professional Specialist, Alliance for Catholic Education. Bachelor of Arts, University of Notre Dame, 2002; Masters in Education, Loyola University Chicago, 2006; Philosophiae Doctor, Michigan State University, 2013 (2013)

Thanuka L. Wickramarathne. Research Assistant Professor, Electrical Engineering. Bachelor of Science, University of Moratuwa, 2006; Master of Science, University of Miami, 2008; Philosophiae Doctor, ibid., 2012 (2012)
Faculty

Michael Caspar Wiescher. The Frank M. Freimann Professor of Physics; Professor, Physics; Director, Joint Institute for Nuclear Astrophysics. Bachelor of Arts, University of Munster, 1972; Master of Arts, *ibid.*, 1975; Philosophiae Doctor, *ibid.*, 1980 (1986)


Steven Milo Wietstock. Associate Professional Specialist, Chemistry and Biochemistry; Teaching Professor. B.S. Chemistry, Alma College, 1982; Philosophiae Doctor, Uniform Services University of Health Sciences, 1988 (2005)

Matthew Wilkens. Concurrent Assistant Professor, American Studies; Assistant Professor, English. Bachelor of Arts, Coll of William & Mary, 1996; Master of Science, University of California Berkeley, 1998; Master of Arts, University of Wisconsin-Madison, 2000; Philosophiae Doctor, Duke University, 2006 (2011)

William L. Wilkie. The Aloysius and Eleanor Professor of Marketing; Professor, Marketing. Bachelor of Business Admin., University of Notre Dame, 1966; Master of Business Admin, Stanford University, 1969; Philosophiae Doctor, *ibid.*, 1971 (1987)

James Everett Wilkie. Assistant Professor, Marketing. Bachelor of Business Admin., University of Notre Dame, 2005; Master of Science, Northwestern University, 2011; Philosophiae Doctor, *ibid.*, 2012 (2012)

Brett Raymond Williams. Assistant Professor, Naval Science. Bachelor of Science, Auburn University, 2010 (2016)

Oliver F. Williams, C.S.C. Associate Professor, Management; Fellow, Joan B. Kroc Institute for International Peace. Bachelor of Science, University of Notre Dame, 1961; Master of Arts, *ibid.*, 1969; Philosophiae Doctor, Vanderbilt University, 1974 (1973)


Shauna Loree Williams. Associate Professional Specialist, Romance Languages and Literatures; Director of Undergraduate Studies, Romance Languages and Literatures. Bachelor of Arts, Evangel College, 1989; Master of Arts Education, Indiana University South Bend, 2002 (2004)

Nathan Daniel Wills, C.S.C. Assistant Professional Specialist, Institute for Educational Initiatives; Assistant Clinical Professor, Institute for Educational Initiatives. Bachelor of Arts, University of Notre Dame, 1999 (2015)

Rebecca Ann Wingert. Elizabeth and Michael Gallagher Family Professorship in Adult Stem Cell Research; Associate Professor, Biological Sciences. Bachelor of Arts, Muhlenberg College, 1999; Philosophiae Doctor, Harvard University, 2005 (2010)

Abraham Winitzer. Jordan H. Kapron Assistant Professor of Jewish Studies; Associate Professor, Theology. Bachelor of Arts, Brandeis University, 1992; Master of Arts, *ibid.*, 1995; Philosophiae Doctor, Harvard University, 2006 (2008)


Michelle Marie Wirth. Assistant Professor, Psychology. Bachelor of Arts, Swarthmore College, 1999; Master of Arts, University of Michigan, 2003; Philosophiae Doctor, *ibid.*, 2006 (2009)

Mark Wistey. Assistant Professor, Electrical Engineering. Bachelor of Science, Montana State University, 1994; Master of Science, Stanford University, 1999; Philosophiae Doctor, *ibid.*, 2004 (2009)


Pamela Wojcik. Professor, Film, Television, and Theatre; Concurrent Professor, American Studies; Concurrent Professor, Gender Studies. Bachelor of Arts, Wellesley College, 1986; Master of Arts, University of Chicago, 1988; Philosophiae Doctor, *ibid.*, 1993 (1998)

Christina Katherine Wollbricht. Associate Professor, Political Science; Director, Rooney Center; Academic Director, Washington Program. Bachelor of Arts, Pacific Lutheran University, 1992; Master of Arts, Washington University, 1994; Philosophiae Doctor, *ibid.*, 1997 (1997)

Danielle M. Wood. Assistant Professional Specialist, Center for Social Concerns; Assistant Professor of the Practice. Bachelor of Science, Purdue University, 1992; Master of Science, University of Wisconsin Center, 1996; Doctor of Philosophy, *ibid.*, 2012 (2013)

Nicole Lynn Woods. Assistant Professor, Art, Art History, and Design; Concurrent Assistant Professor, Gender Studies. Bachelor of Arts, UCLA, 1999; Master of Arts, *ibid.*, 2005; Philosophiae Doctor, University California Irvine, 2010 (2013)

Kaitlin Dunn Wowak. Assistant Professor, Management. Associate in Arts, Tacoma Community College, 2004; Bachelor of Science, University of Florida, 2006; Master of Science, Johns Hopkins University, 2008; Philosophiae Doctor, Pennsylvania State University, 2012 (2012)

Adam J. Wowak. Assistant Professor, Management. Bachelor of Science, Pennsylvania State University, 2000; Philosophiae Doctor, *ibid.*, 2011 (2010)

Abigail Kaethe Wozniak. Associate Professor, Department of Economics. Bachelor of Arts, University of Chicago, 1998; Master of Arts, Harvard University, 2001; Philosophiae Doctor, *ibid.*, 2005 (2005)

Timothy Everett Wright. Research Assistant Professor, Computer Science and Engineering; Assistant Director, Information Systems Security and Compliance, Center for Research Computing. Bachelor of Arts, Indiana University South Bend, 1991; Bachelor of Science, *ibid.*, 1994; M.S. Computer Sci and Engr, University of NC-Charlotte, 2000; Philosophiae Doctor, University of Notre Dame, 2009 (2009)

Melodie Wyttenbach. Assistant Professional Specialist, Alliance for Catholic Education; Academic Director Remick Leadership Program; Assistant Clinical Professor, Institute for Educational Initiatives. Master of Education, Marquette University, 2009; Doctor of Philosophy, University of Wisconsin Center, (2015)

Qiping Xu. Assistant Professor, Finance. Bachelor of Arts, Zhejiang University, 2007; Master of Arts, Ohio State University, 2010; Master of Arts, ibid., 2010; Master of Arts, ibid., 2010; Philosophiae Doctor, University of Chicago, 2015 (2015)

Xiaoshan Yang. Associate Professor; East Asian Languages and Cultures; Director of Undergraduate Studies, East Asian Languages and Cultures. Bachelor of Arts, Anhui Normal University, 1982; Master of Arts, Peking University, 1985; Philosophiae Doctor, Harvard University, 1994 (1997)

Weibing Ye. Assistant Professional Specialist, East Asian Languages and Cultures; Assistant Teaching Professor. Bachelor of Science, China Agriculture Univ., 2004; Master of Arts, Beijing Language & Culture Uni, 2010 (2014)


Chengyu Yin. Associate Professional Specialist, East Asian Languages and Cultures; Assistant Teaching Professor. Bachelor of Arts, Peking University, 1984; Master of Arts, University of Massachusetts, 1990 (2000)

Yeonhee Yoon. Associate Professional Specialist, East Asian Languages and Cultures; Coordinator, Korean Program. Bachelor of Science, Ewha Women’s University, 1986; Master of Arts, University of Hawaii at Manoa, 2006; Philosophiae Doctor, ibid., 2010 (2013)

Kathleen Lira Yoon. Associate Professor, Psychology. Bachelor of Arts, Yonsei University, 1997; Master of Arts, ibid., 1999; Master of Science, Northwestern University, 2002; Philosophiae Doctor, ibid., 2006 (2014)


Samir Younes. Professor, School of Architecture. Bachelor of Science, University of Texas at Dallas, 1981; Master of Architecture, ibid., 1984 (1991)

Kelley Young. Assistant Professional Specialist and Assistant Teaching Professor, Chemistry and Biochemistry. Bachelor of Science, Adrian College, 2009; Philosophiae Doctor, Michigan State University, 2015 (2016)


Nicholas Zabaras. Vida D. Hank Professor of Aerospace and Mechanical Engineering; Professor, Aerospace and Mechanical Engineering. Master in Mechanical Engr, University of Rochester, 1983; Philosophiae Doctor, Applied Mathematics, Cornell University, 1987 (2016)

Randall Carrington Zachman. Professor, Theology. Editor, Archive of Reformation History. Bachelor of Arts, Colgate University, 1975; Master of Divinity, Yale University-Div School, 1980; Philosophiae Doctor, University of Chicago, 1990 (1991)


Jeremiah Zartman. Assistant Professor, Chemical and Biomolecular Engineering. Bachelor of Science, University of Colorado, 2004; Master of Arts, Princeton University, 2006; Philosophiae Doctor, ibid., 2009 (2012)

William F. Zech. Assistant Professional Specialist, Physics. Associate in Science, Lake Michigan College, 1999; Bachelor of Science, Indiana University South Bend, 2002; Master of Science, University of Notre Dame, 2005; Philosophiae Doctor, ibid., 2009 (2009)


Guangjian Zhang. Associate Professor, Psychology. Bachelor of Medicine, Tianjin Medical College, 1994; Masters in Education, Beijing University, 1999; Master of Science, Ohio State University, 2004; Philosophiae Doctor, ibid., 2006 (2006)

Wenhui Zhang. Research Assistant Professor, Chemistry and Biochemistry. Bachelor of Science, Beijing University of Iron and, 1999; Master of Science, ibid., 2002; Doctor of Philosophy, University of Notre Dame, 2009 (2013)

Zhiyong Zhang. Associate Professor, Psychology. Bachelor of Arts, Renmin University Beijing, 2000; Master of Arts, ibid., 2003; Master of Arts, University of Virginia, 2005; Philosophiae Doctor, ibid., 2008 (2008)

Siyuan Zhang. Nancy Dee Assistant Professor of Cancer Research; Assistant Professor, Biological Sciences. Doctorate of Medicine, Peking University, 1998; Philosophiae Doctor, National University of Singapo, 2005 (2012)

Xuying Zhao. Associate Professor, Management. Bachelor of Science, Zhejiang University, 2000; Master of Science, University of Texas at Dallas, 2005; Philosophiae Doctor, Zhejiang University, 2007 (2007)

Jeffrey Zheng. Assistant Professional Specialist, Applied Computational Mathematics & Statistics; Assistant Professor of the Practice, Applied and Computational Mathematics and Statistics. Bachelor of Science, University of Michigan, 2006; Master of Science in Acct, ibid., 2007; Master of Arts Education, Harvard University, 2014 (2015)

Yongping Zhu. Associate Professor, East Asian Languages and Cultures; Department Chair, East Asian Languages and Cultures. Bachelor of Arts, Shaanxi Normal University, 1982; Master of Arts, ibid., 1987; Master of Arts, University of Minnesota, 1994; Philosophiae Doctor, ibid., 2002 (2013)

Eric Albert Zimmer. Associate Professional Specialist, Management; Associate Teaching Professor. Bachelor of Arts, University of Chicago, 1983; Bachelor of Arts, Loyola University New Orleans, 1987; Master of Arts, University of Minnesota, 1989; Master of Divinity, Jesuit School of Theology, 1995; Licentiate in Sacred Theology, ibid., 1997; Philosophiae Doctor, University of Pennsylvania, 2001; Master of Business Admin, University of Chicago, 2009 (2013)

Maryam Meechka Joze Zomorodian. Assistant Professional Specialist, First Year of Studies. Bachelor of Arts, UCLA, 2002; Master of Arts, University of Chicago, 2003; Philosophiae Doctor, University of Notre Dame, 2013 (2013)

Pinar Zorlutuna. Assistant Professor, Aerospace and Mechanical Engineering. B.S. Biology, University of Ankara, 2002; Master of Science, Middle East Technical Uni, 2005; Philosophiae Doctor, ibid., 2009 (2014)

Michael P. Zuckert. Nancy R. Dreux Professor of Political Science; Professor, Political Science; Fellow, Nanovic Institute for European Studies. Bachelor of Arts, Cornell University, 1964; Philosophiae Doctor, University of Chicago, 1974 (1998)

Catherine Heldt Zuckert. The Nancy Reves Dreux Chair in Political Science; Professor, Political Science. Bachelor of Arts, Cornell University, 1964; Master of Arts, University of Chicago, 1967; Philosophiae Doctor, ibid., 1970 (1998)
Electrical Engineering 133
Email Requirement 16
Employment 25
Engineering
Aerospace and Mechanical 125
Business Practice 121
Chemical and Biomolecular 127
College of 120
Computer Science and Engineering 132
Electrical 133
Graduate Programs in 122
Honors Program 121
Mechanical 126
Programs with Other Schools 122
with College of Arts and Letters 121
with Mendoza College of Business 121
Scholars Program 121
Student Organizations and Activities 124
English 66
Environmental Research Center UNDERC 144
Environmental Sciences 151
as a Second Major 153
European Studies 105
Evaluation 20

F
Faculty 19, 174
FAFSA 23
Federal Assistance Benefits 25
Federal Parent Loans 25
Federal Perkins Loan 25
Federal SEO Grant 24
Federal Stafford Loan Program 25
Fees and Expenses 22
Campus Resident Student 22
Off-Campus Student 22
Part-Time Undergraduate Student 22
Film, Television, and Theatre 67
Finance 114
Finance Club 112
Financial Aid 23
Application Process 23
Programs 24
Financial Need 23
Verification 24
Fine Arts 16, 39
First-Year Curriculum 37
First Year of Studies 37
First Year of Studies Librarian 18
France Study Abroad Program
Angers 30
Paris 31
Freimann Life Science Center 140
French 85

G
Gallivan Program in Journalism, Ethics, and Democracy 99
Gender Studies Program 69
German 70
German and Russian Languages and Literatures 70
Germany Study Abroad Program
Berlin 31
Heidelberg 31
Glynn Family Honors Program 93, 143
Go IRISH Database 35
Grading System 17
Graduation Rate 16
Greece: Athens Study Abroad Program 31
Greek 61
and Roman Civilization Minor 61
and Roman Literature Minor 61

H
Hall Presidents Council 12
Hank Center for Environmental Science 140
Health and Wellness 12
Hesburgh Libraries 18
Hesburgh Program in Public Service 98
Hillebrand Center for Compassionate Care in Medicine 166
History 15, 39, 72
History of Notre Dame 10
Holy Cross Seminary Formation 36
Honor Code 16
Honors at Graduation 16
Honor Societies
Business 112
Honors Track in Physics 164
Hungary: Budapest Study Abroad Program 31

I
Iberian and Latin American Studies 87
Industrial Design 59
Information Technologies 34
Information Technology, Analytics, and Operations 114
Institutes, Centers, and Laboratories 19
Insurance 22
Intercollegiate Athletics 12
Interdepartmental Engineering 134
Interdisciplinary Minors 97
Interlibrary Loan 18
International Development Studies 98
International Economics 65
International Students 21, 24
International Study Programs. See Study Abroad
Internship Funding Program 35
Investment Club 112
Ireland: Dublin Study Abroad Programs 31
Irish Language and Literature 73
Irish Studies 106
Israel: Jerusalem Study Abroad Program 31
Italian 85, 86
Italy Study Abroad Program
Bologna 31
Rome 32

J
Japanese 63
Japan Study Abroad Program
Nagoya 32
Tokyo 32
Jordan: Amman Study Abroad Program 32
Jordan Hall of Science 140
Journalism, Ethics, and Democracy 99

K
Korean 63

L
Language Placement Examination 41
Language Requirement 52, 142
Latin 61
Latin American Studies 87, 106
Latino Studies 99
Learning Resource Center 43
Liberal Studies 83
Literature 16, 39
Liturgical Music Ministry 100
Liu Institute for Asia and Asian Studies 93
Loans 25

M
Management and Organization 115
Marine Corps 28
Marketing 116
Marketing Club 112
Mathematics 15, 38, 74, 140, 158 and Business Administration 159
and Computing 159
and Engineering Science 159
and Life Sciences 158
and Social Science 159
as a Second Major 159
Career Program 158
Education Program 159
Honors Program 158
Mathematics Courses for the Other Programs 158
Mechanical Engineering 126
Medieval Studies 75, 100
Mediterranean and Middle East Studies 61
Mendoza College of Business 109
Study Abroad 111
Mexico: Puebla Study Abroad Program 32
Military Scholarships 25
Military Service 23
Minor in Philosophy, Science, and Mathematics 81
Minors
Constitutional Studies 97
Mission Statement of the University of Notre Dame 10
Moreau First Year Experience 16, 34, 41
Moreau Seminary 36
Morocco: Rabat Study Abroad Program 32
Museum of Art 19
Music 76

N
National Association of Black Accountants (NABA) 112
Naval Science (ROTC - Navy) 28
NetID Student Policy 17
Neuroscience and Behavior 78, 160
Nondiscrimination 1
Notre Dame Accounting Association 112
Notre Dame Club Scholarships 24
Notre Dame Information Technology Management Club 112
Notre Dame Scholarships 24
Notre Dame Subsidized Loan 25
Notre Dame Wall Street Club 113

O
Off-Campus Students 22
Office of Information Technologies 34
Office of Student Financial Services 23
Officers of Administration in the University 3
Old College 36

P
Painting Concentration 58
Part-Time Undergraduate Student 22
Pass-Fail 49
Payment Plan 23, 25
Payment Regulations 22
Peace Studies 100
Peer Advising Program 43
Pell Grant 24
Perkins Loan 25
Philosophy 16, 39, 80
Philosophy, Politics, and Economics 101
Philosophy, Religion, And Literature 101
Philosophy within the Catholic Tradition 102
Photography Concentration 58
Physics 140, 161
Advanced 163
Physics-in-Medicine 163
PLUS 25
Political Science 82
Pot of Gold 18
Poverty Studies 102
Pre-Health Studies 94
Pre-Law Advising 15
Preprofessional Studies 140, 165

President's Leadership Council 3
Printmaking Concentration 58
Professional Societies 124
Profile 23
Program in Academic Excellence 43
Program of Liberal Studies 83
Psychology 84

R
Recreational Sports 11
RecSports 12
Religion and Literature 103
Requirements, Arts and Letters 52
Research 19
Reserve Officers Training Corps (ROTC) 27
Air Force 28
Military Science (Army) 27
Navy 28
Residential Life 11
Romance Languages and Literatures 85
Russian and East European Studies 106
Russian Language and Literature 70
Russian Program 71
Russia Study Abroad Programs
Moscow 32
St. Petersburg 32
Vladimir 32
Rwanda: Kigali Study Abroad Program 32

S
Saint Mary's College 36
Sara Bea Center For Students With Disabilities 21
SAT I 21
Scholarships and Grants 24
Science 15, 38
College of 140
Degree Credit 171
Preprofessional Program (SCPP) 165
Science-Business Collegiate Sequence 166
Science-Computing Collegiate Sequence 167
Science-Education Collegiate Sequence 168
Science, Special Opportunities 143
Science, Technology, and Values 103
Sculpture Concentration 58
Selection Process 21
Self-Designed Majors 53
<table>
<thead>
<tr>
<th>Location</th>
<th>City</th>
</tr>
</thead>
<tbody>
<tr>
<td>Senegal: Dakar Study Abroad Program</td>
<td>Dakar</td>
</tr>
<tr>
<td>Senior Thesis Camp</td>
<td></td>
</tr>
<tr>
<td>Singapore Study Abroad Program</td>
<td></td>
</tr>
<tr>
<td>Snite Museum of Art</td>
<td></td>
</tr>
<tr>
<td>Social Sciences</td>
<td></td>
</tr>
<tr>
<td>Sociology</td>
<td></td>
</tr>
<tr>
<td>South Korea: Seoul Study Abroad Program</td>
<td>Seoul</td>
</tr>
<tr>
<td>Spain Study Abroad Programs</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Alcoy</td>
<td>33</td>
</tr>
<tr>
<td>Toledo</td>
<td>33</td>
</tr>
<tr>
<td>Spanish</td>
<td></td>
</tr>
<tr>
<td>Spirit of Inclusion at Notre Dame</td>
<td></td>
</tr>
<tr>
<td>Spiritual Life</td>
<td></td>
</tr>
<tr>
<td>Stafford Loan</td>
<td>25</td>
</tr>
<tr>
<td>Standards of Progress for Recipients of Financial Aid</td>
<td>26</td>
</tr>
<tr>
<td>Student Affairs, Division of</td>
<td></td>
</tr>
<tr>
<td>Student Awards and Prizes</td>
<td></td>
</tr>
<tr>
<td>Student Conduct</td>
<td>12</td>
</tr>
<tr>
<td>Student Employment</td>
<td>25</td>
</tr>
<tr>
<td>Student Financial Aid</td>
<td>23</td>
</tr>
<tr>
<td>Student Government Board</td>
<td>12</td>
</tr>
<tr>
<td>Student Guide to the Academic Code of Honor</td>
<td>16</td>
</tr>
<tr>
<td>Student International Business Council</td>
<td></td>
</tr>
<tr>
<td></td>
<td>112</td>
</tr>
<tr>
<td>Student Life</td>
<td></td>
</tr>
<tr>
<td>Student Organizations</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Business Oriented</td>
<td>112</td>
</tr>
<tr>
<td>Student Senate</td>
<td>12</td>
</tr>
<tr>
<td>Students with Disabilities</td>
<td>21</td>
</tr>
<tr>
<td>Student Union Board</td>
<td>12</td>
</tr>
<tr>
<td>Studio Art and Design</td>
<td>58</td>
</tr>
<tr>
<td>Studio Art Concentration</td>
<td>58</td>
</tr>
<tr>
<td>Study Abroad Programs</td>
<td>29, 49</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Australia</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Fremanlte</td>
<td>29</td>
</tr>
<tr>
<td>Perth</td>
<td>30</td>
</tr>
<tr>
<td>Brazil</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Salvadore Da Bahia</td>
<td>30</td>
</tr>
<tr>
<td>Sao Paulo</td>
<td>30</td>
</tr>
<tr>
<td>Chile</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Santiago</td>
<td>30</td>
</tr>
<tr>
<td>China</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Beijing</td>
<td>30</td>
</tr>
<tr>
<td>Hong Kong</td>
<td>30</td>
</tr>
<tr>
<td>Shanghai</td>
<td>30</td>
</tr>
<tr>
<td>Denmark</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Copenhagen</td>
<td>30</td>
</tr>
<tr>
<td>France</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Angers</td>
<td>30</td>
</tr>
<tr>
<td>Paris</td>
<td>31</td>
</tr>
<tr>
<td>Germany</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Berlin</td>
<td>31</td>
</tr>
<tr>
<td>Heidelberg</td>
<td>31</td>
</tr>
<tr>
<td>Greece</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Athens</td>
<td>31</td>
</tr>
<tr>
<td>Hungary</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Budapest</td>
<td>31</td>
</tr>
<tr>
<td>Ireland</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Dublin</td>
<td>31</td>
</tr>
<tr>
<td>Israel</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Jerusalem</td>
<td>31</td>
</tr>
<tr>
<td>Italy</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Bologna</td>
<td>31</td>
</tr>
<tr>
<td>Rome</td>
<td>31</td>
</tr>
<tr>
<td>Japan</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Nagoya</td>
<td>32</td>
</tr>
<tr>
<td>Tokyo</td>
<td>32</td>
</tr>
<tr>
<td>Jordan</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Amman</td>
<td>32</td>
</tr>
<tr>
<td>Mexico</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Pueba</td>
<td>32</td>
</tr>
<tr>
<td>Morocco</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Rabat</td>
<td>32</td>
</tr>
<tr>
<td>Russia</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Moscow</td>
<td>32</td>
</tr>
<tr>
<td>Saint Petersburg</td>
<td>32</td>
</tr>
<tr>
<td>Vladimir</td>
<td>32</td>
</tr>
<tr>
<td>Rwanda</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Kigali</td>
<td>32</td>
</tr>
<tr>
<td>Senegal</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Dakar</td>
<td>32</td>
</tr>
<tr>
<td>Singapore</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>33</td>
<td></td>
</tr>
<tr>
<td>South Korea</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Seoul</td>
<td>33</td>
</tr>
<tr>
<td>Spain</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Alcoy</td>
<td>33</td>
</tr>
<tr>
<td>Toledo</td>
<td>33</td>
</tr>
<tr>
<td>Switzerland</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Geneva</td>
<td>33</td>
</tr>
<tr>
<td>Turkey</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Istanbul</td>
<td>33</td>
</tr>
<tr>
<td>Uganda</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Kampala</td>
<td>33</td>
</tr>
<tr>
<td>United Kingdom</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>London</td>
<td>33</td>
</tr>
<tr>
<td>Norwich</td>
<td>33</td>
</tr>
<tr>
<td>Oxford</td>
<td>33</td>
</tr>
<tr>
<td>St. Andrews, Scotland</td>
<td>34</td>
</tr>
<tr>
<td>United Kingdom Study Abroad Programs</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>London</td>
<td>33</td>
</tr>
<tr>
<td>Norwich</td>
<td>33</td>
</tr>
<tr>
<td>Oxford</td>
<td>33</td>
</tr>
<tr>
<td>St. Andrews, Scotland</td>
<td>34</td>
</tr>
<tr>
<td>UNDERRC Field Biology Programs</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>151</td>
<td></td>
</tr>
<tr>
<td>Undergraduate Academic Code</td>
<td>16</td>
</tr>
<tr>
<td>Undergraduate Library Research Award</td>
<td>19</td>
</tr>
<tr>
<td>United Kingdom Study Abroad Programs</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>London</td>
<td>33</td>
</tr>
<tr>
<td>Norwich</td>
<td>33</td>
</tr>
<tr>
<td>Oxford</td>
<td>33</td>
</tr>
<tr>
<td>St. Andrews, Scotland</td>
<td>34</td>
</tr>
<tr>
<td>University Requirements</td>
<td>15, 37</td>
</tr>
<tr>
<td>University Seminar</td>
<td>15, 38</td>
</tr>
<tr>
<td>Unleashed</td>
<td>113</td>
</tr>
<tr>
<td>Vision for Undergraduate Education</td>
<td>11</td>
</tr>
<tr>
<td>Visual Communication Design</td>
<td>59</td>
</tr>
<tr>
<td>Voluntary Courses</td>
<td>41</td>
</tr>
<tr>
<td>Waiting List</td>
<td>21</td>
</tr>
<tr>
<td>Writing and Rhetoric</td>
<td>15, 38</td>
</tr>
<tr>
<td>Writing Center Consultations</td>
<td>19</td>
</tr>
<tr>
<td>Writing Requirement</td>
<td>49</td>
</tr>
</tbody>
</table>