

**HANDBOOK FOR UNDERGRADUATE STUDENTS**  
**CASE WESTERN RESERVE UNIVERSITY**  
**2000 - 2001**

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This *Handbook* is intended to provide faculty and students with a concise description of the academic requirements, programs, and regulations that apply to students who are candidates for any of the several baccalaureate degrees offered by Case Western Reserve University. The information contained herein is subject to change at any time. For more detailed information regarding the academic programs, rules, regulations and procedures of the colleges, consult the *Bulletin*, your dean or your adviser.

Students are responsible for familiarizing themselves with the requirements, regulations and deadlines that pertain to their academic programs and activities. Ignorance of these is not justification for exceptions or exemptions.

*Students matriculating in Fall, 2000 or Spring/Summer, 2001 must fulfill the degree requirements as described in this handbook.*

*Students who matriculated in Case Western Reserve University prior to Fall, 2000 may choose to fulfill the requirements as described in this handbook or in the handbook published in the year of matriculation.*

#### **Notice of Nondiscriminatory Policy as to Students**

Case Western Reserve University admits students of any race, religion, age, sex, color, disability, sexual orientation, and national or ethnic origin to all the rights and privileges, programs, and activities generally accorded or made available to students at the University. It does not discriminate on the basis of race, religion, age, sex, color, disability, sexual orientation, or national or ethnic origin in administering its educational policies, admission policies, employment, promotion and compensation policies, scholarship and loan programs, and athletic or other University-administered programs.

## **Case Western Reserve University Statement of Ethics**

Universities seek to preserve, disseminate and advance knowledge. At CWRU, as elsewhere, we recognize that to fulfill these purposes requires a norm of expected conduct shared by all in the University community, governed by truthfulness, openness to new ideas, and consideration for the individual rights of others, including the right to hold and express opinions different from our own.

The University's mission rests on the premise of intellectual honesty: in the classroom, the laboratory, the office, and the solitary examination desk. Without a prevailing ethic of honor and integrity not only in scientific pursuits but also in all scholarly activity, the very search for knowledge is impaired. In these respects, each of us -- especially but not exclusively faculty -- must regard oneself as a mentor for others.

These principles we strive to uphold make it possible for the larger society to place trust in the degrees we confer, the research we produce, the scholarship we represent and disseminate, and the critical assessments we make of the performance of students and faculty, as well as judgments of staff and administrators.

To safeguard the standards on which we all depend, each of us must therefore accept individual responsibility for our behavior and our work, and refrain from taking credit for the work of others.

The culture of a university also requires that the rights of all be protected, particularly by those entrusted with authority for judgment of the work of others.

The University being a human community is subject to human failings, ambiguities and errors. It is therefore the responsibility of the bodies regulating the affairs of faculty, students, and staff to maintain processes for judging and resolving instances where these principles may have been violated. However, all such systems depend for their effectiveness, in turn, on the acceptance of common norms of conduct -- the ties of trust which bind the university community together.

### **Academic Freedom**

This statement is also found in the *Faculty Handbook*.

Fundamental to the purposes of the University is the belief that progress in social and individual welfare is ultimately dependent on the maintenance of freedom in academic processes. Especially vital is the protection of expression which is critical toward conventional thought or established interests.

Academic freedom is a right of both tenured and non-tenured faculty members, and applies to University activities including teaching and research. Specifically, each faculty member may consider in his or her classes any topic relevant to the subject matter of the course as defined by the appropriate educational unit. Each faculty member is entitled to full freedom of scholarly investigation and publication of his or her findings.



## GENERAL REQUIREMENTS FOR ALL BACHELOR'S DEGREES

*Students matriculating in fall, 2000, spring, 2001, or summer, 2001, must complete degree requirements as described in this handbook. Students who matriculated prior to fall, 2000, may complete degree programs as prescribed in this handbook, or may complete degree programs as prescribed by the handbook published for the academic year in which they matriculated.*

The bachelor's degree programs require students to study one field in depth (the major), and to complete general education requirements or a core curriculum as appropriate to the major field and degree program selected. There is overlap among core curricula and general education requirements, which allows students flexibility in the choice of majors and degree programs.

Every candidate for a baccalaureate degree from the University must:

- A. As specified for the degree sought, complete a foundation curriculum\* (core curriculum or general education requirements) which includes courses to develop quantitative, analytical, and communication skills, and a heightened awareness of human values, cultures and institutions;
- B. Complete a course of studies with a cumulative grade point average of no less than 2.00 for work taken at Case Western Reserve University;
- C. Earn in residence at Case Western Reserve University a minimum of 60 semester hours, of which at least 30 must be earned after the student achieves senior status;
- D. Complete two semesters of physical education. This is normally done in the first year through a combination of half and/or full semester offerings in Lifetime Sports Activities.

\*There are four foundation curricula:

- 1. Arts and Sciences General Education Requirements (page 11)  
Required for the Bachelor of Arts (B.A.) and the following Bachelor of Science (B.S.) degrees: Applied Mathematics, Art Education, Astronomy, Biochemistry, Biology, Chemistry, Geological Sciences, Mathematics, Music Education, Nutrition, Nutritional Biochemistry and Metabolism, Physics, and Statistics.
- 2. Engineering Core Curriculum (page 58)  
Required, for the Bachelor of Science in Engineering (B.S.E.) degree. Required, with specific course exceptions, for the Bachelor of Science (B.S.) degree in Computer Science.
- 3. School of Nursing General Education Requirements (page 69)  
Required of all candidates for the Bachelor of Science in Nursing (B.S.N.) degree.
- 4. Weatherhead School of Management General Education Requirements (page 71) Required of students who are candidates for the Bachelor of Science (B.S.) degree in Accounting or in Management.

## **Minors**

For the degrees described above, minors are not required. However, students have the option of completing a minor in a discipline other than the major, in addition to the major. A minor concentration normally requires 15 - 18 semester hours, and will be indicated on a student's transcript if the requirements, as outlined below, are fulfilled.

### **Minors for Students Majoring in Fields Other Than Engineering**

1. A minor program shall consist of no fewer than 15 and no more than 18 semester hours of specified course work in a discipline other than the student's major.
2. The responsibility for designating the requirements for a minor shall lie with the department offering the minor.
3. For all courses taken to satisfy minor requirements and for which grades are averaged, students pursuing degrees based on the General Education Requirements of the College of Arts and Sciences, the Weatherhead General Education Requirements, or the School of Nursing General Education Requirements must earn a minimum cumulative average of 2.00. Transfer students who wish to complete a minor must complete at Case Western Reserve University at least half the requirements for the minor.

*Note: Students who matriculated prior to Summer, 1995 and are following the Western Reserve Core for the B.A. are required to complete a minor.*

### **Minors for Engineering Majors**

An engineering student's academic work in a discipline other than the student's major may be recognized as a minor. A student will be entitled to have the minor designation recorded on his/her transcript upon successful completion of a basic academic program in a discipline not within the student's major. The completion of a minor academic program does not relieve the student of any requirements for his/her major degree. The following rules govern the minor program for an engineering student:

1. A minor program shall consist of no fewer than 15 and no more than 18 semester hours of course work.
2. The responsibility for designating the requirements for a minor shall lie with the department offering the minor.
3. With the exception of the humanities and social science requirement of the Engineering Core, no more than two courses taken for the minor may be used simultaneously to satisfy the requirements of the student's major field, including department requirements, technical electives and the Engineering Core.
4. An engineering student who chooses to do so may, by taking work that goes beyond the requirement for a three-course sequence in the humanities or social sciences, complete a minor concentration in either of these areas, and count towards the minor up to 12 hours of humanities/social science courses that are also being counted towards the 21 hour humanities/social sciences requirement of the Engineering Core. See minor concentrations on the following page.

### **Application for Graduation**

Students must file an application in the Office of Undergraduate Studies (Baker 102) by the following dates: October 10 for January graduation; December 1 for May graduation; July 13 for August graduation.

Students who have completed all degree requirements at the end of four years or more must graduate at that time. Students completing all requirements in less than four years may choose to graduate early or at the end of four years.

### **Graduation Check**

Students should schedule an appointment for a graduation check in the Office of Undergraduate Studies before they complete scheduling for their final semester prior to graduation to assure that they will meet all requirements for graduation.

## MAJORS/MINORS/SEQUENCES FOR CWRU UNDERGRADUATE DEGREES

**Major - program of ten or more courses (required) \*** = available only as 2<sup>nd</sup> major for B.A.; may be sole major

**Minor - program of five or six courses (optional)** for B.A. student who also completes B.S.

**Sequence - three courses (required for degrees based on Engineering Core):**

HA - Humanities and Arts      SS - Social Sciences

**Foundation - for each degree/major a student must complete the foundation curriculum required for that degree/major:** A&S = based on A&S GER EC = based on Engineering CORE WSOM= based on WSOM GER

FPB=based on School of Nursing general education requirement

### FOUNDATION FOR

| <b>CODE</b> | <b>SUBJECT (DEGREE PROGRAM, page)</b>   | <b>AVAILABLE AS</b>                 | <b>DEGREE/MAJOR</b> |
|-------------|---|-------------------------------------|---------------------|
| ACC         | ACCOUNTING (BS, p. 73)                  | major or minor                      | WSOM                |
| EAR         | AEROSPACE ENGINEERING (BSE, p. 60)      | major                               | EC                  |
| AMS         | AMERICAN STUDIES (BA, p. 14)            | major*, minor or HA sequence        | A&S                 |
| ANT         | ANTHROPOLOGY (BA, p. 15)                | major, minor or SS sequence         | A&S                 |
| APM         | APPLIED MATHEMATICS (BS, p. 40)         | major                               | A&S                 |
| ARE         | ART EDUCATION (BS, p. 16)               | major                               | A&S                 |
| ARH         | ART HISTORY (BA, p. 18)                 | major, minor or HA sequence         | A&S                 |
| ARS         | ART STUDIO (p. 17)                      | minor or HA sequence                | --                  |
| AIN         | ARTIFICIAL INTELLIGENCE (p. 19)         | minor, HA sequence or SS sequence   | --                  |
| ASI         | ASIAN STUDIES (BA, p. 19)               | major, major*, minor or HA sequence | A&S                 |
| AST         | ASTRONOMY (BA or BS, p. 20)             | major or minor                      | A&S                 |
| BCH         | BIOCHEMISTRY (BA or BS, p. 21)          | major or minor                      | A&S                 |
| BIO         | BIOLOGY (BA or BS, p. 22)               | major or minor                      | A&S                 |
| EBI         | BIOMEDICAL ENGINEERING (BSE, p. 60)     | major or minor                      | EC                  |
| ECE         | CHEMICAL ENGINEERING (BSE, p. 61)       | major or minor                      | EC                  |
| CHE         | CHEMISTRY (BA or BS, p. 23)             | major or minor                      | A&S                 |
| CHS         | CHILDHOOD STUDIES (p 24)                | minor                               | --                  |
| CHI         | CHINESE (p. 25)                         | minor or HA sequence                | --                  |
| ECI         | CIVIL ENGINEERING (BSE, p. 62)          | major or minor                      | EC                  |
| CLS         | CLASSICS (BA, p. 25)                    | major, minor or HA sequence         | A&S                 |
| COS         | COMMUNICATION SCIENCES (BA, p. 26)      | major, minor or SS sequence         | A&S                 |
| CLT         | COMPARATIVE LITERATURE (BA, p. 27)      | major, minor or HA sequence         | A&S                 |
| ECM         | COMPUTER ENGINEERING (BSE, p. 63)       | major or minor                      | EC                  |
| CMP         | COMPUTER SCIENCE (BA, p. 27)            | major or minor                      | A&S                 |
| CMP         | COMPUTER SCIENCE (BS, p. 61)            | major or minor                      | EC                  |
| ECO         | ECONOMICS (BA, p. 28)                   | major, minor or SS sequence         | A&S                 |
| EAP         | ELECTRICAL ENGR. (BSE, p. 64)           | major or minor                      | EC                  |
| EGR         | ENGINEERING - undesignated (BSE, p. 65) | major                               | EC                  |
| EPH         | ENGINEERING PHYSICS (BSE, p. 65)        | major                               | EC                  |
| EGL         | ENGLISH (BA, p. 29)                     | major, minor or HA sequence         | A&S                 |
| ENT         | ENTREPRENEURIAL STUDIES (p.74 )         | minor                               | --                  |
| GNV         | ENVIRONMENTAL GEOLOGY (BA, p. 33)       | major                               | A&S                 |
| EST         | ENVIRONMENTAL STUDIES (BA, p. 31)       | major* or minor                     | A&S                 |
| EFT         | FLUID AND THERMAL ENGR (BSE. p. 64)     | major                               | EC                  |
| FRC         | FRENCH (BA, p. 32)                      | major, minor or HA sequence         | A&S                 |
| FRS         | FRENCH STUDIES (BA, p. 33)              | major, minor or HA sequence         | A&S                 |
| GEO         | GEOLOGICAL SCIENCES (BA or BS. p. 33)   | major or minor                      | A&S                 |
| GEM         | GERMAN (BA, p. 34)                      | major, minor or HA sequence         | A&S                 |
| GES         | GERMAN STUDIES (BA, p. 35)              | major                               | A&S                 |
| GER         | GERONTOLOGICAL STUDIES (BA, p. 35)      | major*, minor or SS sequence        | A&S                 |

| <b>CODE</b> | <b>SUBJECT (DEGREE PROGRAM, page)</b>                           | <b>AVAILABLE AS</b>              | <b>FOUNDATION</b> |
|-------------|---|----------------------------------|-------------------|
| HST         | HISTORY (BA, p. 36)   | major, minor or HA sequence      | A&S               |
| HSP         | HISTORY AND PHILOSOPHY OF<br>SCIENCE AND TECHNOLOGY (BA, p. 37) | major                            | A&S               |
| HSS         | HISTORY OF TECHNOLOGY<br>AND SCIENCE (p. 37)                    | minor or HA sequence             | --                |
| HDE         | HUMAN DEVELOPMENT (p. 37)                                       | minor or SS sequence             | --                |
| IST         | INTERNATIONAL STUDIES (BA, p. 38)                               | major                            | A&S               |
| JAP         | JAPANESE (p. 38)  | minor or HA sequence             | --                |
| JPS         | JAPANESE STUDIES (BA, p. 39)                                    | major                            | A&S               |
| MGT         | MANAGEMENT (BS, p. 72)  | major                            | WSOM              |
| MID         | MANAGEMENT INFORMATION &<br>DECISION SYSTEMS (p. 75)            | minor                            | --                |
| EMS         | MATERIALS SCI. & ENGR (BSE, p. 66)                              | major or minor                   | EC                |
| MAT         | MATHEMATICS (BA or BS, p. 39)                                   | major or minor                   | A&S               |
| MAP         | MATHEMATICS & PHYSICS (BS, p.40, p.48)                          | major                            | A&S               |
| EMC         | MECHANICAL ENGR (BSE, p. 67)                                    | major                            | EC                |
| MUS         | MUSIC (BA, p. 41)   | major, minor or HA sequence      | A&S               |
| MUE         | MUSIC EDUCATION (BS, p. 43)                                     | major                            | A&S               |
| NAT         | NATURAL SCIENCES (BA, p. 44)                                    | major* or minor                  | A&S               |
| NUR         | NURSING (BSN, p. 69)  | major                            | FPB               |
| NTR         | NUTRITION (BA or BS, p. 45)                                     | major or minor                   | A&S               |
| NBM         | NUTRITIONAL BIOCHEMISTRY &<br>METABOLISM (BA or BS, p. 46)      | major                            | A&S               |
| PHI         | PHILOSOPHY (BA, p. 47)  | major, minor or HA sequence      | A&S               |
| PHY         | PHYSICS (BA or BS, p. 47)                                       | major or minor                   | A&S               |
| POS         | POLITICAL SCIENCE (BA, p. 49)                                   | major, minor or SS sequence      | A&S               |
| POL         | POLYMER SCIENCE & ENGR.(BSE, p. 65)                             | major or minor                   | EC                |
| PAR         | PRE-ARCHITECTURE (BA, p. 18)                                    | major*, minor or HA sequence     | A&S               |
| PSY         | PSYCHOLOGY (BA, p.49)   | major, minor or SS sequence      | A&S               |
| PPY         | PUBLIC POLICY (p. 50)   | minor                            | --                |
| RLG         | RELIGION (BA, p. 50)  | major, minor or HA sequence      | A&S               |
| RUS         | RUSSIAN (p. 51)   | minor or HA sequence             | --                |
| SOC         | SOCIOLOGY (BA, p. 51)   | major, minor or SS sequence      | A&S               |
| SPA         | SPANISH (BA, p. 52)   | major, minor or HA sequence      | A&S               |
| SPM         | SPORTS MEDICINE (p. 53)   | minor                            | --                |
| STA         | STATISTICS (BA or BS, p. 53)                                    | major or minor                   | A&S               |
| ESC         | SYSTEMS/CONTROL ENGR. (BSE, p. 66)                              | major or minor                   | EC                |
| THR         | THEATER/Acting/Dance/Tech. (BA, p. 54)                          | major, minor or HA sequence      | A&S               |
| UGS         | UNDERGRADUATE SCHOLAR<br>(BA or BS, p. 86)                      | individually designed major      | --                |
| WMN         | WOMEN'S STUDIES (BA, p. 56)                                     | major*, minor, HA or SS sequence | A&S               |

## DEPARTMENT REPRESENTATIVES

Students wishing to declare a major or minor may consult the following academic department representatives for assignment of a departmental adviser or for additional information regarding the Humanities/Social Science sequences. Some departments may designate other faculty as COOP advisers and they are listed in the individual department sections of the Handbook.

| <b>Program</b> | <b>Representative</b> | <b>Office</b>        | <b>Phone</b> | <b>E-mail</b>       |
|----------------|-----------------------|----------------------|--------------|---------------------|
| ACC BS         | Prof. Fogarty         | 663 Enterprise       | 3938         | tjf                 |
| AIN Minor      | Prof. Ernst           | 508 Olin Building    | 2839         | ernst@eecs.cwru.edu |
| AMS BA         | Prof. Carvajal        | 311A Clark Hall      | 2220         | csc3                |
| ANT BA         | Prof. Goldstein       | 238 Mather Memorial  | 2265         | mcg2                |
| ARE BS         | Prof. Shuckerow       | 115 Wickenden Bldg.  | 2714         | txs10               |
| ART BA         | Prof. Landau          | 103 Mather House     | 4119         | exl3                |
| ASI BA         | Prof. Deal            | 112 Mather Memorial  | 2205         | wed                 |
| AST BA/BS      | Prof. Luck            | 414A Smith Bldg.     | 6697         | rel2                |
| BCH BA/BS      | Prof. de Haseth       | W447 Wood Bldg.      | 3684         | pld2                |
| BIO BA/BS      | Dr. Rosenberg         | 210 Biology Bldg.    | 3558         | mjr4                |
| CHE BA/BS      | Prof. Stuehr          | 207 Clapp Hall       | 5099         | jes6                |
| CHI Minor      | Prof. Daley           | 303 Guilford House   | 2303         | mxd43               |
| CHS Minor      | Prof. Russ            | 109 Mather Memorial  | 2814         | swr                 |
| CLS BA         | Prof. Helzle          | 111 Mather House     | 2294         | mxh13               |
| CLT BA         | Prof. Daley           | 303 Guilford House   | 2303         | mxd43               |
| CMP BA/BS      | Prof. Ernst           | 508 Olin Building    | 2839         | ernst@eecs.cwru.edu |
| COS BA         | Prof. Schuele         | 412 Hearing & Speech | 2470         | cms33               |
| EAP BS         | Prof. Garverick       | 511 Glennan Bldg.    | 6436         | slg9                |
| EAP Minor      | Prof. Hazony          | 710A Glennan Bldg.   | 3937         | dxh2                |
| EAR BS         | Prof. T'ien           | 415 Glennan Bldg.    | 4581         | jst2                |
| EBI BS         | Prof. Crago           | 319A Wickenden       | 3977         | pec3                |
| ECE BS         | Prof. Morrison        | 133 Smith Bldg.      | 4238         | pwm5                |
| ECI BS         | Prof. Mullen          | 206 Bingham Bldg.    | 2423         | rlm                 |
| ECM BS         | Prof. Ernst           | 508 Olin Bldg.       | 2839         | ernst@eecs.cwru.edu |
| ECO BA         | Prof. Bogart          | 400 Wickenden Bldg.  | 4296         | wtb                 |
| EFT BS         | Prof. Prah            | 418 Glennan Bldg.    | 2941         | jmp                 |
| EGL BA         | Prof. Stonum          | 106 Guilford House   | 3342         | gxs11               |
| EGR BS         | Prof. Feke            | 312 Glennan Bldg.    | 4436         | dlf4                |
| EMC BS         | Prof. Prah            | 418 Glennan Bldg.    | 2941         | jmp                 |
| EMS BS         | Prof. DeGuire         | 506 White Bldg.      | 4221         | mrd2                |
| ENT Minor      | Prof. Deeds           | 540 Sears Bldg.      | 6008         | dxd52               |
| EPH BS         | Prof. Singer          | 307A Yost Hall       | 2892         | kds4                |
| EST BA         | Prof. McCall          | 211C Smith Bldg.     | 3676         | plm4                |
| ESY BS         | Prof. Sreenath        | 608 Olin Bldg.       | 6219         | nxs6                |
| FRC BA         | Prof. Daley           | 303 Guilford House   | 2303         | mxd43               |
| FRS BA         | Prof. Daley           | 303 Guilford House   | 2303         | mxd43               |
| GEO BA/BS      | Prof. Banks           | 212 Smith Bldg.      | 3765         | pob                 |

| <b>Program</b> |       | <b>Representative</b> | <b>Office</b>          | <b>Phone</b> | <b>E-mail</b>      |
|----------------|-------|-----------------------|------------------------|--------------|--------------------|
| GEM            | BA    | Prof. Daley           | 303 Guilford House     | 2303         | mxd43              |
| GER            | BA    | Prof. Deimling        | 223C Mather Memorial   | 5173         | gtd                |
| GES            | BA    | Prof. Daley           | 303 Guilford House     | 2303         | mxd43              |
| GNV            | BA    | Prof. Banks           | 212 Smith Bldg.        | 3765         | pob                |
| HDE            | Minor | Prof. Settersten      | 226 Mather Memorial    | 2697         | ras2               |
| HSP            | BA    | Prof. Rocke           | 207 Mather House       | 2614         | ajr                |
| HSS            | Minor | Prof. Pursell         | 216 Mather House       | 2261         | cxp7               |
| HST            | BA    | Prof. Ledford         | 208 Mather House       | 4144         | kx115              |
| IST            | BA    | Prof. McHale          | 113 Mather House       | 2424         | vem                |
| JAP            | Minor | Prof. Hagiwara        | 203 Guilford House     | 6188         | txh13              |
| JPS            | BA    | Prof. Hagiwara        | 203 Guilford House     | 6188         | txh13              |
| MAP            | BS    | Prof. Singer          | 307A Yost Hall         | 2892         | das5               |
| MAP            | BS    | Prof. Chottiner       | 104D Rockefeller       | 4024         | gsc2               |
| MAT            | BA/BS | Prof. Singer          | 307A Yost Hall         | 2892         | das5               |
| MGT            | BS    | Prof. Previts         | 625 Enterprise Hall    | 2074         | gjp                |
| MGT            | BS    | Mr. Carduff           | 341 Enterprise Hall    | 1093         | kcc                |
| MID            | Minor | Prof. Chung           | 670 Enterprise Hall    | 4640         | isdept@po.cwru.edu |
| MUE            | BS    | Prof. Dunn            | 305 Haydn Hall         | 2496         | red5               |
| MUS            | BA    | Prof. Quereau         | Haydn Hall             | 2410         | qxq                |
| NAT            | BA    | Dr. Westin            | 102 Baker Bldg.        | 2928         | jxw3               |
| NBM            | BA/BS | Prof. Barkoukis       | 201 Dental School      | 2440         | hdb                |
| NTR            | BA/BS | Prof. Cicirella       | 201 Dental School      | 2440         | mmc3               |
| NUR            | BSN   | Dr. Roberts           | 1060 School of Nursing | 2541         | blr4               |
| PAR            | Minor | Prof. Shuckerow       | 115 Wickenden Bldg.    | 2714         | txs10              |
| PHI            | BA    | Prof. McLarty         | 201 Guilford House     | 4476         | cxm7               |
| PHY            | BA/BS | Prof. Chottiner       | 104D Rockefeller       | 4024         | gsc2               |
| POL            | BS    | Prof. Hudson          | 337 Kent Hale Smith    | 6373         | sdh6               |
| POS            | BA    | Prof. McHale          | 113 Mather House       | 2424         | vem                |
| PPY            | Minor | Prof. McHale          | 113 Mather House       | 2424         | vem                |
| PSY            | BA    | Prof. Greene          | 124 Mather Memorial    | 6473         | rlg2               |
| RLG            | BA    | Prof. Deal            | 112 Mather House       | 2205         | wed                |
| RUS            | Minor | Prof. Daley           | 303 Guilford House     | 2303         | mxd43              |
| SOC            | BA    | Prof. Deimling        | 223C Mather Memorial   | 5173         | gtd                |
| SOC            | BA    | Prof. Hinze           | 221 Mather Memorial    | 2702         | sxh3               |
| SOC            | BA    | Prof. Schrimsher      | 223D Mather Memorial   | 8847         | kps5               |
| SOC            | BA    | Prof. Stoller         | 224 Mather Memorial    | 2638         | eps3               |
| SPA            | BA    | Prof. Nanfito         | 302 Guilford House     | 3071         | jcn                |
| SPM            | Minor | Prof. Gray            | Veale Center           | 5280         | nmg                |
| STA            | BA/BS | Prof. Fitzgibbon      | 321 Yost Hall          | 2306         | paf3               |
| THR            | Dance | Prof. Potter          | Mather Dance Center    | 2854         | klp13              |
| THR            | Drama | Prof. Albers          | Eldred Theater         | 5926         | cla2               |
| UGS            | BA/BS | Dean Dodd             | 102 Baker Bldg.        | 2928         | tmd6               |
| WMN            | BA    | Prof. Sadowski        | 204 Mather House       | 2622         | jas34              |

# COLLEGE OF ARTS AND SCIENCES

Samuel M. Savin, Interim Dean  
712 Crawford Hall, Ext. 4413  
E-mail: sms7@po.cwru.edu

## Degrees and Degree Requirements

### Bachelor of Arts (B.A.) Degree - College of Arts and Sciences

The University offers programs in Arts, Humanities, Mathematics, Natural Sciences, Social and Behavioral Sciences, Nutrition, and Statistics, leading to the B.A. degree from the College of Arts and Sciences. Candidates for the Bachelor of Arts degree, in addition to meeting the general requirements for bachelor's degrees as described on page 4, must also complete the following requirements:

- A. A minimum of 120 semester hours earned.
  1. No more than 42 hours beyond the 100 level in any one department may be applied to the 120 hours total.
  2. The 120 semester hours must include at least 90 semester hours in arts and sciences. These credits may be drawn from those offered by the College of Arts and Sciences as well as those in economics, biochemistry, nutrition and computer science. (Students completing both a B.A. and B.S. degree are exempt from 6 hours of the 90 hour arts and sciences requirement for the B.A.)
- B. The General Education Requirements of the College of Arts and Sciences.
- C. A minimum of 30 semester hours of courses at the 300-400 level.
- D. The requirements for a major as specified in this handbook. A major concentration requires a minimum of 30 semester hours, at least 24 of which are taken in the major department. For all courses taken in the major department and for which grades are averaged, and for all courses taken to satisfy major requirements and for which grades are averaged, a B.A. candidate must earn a minimum cumulative average of 2.00. Major requirements include all required and elective work completed in the major department combined with required courses completed in related fields. Transfer students must complete at Case Western Reserve University at least half the hours required for the major, including half the hours required in the major department.

### Bachelor of Science (B.S.) Degree - College of Arts and Sciences

The Bachelor of Science degree based on the Arts and Sciences General Education Requirements is awarded in the following areas: Applied Mathematics, Art Education, Astronomy, Biochemistry, Biology, Chemistry, Geological Sciences, Mathematics, Mathematics and Physics, Music Education, Nutrition, Nutritional Biochemistry and Metabolism, Physics, and Statistics. Candidates for the Bachelor of Science degrees, in addition to meeting the general requirements for bachelor's degrees as described on page 4, must also complete the following requirements:

- A. A minimum of 120-134 hours as specified by the requirements for each B.S. program.
- B. The Arts and Sciences General Education Requirements. For some B.S. programs, the Arts and Sciences General Education Requirements have been modified and incorporated into the degree requirements as presented in this handbook.
- C. A minimum of 30 semester hours of courses at 300-400-level.
- D. The requirements for a major field as presented in this handbook in the section devoted to each program. For all courses taken in the major department and for which grades are averaged, a candidate for a B.S. from the College of Arts and Sciences must earn a minimum cumulative average of 2.00. Major requirements include all required and elective work completed in the major department combined with required courses completed in related fields. Transfer students must complete at Case Western Reserve University at least half the hours required for the major, including half the hours required in the major department.

## Arts and Sciences General Education Requirements

General Education Requirements of the College of Arts and Sciences provide a broad educational foundation for programs in humanities and arts, social and behavioral sciences, and mathematics and natural sciences, leading to the Bachelor of Arts or the Bachelor of Science degree. The areas in which courses are required are indicated below. This information is subject to addition. An updated list is published annually in the Handbook for Undergraduate Students.

### The following regulations govern the choice of courses to fulfill Arts and Sciences General Education Requirements:

- No more than nine hours from any one department may be used for the satisfaction of the Arts and Sciences General Education Requirements.
- No single course may fulfill more than one of the Arts and Sciences General Education Requirements.
- Students completing more than one major, or completing a major and one or more minors, classified under different general headings (natural sciences and mathematics, arts and humanities, social sciences) are exempt from a maximum of six semester hours of arts and sciences general education requirements. Specifically, students who complete two majors are exempt from six hours of general education requirements in the area of one of the majors or from three hours of general education requirements in each of the areas of the two majors. Students completing a minor are exempt from six hours of general education requirements in the area of the minor.
- In some areas students must complete an approved two-course sequence. Courses that are approved to serve as the first course in a sequence are shown in boldface. Courses that can serve for completion of a sequence in the same department follow each such course in parentheses.

**1. The English Composition Requirement** (3 semester hours) ENGL 150. To be completed by the end of the first year with a grade of C or higher. Students having transfer credit for an English composition course taken at a US college/university and passed with a C or better must pass an English Placement Test administered by the Department of English or earn a grade of C or higher in ENGL 180, a one-credit writing tutorial.

**2. Natural and Mathematical Sciences** (12 semester hours total) Students must complete at least three semester hours in area a) Mathematical Reasoning and Analysis, three semester hours in area b) Natural Sciences, and an additional course making an approved sequence in area a) or area b). An additional course taken to fulfill the 12 hour requirement may come from area a), b), or c) Science and Society.

a) *Mathematical Reasoning and Analysis* (3 semester hours minimum): courses in which students engage in step-by-step reasoning and computation using mathematical methods for discovery and for solving problems.

**MATH 121 or 123 or 125** (Each of these courses will usually be followed by a course identified as Part II to constitute a sequence. However, students not wishing to continue into a Part II course may complete a sequence through the use of any of the statistics courses listed below, or PHIL 201).

**MATH 150** (ANTH 319\*, PHIL 201, PSCL 282\*, STAT 201\*)

**STAT 201\* or ANTH 319\* or PSCL 282\*** (any of the above mathematics courses, or PHIL 201, or PSCL 375)

**PHIL 201** (any of the above mathematics courses, or any of the above statistics courses)

\*A student completing successfully any one of these three courses is not eligible to enroll in or receive credit for either of the other two.

- b) *Natural Sciences* (3 semester hours minimum): courses that survey the identification, description, experimental investigation, and theoretical examination of physical or biological phenomena.  
**ANTH 105** (ANTH 295, 301, 369, 393, 395)  
**ASTR 201 or 202 or 204 or 205 or 221** (second course from those listed here or ASTR 222)  
**BIOL 110** (BIOL 101, 220)  
**CHEM 105 or CHEM 111** (CHEM 106)  
**GEOL 101 or 110 or 115 or 117** (second course from those listed here or GEOL 210 or 220)  
**PHYS 100** (101)  
**PHYS 115** (101 or 116) **or 121** (101 or 122) **or 123** (101 or 124)
- c) *Science and Society* (0 - 3 semester hours): courses that broadly examine the social cultural aspects or implications of science and/or technology.  
 ANTH 215, 317, 337, 363; BIOL 103; ESCI 340; ESTD 387; GEOL 105 or 202; HSTY 151, 152, 201, 202, 395; PHIL 225 or 309; PHIL/RLGN 271; PHYS/POSC 196; RLG 206
- 3. Arts and Humanities** (12 semester hours total) Students must complete at least three semester hours in each of the areas below, and an additional three-hour course making an approved sequence in one of the areas.
- a) *The Arts* (3 semester hours minimum): courses which serve as an introduction to art, music, and theater.  
**ARTH 100 or 200-level** (Any other 100 or 200-level ARTH course)  
**MUSC 221 or 321\*** (MUSC 222 OR 322\*)  
**THTR 123 or 124** (the other of these two)  
 \* For music majors only
- b) *History, Philosophy, and Religion* (3 semester hours minimum): courses that cover historical change, philosophical or religious ideas and works, and the methods and concepts of these disciplines.  
**AMST 117** (AMST 217)  
**CLSC 111** (CLSC 112, 202, 302)  
**CLSC 112** (CLSC 111, 304)  
**CLSC 201** (CLSC 302, 304)  
**HSTY 112 or 113** (HSTY 112 or 113, 125, 135, 151, 152, 200, 204, 210, 211, 212, 221, 222, 253, 255, 256, 257, 258, 260, 261, 262, 264, 265, 266, 268, 272, 281, 282, 285, 348)  
**PHIL 101** (PHIL 204, 205, 302, 304, 305, 330, 334, 345, 370)  
**PHIL 205** (PHIL 304, 305)  
**RLGN 102 or 120 or 201 or 202 or 203 or 204 or 207 or 223 or 254** (any of those listed or RLG 206, 217, 231, 235, 266, 300, 301, 303, 306, 309, 314, 325, 332, 341, 366)
- c) *Literature and Language* (3 semester hours minimum): language courses beyond the first year level, and courses that serve as an introduction to important literary works and to the methods and concepts of literary study.  
**CLSC 203 or 204** (CLSC 203 or 204, 314)  
**CMPL 211 or 212** (the other of these two)  
**CMPL 290 or 291** (the other of these two)  
**ENGL 200 or ENGL 255 or 256** (one of the remaining two)  
**Foreign Languages - any 200 or higher level course in a foreign language** (any other 200 or higher level course in the same language)  
**GREK 201 or above except 395**  
**LATN 202 or above except 395**

**4. Social Sciences** (9 semester hours) Students must complete three semester hours in each area listed below, and an additional three-hour course making an approved sequence in one of the areas. Of the 9 hours, no more than 6 may be from a single department.

a) *Social Institutions* (3 semester hours minimum): courses that introduce students to the methods and concepts in the social sciences relevant to the understanding of organizational or societal functioning.

**ANTH 102 or 103 or 107** (either of the remaining two)

**ECON 102 or 103 or 205** (either of the remaining two)

**MUSC 241** (for music education majors only)

**POSC 109 or 260** (POSC 308, 310, 320E, 321, 325, 326, 327, 328, 360B, 367, 370J, 386)

**SOCI 113** (SOCI 204, 300, 302, 312, 349, 355E)

b) *Human Behavior and Development*: (3 semester hours minimum): courses that introduce students to the methods and concepts in the social sciences relevant to understanding individual or family functioning:

**ANTH 102** (ANTH 304, 306, 309, 318, 340, 342, 345, 371, 375, 386)

**COSI 100** (COSI 200, 220, 236, 300, 332, 336)

**COSI 109** (COSI 211, 220, 313, 345)

**PSCL 101** (PSCL 102, 230, 313, 315, 321, 352, 353, 355, 357)

**SOCI 112 or 310** (SOCI 203, 208, 222, 361, 369)

**5. Global and Cultural Diversity** (3 semester hours) From approved courses designed to develop students' awareness of their cultural assumptions and to expand their understanding of cultural issues, students must complete a three-hour course which focuses on a culture outside the United States and Europe or on ethnic or cultural differences and/or interactions within or outside the United States.

ANTH 314, 352, 353, 356, 357;

ARTH 203;

CMPL 230, 250, 275;

COSI 260;

ECON 335, 375;

ENGL 363H, 365E, 365N, 365Q, 366G;

FRCH 375;

HSTY 113, 131, 135, 258, 260, 261, 262, 268, 281, 282, 285, 321;

PHIL 356;

POSC 360D, 360E, 366, 370K, 374, 379;

RLGN 120, 204, 217, 223, 254, 303, 314;

SOCI 302, 326;

SPAN 303, 339, 342, 343;

any 200 or 300-level course in Chinese, Japanese, or Russian.

## Undergraduate Programs of The College of Arts And Sciences

*All major programs described in this section require completion of the Arts and Sciences General Education Requirements (see page 11). Students who matriculated prior to fall, 2000 may complete degree programs in arts and sciences as described in this handbook, or may complete degree programs as prescribed by the handbook published in the year in which they matriculated.*

### ACCOUNTING (ACC)

Major and minor programs in accounting are offered through the Weatherhead School of Management. See page 73.

### AMERICAN STUDIES (AMS)

Academic Representative and Program Director:  
Professor Christa Carvajal  
311A Clark Hall, Ext. 2220  
E-mail: csc3@po.cwru.edu

#### Major (for B.A.)

Hours: 36

#### A. Required Courses (6 hours)

AMST 117 and 217

#### B. Elective Courses (30 hours)

From an approved list of courses, students are to choose 30 hours making certain that these represent at least two disciplines, though no more than four; or courses may constitute at least two but no more than three areas of concentration. Areas of concentration may consist of courses from more than one department and may center on an issue or theme in American cultures. Students will be advised by either the Director or the Associate Director of American Studies.

**NOTE:** *No more than one course being used to satisfy the requirement (B) for the two areas of concentration may apply simultaneously toward the completion of a minor concentration.*

**NOTE:** *American Studies is available only as a second major for the B.A. To declare the major students should have declared a first major and have sophomore or junior standing. Up to six credits in courses taken by students for the first major may be applied to American Studies major.*

*For a student who completes a Bachelor of Science degree (B.S., B.S.E., or B.S.N.), American Studies may serve as the sole major for a B.A. degree.*

#### Minor

Hours: 15

AMST 117, AMST 217 and three additional courses selected in consultation with the Program Director.

#### Humanities Sequence (for B.S. based on Engineering Core)

Hours: 9

AMST 117 and 217 plus one additional course selected in consultation with the Program Director.

#### Independent Study

AMST 390

## ANTHROPOLOGY (ANT)

Academic Representatives:  
Professor Melvyn Goldstein  
Mather Memorial, Rm 238  
E-mail: mcg2@po.cwru.edu

Concentrations for the major (for B.A.) Hours: 36

### A. General Anthropology Concentration

- 1) ANTH 102, 103
- 2) ANTH 319
- 3) At least one course dealing with a geographic area, such as:  
ANTH 330, 331, 341, 352, 353, 356, 357
- 4) Approved Anthropology electives: 24 semester hours

### B. Health Science Oriented Anthropology Concentration

 Hours: 36

- 1) ANTH 102, 103, 215
- 2) ANTH 319
- 3) At least one course dealing with a geographic area, such as:  
ANTH 330, 331, 341, 352, 353, 356, 357
- 4) At least three courses dealing with health-related topics, such as:  
ANTH 301, 304, 306, 309, 318, 351, 359, 365, 369, 371, 376, 393, 397
- 5) Approved Anthropology electives: 12 semester hours

### C. Archaeology Concentration

 Hours: 36

- 1) ANTH 102, 103, 107
- 2) ANTH 319
- 3) At least one course dealing with a geographic area such as:  
ANTH 302, 330, 331, 341, 352, 353, 356, 357
- 4) Three approved Archaeology courses selected from:  
ANTH 202, 321, 324, 330, 331, 333, 399, Summer Field Work
- 5) Four Approved Electives: 12 semester hours

### D. Physical Anthropology Concentration

 Hours: 36

- 1) ANTH 102, 103
- 2) ANTH 319
- 3) At least one course dealing with a geographic area such as:  
ANTH 330, 331, 341, 352, 353, 356, 357
- 4) At least three courses dealing with Physical Anthropology, selected from:  
ANTH 295, 301, 302, 369, 375, 393, 397; ANAT 383, 393
- 5) Approved Anthropology electives: 15 semester hours

Concentrations for the minor Hours: 15

### A. General Anthropology Minor

- 1) ANTH 102 and 103
- 2) At least one course dealing with a geographic area such as:  
ANTH 330, 331, 341, 352, 353, 356, 357
- 3) Two approved electives: 6 semester hours

### B. Health Science Oriented Anthropology Minor

 Hours: 15

- 1) ANTH 102, 103, and 215
- 2) One course dealing with a geographic area such as:  
ANTH 330, 331, 341, 352, 353, 356, 357
- 3) One courses dealing with health-related topics such as:  
ANTH 301, 304, 306, 309, 318, 351, 359, 365, 369, 371, 376, 393, 397

## ANTHROPOLOGY (continued)

C. Archaeology Minor Hours: 15

- 1) ANTH 102, 103, 107
- 2) At least one course dealing with a geographical area such as:  
ANTH 330, 331, 341, 352, 353, 356, 357
- 3) At least one approved Archaeology elective selected from:  
ANTH 202, 321, 324, 330, 331, 333, 399, Summer Field Work

D. Physical Anthropology Concentration Hours: 15

- 1) ANTH 102, 103
- 2) At least one course dealing with a geographic area selected from:  
ANTH 330, 331, 341, 352, 353, 356, 357
- 3) At least two approved Physical Anthropology electives:  
ANTH 295, 301, 302, 369, 375, 393, 397; ANAT 377, 383

Social Science Sequence (for B.S. based on Engineering Core) Hours: 9

ANTH 102 or 103

Two other courses, at least one of which must be 300-level

Independent Study:

ANTH 399

## ART EDUCATION (ARE), ART STUDIO (ARS) AND PRE-ARCHITECTURE (PAR)

Academic Representative:

Professor Timothy Shuckerow

115 Wickenden, Ext. 2714

E-mail: txs10@po.cwru.edu

**ART EDUCATION (ARE) (B.S.)** Hours: 123

*(based on modified Arts and Sciences General Education Requirements)*

The Bachelor of Science program in Art Education is conducted jointly by Case Western Reserve University and The Cleveland Institute of Art. Admission to the program requires application to CWRU and presentation of an art portfolio to the Institute. Credentials must be acceptable to both institutions. Usually, academic work is taken at CWRU and studio work is taken at the Institute. To enter student teaching, a 2.50 cumulative grade point average and a total of 300 contact hours of clinical field-based experience are required. To complete successfully the teacher training program, a 3.00 grade point average must be maintained in professional education courses and an overall grade point average of 2.50 is required. In addition to these requirements, the State of Ohio requires passing scores on the Principles of Learning and Teaching (PLT) and Art Specialty sections of the National Teacher Examination. Upon satisfactory completion of both University and State requirements, the student is recommended by the University Director of Teacher Licensure for the Ohio Provisional Visual Arts Specialist (Pre-K-12) Licensure to teach art in the public schools in Ohio and reciprocating states. **Completion of the B.S. in Art Education degree exists separately from the assurance that the State of Ohio's Provisional Visual Arts Specialist Teacher Licensure will be awarded.**

## ART EDUCATION (continued)

Academic courses at CWRU (\* indicates courses fulfilling Arts and Sciences General Education Requirements)

|  | <u>Hours</u> |
|--|--------------|
| *ENGL 150  | 3.0          |
| PHED (two semesters - Lifetime Sports Activities)                                  | 0.0          |
| *A&S General Education Requirement: Mathematics                                    | 3.0          |
| *A&S General Education Requirement: Natural Sciences                               | 3.0          |
| *A&S General Education Requirement: Natural Sciences <i>or</i> Science and Society | 3.0          |
| *Art History 101, 102  | 6.0          |
| *A&S General Education Requirement: History, Philosophy, Religion                  | 6.0          |
| *PSCL 101, EDUC 304  | 6.0          |
| *A&S General Education Requirement: Global and Cultural Diversity                  | 3.0          |
| ARTS 295, 300, 385, 386, 387, 393, 366A, 366B, 465                                 | 24.0         |
| EDUC 301   | 3.0          |
| ARTH electives (one must be at 300-level)  | 6.0          |
| ENGL elective (300-level)  | 3.0          |
| One open elective (300-level)  | 3.0          |

### Art Studio courses at The Cleveland Institute of Art

|                                       |      |
|---------------------------------------|------|
| Computer Basics 101, 201              | 3.0  |
| Design 107, 108, 209                  | 9.0  |
| Drawing 117, 118, 217                 | 9.0  |
| Painting 121, 122, 210                | 9.0  |
| Sculpture 227                         | 3.0  |
| Five Studio electives at 3 hours each | 15.0 |
| CIA Open Elective                     | 3.0  |

## ART STUDIO (ARS)

### Concentration for the minor

Hours: 18

*(cannot substitute for the Humanities Sequence requirement for the Engineering Core)*

A. Art Studio (ARTS): 18 hours in Art Studio, including ARTS 101 and 106

At least two of the remaining courses should be in one area (i.e. drawing, painting, design, ceramics, etc.)

B. Photography (ARTS): 18 hours including ARTS 220, 320, 322, 325, 365, 399

### Humanities Sequence (for B.S. based on Engineering Core)

Hours: 12

A. Art Studio

1. ARTH 101, 102 or two approved Art History electives

2. ARTS 101, 106

B. Photography

1. ARTH 101, 102 or two approved Art History electives

2. ARTS 220 plus one of the following: 320, 322

### Independent Study:

ARTS 399

## PRE-ARCHITECTURE (PAR)

Academic Representative:  
Professor Timothy Shuckerow  
115 Wickenden, Ext. 2714  
E-mail: txs10@po.cwru.edu

### Major (for B.A.)

Hours: 30-39

1. Art History: 12 hours including ARTH 101, 102
2. Art Studio: 15 hours including ARTS 106, 302, 303
3. One approved 3 hour elective course selected from American Studies, Anthropology, Civil Engineering, Geological Sciences, History of Technology and Science, or Sociology in consultation with the major adviser

*NOTE: Students who plan to pursue graduate studies in architecture may replace No. 3 above with 12 hours selected from MATH 125, 126 and PHYS 115, 116 or 121, 122. The 12 hours must include at least one course each in mathematics and physics.*

*NOTE: The Pre-Architecture major is available only as a second major for the B. A.*

*For a student who completes a Bachelor of Science degree (B.S., B.S.E., or B.S.N.), Pre-Architecture may serve as the sole major for a B.A. degree.*

### Concentration for the minor

Hours: 18

ARTH 101, 102; ARTS 106, 302, 303 and one approved elective

### Humanities Sequence (for B.S. based on Engineering Core)

Hours: 15

ARTH 101, 102 and ARTS 106, 302, 303

## ART HISTORY (ARH)

Academic Representative:  
Professor Ellen Landau  
103 Mather House, Ext. 4119  
E-mail: ex13@po.cwru.edu

### Major (for B.A.)

- A. ARTH: 30-33 hours including Hours: 36
1. ARTH 101, 102 (6 hours)
  2. Six hours at 200-level to be taken in junior year.
  3. ARTH 396 Majors Seminar (3 hours) to be taken in senior year
  4. 15-18 hours of electives in ARTH at the 300-level
- B. ARTS: 3-6 hours of ARTS courses selected in consultation with the adviser.

Two years of a foreign language (preferably German) recommended for those who intend to pursue professional interests in art history

### Concentration for the minor

Hours: 18

18 hours of Art History including ARTH 101, 102

### Humanities Sequence (for B.S. based on Engineering Core)

Hours: 9

Any 3 Art History courses at the 100 or 200-level

### Independent Study

ARTH 398

## ARTIFICIAL INTELLIGENCE (AIN)

Academic Representative:  
Professor George W. Ernst  
508 Olin Building, Ext. 2839  
E-mail: ernst@eecs.cwru.edu

### Minor

Hours: 15

A. ECES 391, ENGR 131 followed by completion of one of the tracks described below.

B. Track 1 - Technology Track

Three courses selected from the following: BIOL 373, 374, BIOL/ECES 375, 475, 478, 479, ECES 411, ECES/EEAP 484, 491, 591, EEAP 485, 489, 531, 589, ESCI 352, 450, PHIL 201, 306.

Track 2 - Cognitive Science Track

Three courses selected from the following: BIOL 373, 374, BIOL/ECES 478, 479, ENGL 301, PHIL 201, 306, PSCL 101, 352, 353, 355, 357, 370, 402.

### Humanities or Social Science Sequence\*

Hours: 15

(for B.S. based on Engineering Core)

A. ECES 391, ENGR 131

B. Three courses from the following: ENGL 301, PHIL 201, 306, PSCL 101, 352, 353, 355, 357, 370, 402

\* ***will be identified by the adviser as a humanities or social science sequence on the basis of the courses taken***

## ASIAN STUDIES (ASI)

Academic Representative:  
Professor William Deal  
112 Mather House, Ext. 2205  
E-mail: wed@po.cwru.edu

### Major (for B.A.)

Students choose either Track 1 or Track 2

#### Track 1 (first major)

Hours: 37

A. ASIA 133 and ASIA 134 (xlist: HSTY 133 and HSTY 134)

B. At least 16 hours in an Asian language

C. 3 hours in Anthropology (Asia-related)

D. 3 hours in Political Science or Economics (Asia-related)

E. 3 hours in religion (Asia-related)

F. 6 additional hours (Asia-related) selected in consultation with the Program adviser

#### Track 2 (can only be taken as a second major)

Hours: 36

A. ASIA 133 and ASIA 134 (xlist: HSTY 133 and HSTY 134)

B. 6 hours in Anthropology (Asia-related: ANTH 352 and ANTH 353 suggested)

C. 6 hours in Religion (Asia-related: RLGN 204 and RLGN 217 suggested)

D. 3 hours in Comparative Literature (Asia-related)

E. 3 hours in Political Science or Economics (Asia-related)

F. 12 additional hours (Asia-related) selected in consultation with the Program adviser

## ASIAN STUDIES (continued)

Minor Hours: 18

- A. ASIA 133 or ASIA 134 (xlist: HSTY 133 or HSTY 134)
- B. 15 additional hours (Asia-related) selected in consultation with the Program adviser  
Only one year (8 credits) of Asian language study counts toward the minor.

Humanities Sequence (for B.S. based on Engineering Core) Hours: 9

- A. ASIA 133 or ASIA 134 (xlist: HSTY 133 or HSTY 134)
- B. 6 additional hours (Asia-related) selected in consultation with the Program adviser.

Independent Study

ASIA 399

## ASTRONOMY (AST)

Academic Representative:

Professor R. Earle Luck

414 A. W. Smith Bldg., Ext. 6697

E-mail: luck@grendel.astr.cwru.edu

Major (for B.A.) Hours: 63  
(17 ASTR)

- A. Core Astronomy courses  
ASTR 221, 222, 306, 309, 310, 311, 328
- B. Additional required courses:  
MATH 121 (or 123), 122 (or 124), 223 (or 227), 224 (or 228)  
PHYS 121 (or 123), 122 (or 124), 221, 250, 310, 313, 324, 326, 331  
STAT 312  
ENGR 131

Major (for B.S.) Hours required for graduation: 125

- A. Core Astronomy courses (20 hours)  
ASTR 221, 222, 306, 309, 310, 311, 323, 328
- B. Additional required courses:  
MATH 121 (or 123), 122 (or 124), 223 (or 227), 224 (or 228)  
PHYS 121 (or 123), 122 (or 124), 203, 221, 204, 250, 310, 313, 324, 325, 326, 331, 332  
STAT 312  
ENGR 131

Concentrations for the minor Hours: 15-17

- A. For physical science majors:  
ASTR 221, 222, and three of the following: ASTR 306, 311, 323, 328
- B. For non-physical science majors:  
ASTR 221, 222, PHYS 115, 116 and one of the following: ASTR 306, 311, 323, 328

## BIOCHEMISTRY (BCH)

Academic Representatives:  
Professor Pieter de Haseth  
W447 Wood Building, Ext. 3684  
E-mail: pld2@po.cwru.edu

Cooperative Education Adviser:  
Professor Menachem Shoham  
W509 Wood Building, Ext. 4665  
E-mail: mxs10@po.cwru.edu

### Major (for B.A.)

Hours: 67  
(19 BIOC)

- A. Biochemistry courses (19 hours)  
BIOC 307, 308, 371, 372  
BIOC elective (312, 334, or approved equivalent)  
2 approved technical electives in biochemistry (6 hours)
- B. Additional required courses
- 1) BIOL 110, 210, 211, 326
  - 2) CHEM 105, 106, 113, 223, 224, (or 323, 324), 233, 234, 301
  - 3) MATH 125, 126 (or 121, 122)
  - 4) PHYS 115, 116 (or 121, 122), including laboratory

### Major (for B. S.)

Hours required for graduation: 129-130

- A. Biochemistry courses (19 hours)  
BIOC 307, 308, 312, 334, 371, 372  
1 approved technical elective in biochemistry (3 hours)
- B. Additional required courses:
- 1) BIOL 110, 210, 211, 326
  - 2) CHEM 105, 106, 113; 223 and 224 (or 323 and 324); 301 and 302 (or 335 and 336); 321 and 322 (or 233, 234, and 304)
  - 3) ENGR 131
  - 4) MATH 121 (or 123); 122 (or 124); 223 (or 227); 224 (or 228)
  - 5) PHYS 121 (or 123), 122 (or 124), including laboratory, 221
  - 6) Statistics/data analysis elective (ECES 251, PHYS 250, STAT 312, 313 or equivalent)

### Minor

Hours: 43

- A. Biochemistry courses (11 hours)  
BIOC 307, 308, and either BIOC 312 or 334
- B. Required courses in Biology, Chemistry, and Mathematics include:
- 1) BIOL 110, 210
  - 2) CHEM 105, 106, 113, 223 (or 323), 224 (or 324), 233, 234
  - 3) MATH 125, 126 (or 121, 122)

### Independent Study:

BIOC 391 (**Can only be taken on a Pass/No Pass basis.**)

### Cooperative Education

Optimal times: Third Year - Spring/Summer  
Fourth Year - Summer Fifth Year - Fall

## BIOLOGY (BIO)

Academic Representative:  
Dr. Martin J. Rosenberg  
210 Morley Bldg., Ext. 3558  
E-mail: mjr4@po.cwru.edu

Cooperative Education Adviser:  
Professor Morris Burke  
305N Morley, Ext. 6652  
E-mail: mxb18@po.cwru.edu

### Major (for B.A.)

Hours: 62  
(30 BIOL)

- A. Biology courses (30 hours)
1. Core courses: BIOL 110, 205, 210, 220, 310
  2. Four laboratory courses chosen as follows:
    - a. any two of BIOL 111, 211, 221
    - b. any 300-level or higher BIOL lab (except 346, 388, 390)
    - c. any other BIOL lab (except 346, 388, 390)
- NOTE: The combination of BIOL 305 and BIOL 335 fulfills one 300-level lab requirement.
3. Biology electives: 6-9 hours - at least 6 must be 300-level or above
- B. Additional required courses (32 hours)
1. Chemistry: CHEM 105, 106, 113, 223 (or 323), 224 (or 324), 233
  2. Calculus: MATH 125, 126 (or 121, 122)
  3. Physics: PHYS 115, 116 or equivalent

### Major (for B.S.)

Hours required for graduation: 120

- A. Biology courses (39 hours)
1. Core courses: BIOL 110, 205, 210, 220, 310
  2. Five laboratory courses chosen as follows:
    - a. BIOL 211, 221, 315
    - b. Two additional 300-level labs (except 346, 388, 390)
  3. BIOL 301 or 326
  4. Undergraduate Research—BIOL 388, 390 and 395
  5. Biology elective: one 300-level or higher lecture course in Biology.
- B. Additional required courses:  
CHEM 105, 106, 113  
CHEM 223, 224, and 233 (or CHEM 323, 324, and 233) and CHEM 301  
ENGR 131  
MATH 125, 126 (or 121, 122, but 125, 126 preferred)  
MATH 201 or 225 or an approved statistics course  
PHYS 115, 116

### Adolescent to Young Adult Licensure, Life Science:

- A. Completion of required Biology courses.  
For information, contact Dr. Martin Rosenberg, the department academic representative.
- B. Completion of required Education courses.  
(see Education-Teacher Licensure Program on page 28)

**NOTE:** for more information about licensure programs, see Professor Phil Safford, adviser for the CWRU/John Carroll University Joint Program in Teacher Licensure.

## **BIOLOGY (continued)**

### Minor

Hours: 16

BIOL 110, 111, and 11 additional hours of biology, 6 of which must be 200-level or above

### Independent Study

BIOL 388, 389, 390 (**BIOL 390 can only be taken on a Pass/No Pass basis**)

### Cooperative Education

Optimal Time: Third Year - Spring/Summer Fourth Year - Fall

## **CHEMISTRY (CHE)**

Academic Representative and Cooperative Education Adviser:

Professor John E. Stuehr

207 Clapp Hall, Ext. 5099

E-mail: jes6@po.cwru.edu

### Major (for B.A.)

Hours: 46-48

- A. Chemistry courses required (30-32 hours):  
CHEM 105, 106, 113  
CHEM 223, 224 (or 323, 324); 233, 234 (or 321, 322)  
CHEM 301, 302 (or 335, 336); 304, 305
- B. Additional required courses (16 hours):  
PHYS 115, 116  
MATH 125, 126 (or 121, 122)

### Major (for B.S.)

Hours required for graduation: 123

- A. Chemistry courses required (46 hours):  
CHEM 105, 106, 113  
CHEM 323, 324, 321, 322  
CHEM 311, 330, 331, 335, 336  
CHEM 332 plus nine additional hours of chemistry electives at the 300-level or above; the latter may include no more than 3 credit hours of CHEM 397 (Undergraduate Research).
- B. Additional required courses (40-41 hours):  
MATH 121 (or 123), 122 (or 124), 223 (or 227)  
MATH 224 (or 228) or STAT 312  
PHYS 121, 122, 221  
ENGR 131  
One Biochemistry course  
Nine additional hours of approved technical electives, which may include additional CHEM 397 credits, but only 9 credit hours total of CHEM 397 can be applied towards the hours required for the degree.

## CHEMISTRY (continued)

### Adolescent to Young Adult Licensure, Physical Sciences:

- A. Completion of required courses in the physical sciences. For information, contact Dr. John Stuehr, the department academic representative.
- B. Completion of required Education courses. (see Education –Teacher Licensure Program on page 28).

*NOTE: for more information about licensure programs, see Professor Phil Safford, adviser for the CWRU/John Carroll University Joint Program in Teacher Licensure.*

### Minor

Hours: 18

CHEM 105, 106, CHEM 113, plus six additional hours of lecture courses in chemistry (usually CHEM 223, 224 or CHEM 323, 324) and two additional lab courses (usually CHEM 233 and 234)

Independent Study: CHEM 397

### Cooperative Education

Optimal Time: Third Year - Summer; Fourth Year - Fall, Spring/Summer

## CHILDHOOD STUDIES (CHS)

Academic Representative:

Professor Sandra Russ

109 Mather Memorial, Ext. 2814

E-mail: [swr@po.cwru.edu](mailto:swr@po.cwru.edu)

### Minor

Hours: 15

Requires at least 15 hours of course work in at least two different departments

The following courses are accepted toward the minor:

ANTH 306 or 309, COSI 313, NTRN 328, PSCL 230, 231\*, 335A\*, 335C\*, 339, 344, 390, or 393; SOCI 339\*, 361

\*No more than four hours of practicum experience can count toward the minor.

*Note: Independent Studies or one-time course offerings may be approved by the adviser.*

*Note: Courses taken for the student's major may not be counted towards the minor in Childhood Studies.*

## CHINESE (CHI)

Academic Representative:  
Professor Margaretmary Daley  
303 Guilford House, Ext. 2303  
E-mail: mxd43@po.cwru.edu

### Minor

Hours: 15-19

- A. For students beginning study in Chinese at an introductory level:  
CHIN 101, 102, 201, 202 and one 300-level course (19 hours)
- B. For students beginning study in Chinese at the 200-level or higher:  
Five courses at the 200 and 300-levels approved by the chair of the department.

### Humanities Sequence (for B.S. based on Engineering Core )

Hours: 9-12

- A. For students beginning study in Chinese at an introductory level:  
CHIN 101, 102, 201
- B. For students beginning study in Chinese at the 200-level or higher:  
A minimum of 9 hours of advanced courses

## CLASSICS (CLS)

Academic Representative:  
Professor Martin Helzle  
111 Mather House, Ext. 2294  
E-mail: mxh13@po.cwru.edu

### Major (for B.A.)

Hours: 36

Courses from Classics Department (36 hours)

- 1. Eight courses (24 hours) in either Greek or Latin or combination of both, provided that at least three courses are included from the most advanced level in one of the languages
- 2. Four Classics courses of which at least two must be at the 300-level

The department strongly recommends the addition of four to six courses in a closely related field to be selected in consultation with the department adviser. Examples of related fields are Anthropology, Art History, Comparative Literature, History, English, Philosophy.

### Concentrations for the minor

Hours: 15-18

- A. Latin concentration:
  - 9 hours from Latin courses at the 300-level
  - 6 hours from: CLSC 112, 201, 304
- B. Greek concentration:
  - 12 hours in Greek language
  - 3 hours from: CLSC 111, 201, 228, 301, 302
- C. Classics concentration: consult department adviser
  - 1. Any two Latin or any two Greek courses
  - 2. CLSC 111 or 112 or 201 or 202
  - 3. Three courses from CLSC 301, 302, 304, 314, and 300-level courses in Greek and Roman art

**NOTE:** *With the approval of the Chairperson, any of the above programs may be adapted to meet the needs of the individual student.*

## CLASSICS (continued)

### Humanities Sequence (for B.S. based on Engineering Core)

Hours: 9

Most sequences should include CLSC 111, 112 and one course in either Greek or Roman culture. Three courses in either classical language will be acceptable as a sequence in humanities. Students should consult with the adviser on the development of an acceptable sequence.

Sample with Emphasis on Greece: CLSC 111, 112, 203

Sample with Emphasis on Rome: CLSC 111, 112, 204

Language samples: GREK 101, 102, 201; LATN 201, 202, 308

### Independent Study

CLSC 381 (majors only)

CLSC 395; GREK 395; LATN 395

## COMMUNICATION SCIENCES (COS)

Academic Representative:

Professor Melanie Schuele

412 Hearing and Speech, Ext. 2470

E-mail: cms33@po.cwru.edu

### Concentrations for the major (for B.A.)

#### A. Communication Studies

Hours: 36

1. COSI 100, 200, 228, 236, 260, 300, 332, 336

2. four courses chosen within the following recommended emphases:

Mass Communication: COSI 328, ENGL 204, ENGL 307, ORBH 250  
THTR 100

General Communication Theory: COSI 109, 328, 345, ENGL 379  
ORBH 250, ORBH 303, THTR 100

Language Studies: COSI 211, 220, 221, 313, ENGL 301, ENGL 379  
THTR 100

#### B. Communication Disorders

Hours: 45

COSI 109, 211, 220, 260, 313, 321, 325, 345, 352, 370; ENGL 301;

PSCL 101, 230, 282 and 375

### Concentrations for the minor

Hours: 15

A. Communication Studies: COSI 100 and 336

and three of the following: COSI 200, 228, 236, 300, 332, 345

B. Communication Disorders: COSI 109 313, 325

and two of the following: COSI 211, 220, 321, 345

### Social Science Sequence (for B.S. based on Engineering Core)

Hours: 9

A. Communication Studies: COSI 100 and any two of the following:

COSI 200, 228, 236, 260, 300, 332, 336

B. Communication Disorders: COSI 100 and any two of the following:

COSI 211, 313, 345

### Departmental Honors Program

Students majoring in communication disorders who have a grade point average of 3.25 are eligible for participation in the Departmental Honors Program. Students choose a faculty mentor to work with and complete an independent project during their senior year under the guidance of the faculty member. Interested students should contact Dr. Schuele during their junior year. Course prerequisites for the Honors program include PSCL 282 (or STAT 201) and PSCL 375.

### Independent Study

COSI 390 & 391

## COMPARATIVE LITERATURE (CLT)

Academic Representative:  
Professor Margaretmary Daley  
303 Guilford House, Ext. 2303  
E-mail: mxd43@po.cwru.edu

Major (for B.A.) Hours: 34

- A. Either CMPL 211-212, CMPL 290-291 or ENGL 255-256
- B. 202 or the equivalent in a modern language taught at CWRU
- C. 24 hours of literature electives at least 21 of which should be at the 300-level or above, including four 300-level courses in French, German, Spanish, or Japanese

Minor Hours: 15

Five 200 and 300-level courses in CMPL including at least one of the following sequences: CMPL 211-212, CMPL 290-291 or ENGL 255-256

Humanities Sequence (for B.S. based on Engineering Core) Hours: 9

One of the following sequences (CMPL 211-212, CMPL 290-291 or ENGL 255-256) plus one 300-level literature course chosen from CMPL, ENGL, FRCH, GRMN or SPAN.

Independent Study

CMPL 399

## COMPUTER SCIENCE (CMP)

Academic Representative:  
Professor George W. Ernst  
508 Olin Building, Ext. 2839  
E-mail: ernst@eecs.cwru.edu

Major (for B.A.) Hours: 49-51

- A. ENGR 131
- B. MATH 125, 126, 304
- C. ECES 233, 251, 281, 322, 337, 338, 340, 341 (If ECES 251 is not offered, students may take an approved ECES course chosen in consultation with their adviser)
- D. Two technical electives selected from approved ECES, MATH or STAT courses.

For B.S. program in Computer Science, see page 63.

Minor (based on Arts & Sciences General Education Requirements) Hours: 17

ENGR 131

MATH 125 (or equivalent)

ECES 233, 251 plus two additional ECES courses. (If ECES 251 is not offered, students may take an approved ECES course chosen in consultation with their adviser)

Two additional ECES courses.

## ECONOMICS (ECO)

Academic Representative and Sequence Adviser:  
Professor Thomas Bogart  
400 Wickenden, Ext. 4296  
E-mail: [wtb@po.cwru.edu](mailto:wtb@po.cwru.edu)

### Major (for B.A.)

Hours: 30

#### A. Required Courses (15 hours)

1. ECON 102, 103, 307, and either 308 or 309 (12 hours)
2. STAT 201 or 207 or equivalent (3 hours)

#### B. Electives (15 hours):

1. Minimum of four additional courses in economics at 200-level or 300-level (12 or more hours)
2. One elective may be in a related field (such as ACCT, HSTY, MATH, PHIL) approved by the departmental adviser (3 hours)

### Minor

Hours: 15

ECON 102, ECON 103 and three additional ECON courses selected in consultation with the minor adviser.

### Social Science Sequence (for B.S. based on Engineering Core)

Hours: 9

ECON 102, 103 and one additional ECON course.

### Honors Program

Hours: 6

Juniors with a minimum grade point average of 3.30 in economics courses and a 3.00 average overall after completion of ECON 307, 308 and an approved statistics course may apply to the honors program. Students admitted to the program will enroll in ECON 397 in the Spring semester of their junior year, and will enroll in ECON 398 in the Fall semester of their senior year, and will present an honors thesis in order to complete the program and qualify for departmental honors in Economics.

### Independent Study

ECON 399

Hours: 1-6

## EDUCATION—TEACHER LICENSURE PROGRAM

Academic Representative:  
Professor Timothy Shuckerow  
Director of Teacher Licensure  
115 Wickenden Bldg., Ext. 2714  
E-mail: [txs10@po.cwru.edu](mailto:txs10@po.cwru.edu)

Adviser for the CWRU/John Carroll  
University Joint Program in Teacher Licensure  
Professor Phil Safford  
Mather House, Ext. 4155  
E-mail: [psafford@aol.com](mailto:psafford@aol.com)

Ohio teacher licensure can be attained by those undergraduate students who complete the approved curriculum of the Case Western Reserve University/John Carroll University Joint Program in Teacher Licensure. Adolescence/Young Adult Teacher Licensure is available in Integrated Language Arts (English major), Integrated Social Studies (History major), Integrated Mathematics (Mathematics major), Life Sciences (Biology major), and Physical Sciences (Chemistry or Physics major). Multi-age Licensure is available in French. The program requires 36 credit hours in professional education, 12 taken at Case Western Reserve University and 24 credit hours taken at John Carroll University.

## EDUCATION—TEACHER LICENSURE PROGRAM (continued)

Teacher licensure programs are also offered in art education (see page 16) and music education (see page 43).

A 3.00 grade point average must be maintained in all professional education courses, and a cumulative GPA of 2.50 in all coursework is required to be recommended for Ohio teacher licensure. Completion of the University's program in education does not ensure that Ohio teacher licensure will be awarded. The Ohio Department of Education also requires that licensure applicants receive passing scores on the General Knowledge, Professional Knowledge, and Content Area subtests of the National Teachers' Examination and fingerprinting with a criminal background check by the Ohio Bureau of Criminal Identification. Once licensed, teachers can transfer their Ohio licensure to over 40 states. Students should contact individual state departments of education for details.

### CWRU/John Carroll University Joint Program in Teacher Licensure:

- A. Courses taken at Case Western Reserve University: Hours: 12  
PSCL 101 (prerequisite for EDUC 304), EDUC 301, 304, 338
- B. Courses taken at John Carroll University: Hours: 24  
EDJC 186, 255, 337, 405S, 427, 444S

## ELECTRONICS (EAP)

A minor in electronics is available to B.A. candidates through the Department of Electrical Engineering and Applied Physics. See page 64.

## ENGLISH (EGL)

Academic Representative:  
Professor Gary Stonum  
106 Guilford House, Ext. 3342  
E-mail: gxs11@po.cwru.edu

### Major (for B.A.)

Hours: 30 above 100 level

1. ENGL 200, 380
2. 24 additional hours of ENGL courses, at least 15 of which must be at the 300-level or higher. ENGL 255 and 256 are recommended for any student considering graduate study in English or Literature.

### Adolescent to Young Adult Licensure, Integrated Language Arts:

- A. Completion of required Integrated Language Arts courses. For information, contact Professor Judith Oster
- B. Completion of required Education courses. (see Education – Teacher Licensure Program on page 28).

**NOTE:** for more information about licensure programs, see Professor Phil Safford, adviser for the CWRU/John Carroll University Joint Program in Teacher Licensure.

## ENGLISH (continued)

### Minor (for B.A.)

Consult department adviser. ENGL 200 strongly advised.

Hours: 15 above 100 level

### Humanities Sequence (for B.S. based on Engineering Core)

Any coherent sequence of three 200-300-level courses.  
Students must consult the departmental adviser.

Hours: 9

### Honors Program

To qualify for the B.A. with honors in English, students must achieve a minimum GPA of 3.5 in courses taken in the honors program. Students interested in the honors program should speak with an adviser in their freshman or sophomore year.

Hours: 36-37

#### A. Foundations (6-7 hours)

1. ENGL 200
2. One 202-level (or equivalent) course in FRCH, GREK, GRMN, JAPN, LATN, SPAN, or another foreign language for which 300-level courses are available

#### B. Literary Studies: 27 hours of electives in literature (including film), at least 21 hours of which must be at the 300-level or above, including:

1. A minimum of six hours in pre-nineteenth century literature, chosen from among ENGL 312, 320, 323, 324, 326, 327, 328, or equivalent; and
2. A minimum of three hours in courses primarily concerned with methods of analysis, such as ENGL 301, 368A, 379, or 387.

#### C. Senior Seminar (ENGL 380): 3 hours

*NOTE: students may include six hours of Senior Thesis (two semesters of ENGL 399), six hours of creative writing (chosen from among ENGL 203, 213, 214, 303, 304, 305 or 406), and/or six hours of 300-level language courses on literary or cultural topics among the 27 hours of literary studies.*

### Independent Study

ENGL 390

## ENVIRONMENTAL GEOLOGY (GNV)

See Geological Sciences, page 33.

## ENVIRONMENTAL STUDIES (EST)

Academic Representative:  
Professor Peter McCall  
A.W. Smith Building 211C, Ext. 3676  
E-mail: plm4@po.cwru.edu

### Major (for B.A.)

Hours: 30

- A. ESTD 101 and ESTD 398
- B. Humanities: RLGN 206 or HSTY 378
- C. Social Policy: ECON 368 or GEOL 303
- D. Science and Engineering: BIOL 350 or ESCI 340 or GEOL 202
- E. 15 additional hours selected from a list of approved courses. An approved Washington Semester internship may be used to satisfy part or all of this requirement.

***Note: The Environmental Studies major is available only as a second major for the B.A.***

***For a student who completes a Bachelor of Science degree (B.S., B.S.E., B.S.N.), Environmental Studies may serve as the sole major for a B.A. Degree.***

### Minor

Hours: 15

- A. ESTD 101
- B. One course from each of two of the three disciplinary options listed for the major (see B, C, D above)
- C. Two additional courses selected from the list of courses approved for the major; or one course selected from the remaining disciplinary option and one course selected from the list of approved courses.

### Humanities or Social Science Sequence\*

Hours: 9

*(for B.S. based on the Engineering Core)*

- A. ESTD 101
- B. One course from one of the disciplinary options B or C listed for the major (excluding GEOL 303)
- C. One course selected from the list of humanities or social science courses approved for the major.

***\*Will be identified by the adviser as a humanities or social science sequence on the basis of the courses taken***

## **FRENCH (FRC)**

Academic Representative:  
Professor Margaretmary Daley  
303 Guilford House, Ext. 2303  
E-mail: mxd43@po.cwru.edu

### Major (for B.A.)

Hours: 30-32

#### **Students who begin the major at the 200-level:**

FRCH 201 and 202; six 300-level courses taught in French; two LITR or CMPL or other related courses as defined below.

#### **Students who begin the major at the 300-level:**

Eight 300-level courses taught in French; two LITR or CMPL courses or other related courses as defined below.

Related courses are those outside the French offerings which are closely related to French culture: Art History, Classics, History, Philosophy, as well as other language and literature courses. Study abroad is highly recommended for all majors, as is additional work in comparative literature and/or in another language. Courses other than FRCH must be approved in advance by the major adviser.

### Multi-Age Licensure, French:

1. Completion of required French courses. For information, contact Professor Margaretmary Daley, the department academic representative.
2. Completion of required Education courses. (see Education – Teacher Licensure Program on page 28).

*NOTE: for more information about licensure programs, see Professor Phil Safford, adviser for the CWRU/John Carroll University Joint Program in Teacher Licensure*

### Minor

Hours: 15-19

#### **Students beginning study in French at introductory level:**

FRCH 101, 102, 201, 202 and one 300-level course (19 hours)

#### **Students beginning study in French at 200-level or higher:**

Five FRCH courses at the 200 or 300-level, as approved by the adviser

### Humanities Sequence (for B.S. based on Engineering Core)

Hours: 9-12

#### **A. Students with no high school preparation in French:**

FRCH 101, 102, 201

#### **B. Students with the equivalent of one year of college French:**

FRCH 201, 202, and one 300-level course

#### **C. Students with the equivalent of two years of college French:**

Three 300-level courses

## **FRENCH STUDIES (FRS)**

Academic Representative:  
Professor Margaretmary Daley  
303 Guilford House, Ext. 2303  
E-mail: mxd43@po.cwru.edu

### Major (for B.A.)

Hours: 33

Three courses in Foundations in French History and Culture (FRCH 316, 318 and FRCH 319 or HSTY 330); two French Area Focus courses from FRCH 300-level offerings; five courses in other disciplines from the list of French Studies courses; French Studies Colloquium. Each individual program is supervised by a faculty adviser and must receive formal approval.

### Minor:

Hours: 15

One of FRCH 316, 318, 319, HSTY 330; four additional 300-level courses on the list of French Studies courses from any two departments or a thematic course of study approved in advance.

### Humanities Sequence (for B.S. based on Engineering Core)

Hours: 9

Three courses from among FRCH 316, 318, 319 or HSTY 330

## **GEOLOGICAL SCIENCES (GEO) AND ENVIRONMENTAL GEOLOGY (GNV)**

Academic Representative:  
Professor Philip O. Banks  
212 Smith Bldg., Ext. 3765  
E-mail: pob@po.cwru.edu

### Major in Geological Sciences (for B.A.)

Hours: 71 (47 GEOL)

- A. Core GEOL courses (38 hours)  
Any one of GEOL 101, 110, 115; plus GEOL 119, 210, 301, 315, 317, 318, 341, 344, 360, 390, 391, and 392
- B. Elective courses (9 hours). Three additional GEOL courses, at least two of which must be 200-level or higher, approved by department adviser.
- C. Other courses required (24 hours)  
Chemistry: CHEM 105, 106, 113 or equivalent  
Mathematics: MATH 125, 126 (or 121, 122)  
Physics: PHYS 115, 116 or equivalent

### Major in Environmental Geology (for B.A.)

Hours: 67 (29 GEOL)

- A. Core GEOL courses (29 hours)  
GEOL 110, 119, 210, 220, 303 or 202, 305, 317, 322, 390, 391 and 392
- B. Elective courses (9 hours). Three additional courses relating to the science or societal implications of environmental concerns, approved by department adviser.
- C. Other courses required (29 hours)  
Chemistry: CHEM 105, 106, 113 or equivalent  
Environmental Studies: ESTD 101  
Mathematics: MATH 125, 126 (or 121, 122)  
Physics: PHYS 115  
Biology: BIOL 110  
Statistics: STAT 201

## **GEOLOGICAL SCIENCES (continued)**

### Major in Geological Sciences (for B.S.)

Hours required for graduation: 134

#### A. Core GEOL courses (38 hours)

Any one of GEOL 101, 110, 115; plus GEOL 119, 210, 301, 315, 317, 318, 341, 344, 360, 390, 391, and 392

#### B. Technical elective courses (33 hours). Two upper level MATH or STAT courses, plus two additional upper level courses in math, engineering, or science other than GEOL, plus 21 hours of technical courses (including GEOL), approved by department adviser.

#### C. Other courses required (30 hours)

Chemistry: CHEM 105, 106, 113 or equivalent

Mathematics: Math 121 (or 123), 122 (or 124)

Physics: PHYS 121 (or 123), 122 (or 124), 221

Computer science: ENGR 131 or other approved programming course

### Minor in Geological Sciences

Hours: 15

Up to three courses from GEOL 101, 110, 115 and 117; plus GEOL 119 and sufficient upper level GEOL courses to total 15 hours.

## **GERMAN (GEM)**

Academic Representative:

Professor Margaretmary Daley

303 Guilford House, Ext. 2303

E-mail: mxd43@po.cwru.edu

### Major (for B.A.)

Hours: 30-32

#### **Students who begin the major at the 100 or 200-level:**

A. GRMN 201 and 202; eight 300-level German courses; or

B. GRMN 201,202, six 300-level GRMN courses, and two CMPL or other related courses at the 200-level or higher

#### **Students who begin the major at the 300-level:**

A. Ten GRMN 300-level courses; or,

B. Eight GRMN 300-level courses and two CMPL or other related courses at the 200-level or higher.

#### **NOTE:**

*-No more than three courses numbered between 300 to 320 count toward the major.*

*-Two of the courses numbered 321 or higher should be taken in residence at CWRU*

*-Related courses are offered periodically in Art History, Classics, Comparative Literature, History, Music, Philosophy, Religion, Political Science, as well as other national literatures and other departments. For tentative possibilities, consult the approved courses under German Studies. All related courses must be approved in advance by the major adviser.*

### Minor

Hours: 15-19

#### **Five GRMN courses**

#### **NOTE:**

*-GRMN 101 and 102 can count toward the minor*

*-Related courses do not count toward a minor*

*-No more than 3 courses numbered from 300 to 321 count toward the minor.*

## GERMAN (continued)

Humanities Sequence (for B.S. based on Engineering Core)

Hours: 9-12

- A. **Students with no high school preparation in German:**  
GRMN 101, 102, 201
- B. **Students with the equivalent of one year of college German:**  
GRMN 201, 202 and one 300-level course
- C. **Students with the equivalent of two years of college German:**  
three 300-level courses.

Independent Study: GRMN 398 or 399

## GERMAN STUDIES (GES)

Academic Representative:  
Professor Margaretmary Daley  
303 Guilford House, Ext. 2303  
E-mail: mxd43@po.cwru.edu

Major (for B.A.)

Thirty hours from the list of approved German Studies courses, including GRMN 303 and 304, GRST 398 (Senior Colloquium), and twenty-one additional hours from the approved list, no more than nine of which may be in any one department.

Minor:

At least one of GRMN 303 or 304; four additional 300-level courses on the approved list of GRST courses from any two departments; or a thematic course of study (15 hours) approved in advance by the director of the German Studies Program.

## GERONTOLOGICAL STUDIES (GER)

Academic Representative:  
Professor Gary Deimling  
223C Mather Memorial, Ext. 5173  
E-mail: gtd@po.cwru.edu

Major (for B.A.)

Hours: 30

- A. Required Core Courses (15 hrs): ANTH 304, COSI 345, PSCL 369, SOCI 369, 396
- B. At least 15 hours from the following list of approved courses: ANTH 215, 301, 318, ENGL 364, GERO 397, 398, 399, NTRN 201, SOCI 311, 313, 319, 370

***NOTE: Gerontological Studies is available only as a second major for the B.A. To declare the major students should have declared a first major and have sophomore or junior standing. Up to six credits in courses taken by students for the first major may be applied to Gerontological Studies major.***

***For a student who completes a Bachelor of Science degree (B.S., B.S.E., B.S.N.) Gerontological Studies may serve as the sole major for a B.A. degree.***

## GERONTOLOGICAL STUDIES (continued)

### Minor

Hours: 15

At least two of the core courses listed above for the major and three courses chosen from remaining core courses or approved courses (see B above).

### Social Science Sequence (for B.S. based on Engineering Core)

Hours: 9

A sequence in gerontological studies consists of 9 hours in three courses chosen from the courses listed in A or B, excluding GERO or NTRN courses.

## HISTORY (HST)

Academic Representative:

Professor Kenneth F. Ledford

208 Mather House, Ext. 4144

E-mail: kxl15@po.cwru.edu

### Major (for B.A.)

Hours: 30

A. HSTY 112 and 113

B. HSTY 250, 398

C. Six additional courses in history, chosen in consultation with the departmental adviser. The majority of these courses should be in an area of concentration, which may be geographical (for example, European history) or chronological (for example, 20th century history) or thematic (for example, women's history), or some combination. The remaining courses are electives, and with permission a course outside history, in a closely related discipline, may be accepted as cognate credit towards the completion of the major.

### Adolescent to Young Adult Licensure, Integrated Social Studies:

- A. Completion of 1) the same four courses required for the regular major; 2) a minimum of 6 semester hours in each of three focus areas: United States history, World/European studies, and Asian, African, Latin American studies; and 3) specified courses in economics, political science, and sociology. For information, contact Professor Kenneth F. Ledford, the department academic representative.
- B. Completion of required Education courses. (see Education – Teacher Licensure Program on page 28).

*NOTE: for more information about licensure programs, see Professor Phil Safford, adviser for the CWRU/John Carroll University Joint Program in Teacher Licensure*

### Minor

Hours: 15

A. HSTY 112 and 113

B. Three additional courses chosen in consultation with the departmental adviser in an area of concentration.

### Humanities Sequence (for B.S. based on Engineering Core)

Hours: 9

A. HSTY 112 or 113

B. Two additional courses, chosen in consultation with the department adviser in an area of concentration.

### Independent Study

HSTY 397

## **HISTORY & PHILOSOPHY of SCIENCE and TECHNOLOGY (HSP)**

Academic Representative:  
Professor Alan Rocke  
207 Mather House, Ext. 2614  
E-mail: [ajr@po.cwru.edu](mailto:ajr@po.cwru.edu)

### Major (for B.A.)

Hours: 48

- A. HPST courses: PHIL 101, 201, 303; HSTY/PHIL 390 (Senior Seminar)  
Four of the following five courses: PHIL 302, HSTY 151, 152, 201, 202  
Three additional PHIL and HSTY courses at 300-level or above approved by HPST adviser, only two of which may be from the same department
- B. Science Requirement: 15 hours of a coherent sequence of science and/or engineering courses, normally with 6 hours at the 300-level or above, or a science minor

## **HISTORY of TECHNOLOGY and SCIENCE (HSS)**

Academic Representative:  
Professor Carroll Pursell  
216 Mather House, Ext. 2261  
E-mail: [cxp7@po.cwru.edu](mailto:cxp7@po.cwru.edu)

### Minor

Hours: 15

- A. Two of the following courses: HSTY 151, 152, 201, 202  
B. Three additional courses approved by the program adviser

### Humanities Sequence (for the B.S. based on Engineering Core)

Hours: 9

Must include two of the following courses: HSTY 151, 152, 201, 202; plus any one additional HSTY course approved by the program adviser

## **HUMAN DEVELOPMENT (HDE)**

Academic Representative:  
Professor Richard Settersten  
Mather Memorial, Ext. 2697  
E-Mail: [ras2@po.cwru.edu](mailto:ras2@po.cwru.edu)

Hours: 15

### Minor

- A. HDEV/SOCI 203  
B. PSCL 230  
C. Two courses selected from the following list:  
ANTH 104, 304, 306; COSI 313; HSTY 353; PSCL 369; SOCI 313, 361, 369  
D. HDEV 391

### Social Science Sequence (for B.S. based on Engineering Core)

- A. PSCL 230, SOCI/HDEV 203  
B. One course selected from the following list:  
ANTH 104, 304, 306; COSI 313; HSTY 353; PSCL 369; SOCI 313, 361, 369

## INTERNATIONAL STUDIES (IST)

Academic Representative:  
Professor Vincent E. McHale  
113 Mather House, Ext. 2424  
E-mail: vem@po.cwru.edu

### Major (for B.A.)

Hours: 33

- A. Foundations: ANTH 102, ECON 102, HSTY 113, POSC 272
- B. Area Focus: from an approved list of courses, six hours chosen in consultation with the academic adviser
- C. Topical Focus: from an approved list of courses, six hours chosen in consultation with the academic adviser
- D. Electives: from an approved list of courses, six hours chosen in consultation with the academic adviser
- E. Senior Colloquium: INTL 398 (3 hours)
- F. Language Competency: Competency in a non-native language. Courses must be approved by the Department of Modern Languages and Literatures (0-16 hours)

### Honors

INTL 398 (Exceptional papers may be considered for honors)

Independent Study: INTL 396 (International Studies majors only)

## JAPANESE (JAP)

Academic Representative:  
Professor Takao Hagiwara  
203 Guilford House, Ext. 6188  
E-mail: txh13@po.cwru.edu

### Minor

Hours: 15-19

#### **For students beginning Japanese at the introductory level:**

JAPN 101, 102, 201, 202, and one 300-level course

#### **For students beginning Japanese at the 200-level or above:**

Five courses at the 200 and 300-levels approved by the chair of the department

### Humanities sequence (for B.S. based on Engineering Core)

Hours: 9-12

**For the beginning student:** JAPN 101, 102, 201

**The student entering the program with advanced preparation will take more advanced courses to complete a minimum of 9 hours.**

## JAPANESE STUDIES (JPS)

Academic Representative:  
Professor Takao Hagiwara  
203 Guilford House, Ext. 6188  
E-mail: txh13@po.cwru.edu

Major (for the B.A.)

Hours: 33-34

**For students who begin the major at the 200-level:**

- A. JAPN 201, 202, 301, 302, 350, 351
- B. Senior Colloquium
- C. 3 Asian Studies Courses, CMPL or other related courses as defined below\*

**For students who begin the major at the 300-level:**

- A. JAPN 301, 302, 350, 351
- B. 1 Directed Reading Course
- C. Senior Colloquium
- D. 4 Asian Studies Courses, CMPL or other related courses as defined below\*

\* "Other related courses" could include courses in Japanese Literature, Film, Theater, Art History, Anthropology, Philosophy, Religion, Sociology, Political Science, and History. Courses in other disciplines than Japanese form an important component of the Program. They provide an international, as well as interdisciplinary, perspective on Japanese culture. The individual program of study is supervised and must be approved by a faculty adviser.

A year of study abroad in Japan is highly recommended, as is additional study in another language.

## MANAGEMENT INFORMATION & DECISION SYSTEMS (MID)

A minor program in management information and decision systems is offered through the Weatherhead School of Management. See page 75.

## MATHEMATICS (MAT)

Academic Representative:  
Professor David Singer  
307A Yost Hall, Ext. 2892  
E-mail: das5@po.cwru.edu

Cooperative Education Adviser:  
Professor Marshall Leitman  
301 Yost Hall, Ext. 2890  
E-mail: mx15@po.cwru.edu

**NOTE: MATH 101 cannot be counted toward the MATH major or minor.**

Major (for B.A.)

Hours: 41

A. Required Courses: (32 hours)

- 1. MATH 121 or 123; 122 or 124; 223 or 227; and 224 or 228
- 2. The Mathematics Core (15 hours)  
MATH 307, 308, 321, 322 or 323, and 324 or 425
- 3. ENGR 131 (3 hours)

B. Approved Electives: (9 hours)

Three electives must be approved by the student's adviser in the Department of Mathematics. If taken in the freshman year, MATH 150 may count toward this requirement. With the approval of the adviser, one course from outside the department may be counted as one of these electives.

## **MATHEMATICS (continued)**

Major (for B.S.)

Hours required for graduation: 126

- A. MATH 121 (or 123), 122 (or 124), 223 (or 227), 224 (or 228), 307, 308, 321, 322 or 323, and 324 or 425
- B. One of the following sequences: ASTR 201-202, CHEM 105-106; CHEM 111 and ENGR 145; GEOL 110 and either GEOL 115 or GEOL 210
- C. ENGR 131
- D. PHYS 121 (or 123), 122 (or 124), 221
- E. An approved science lab. BIOC 314, BIOL 111, CHEM 113, GEOL 119, PHYS 203 are appropriate.
- F. 21 hours of approved technical electives, no more than 9 hours of which can be taken from outside the department

Major in Applied Mathematics (for B.S.)

Hours required for graduation: 125

The requirements of the B.S. in Applied Mathematics include requirements A through E for the B.S. in Mathematics, plus the following:

- G. MATH 304
- H. 18 hours of approved technical electives
- I. A professional core in some field of application (12 hours of coursework)

### **B.S. in Mathematics and Physics**

Hours required for graduation: 126

This program offers a single degree in Mathematics and Physics in a program jointly supervised by both departments. See the academic representative from either department for more information.

- A. Mathematics and Physics courses (79 hours)  
MATH 121 (or 123), 122 (or 124), 223 (or 227), 224, 307, 308, 321, 322, 324  
PHYS 121 (or 123), 122 (or 124), 221  
PHYS 310, 313, 315 (or 316), 331 (or 481), 332 (or 482), 423, 472  
and two additional physics courses chosen from PHYS 250, 349  
and 350 and two additional math courses subject to approval by the advisory committee.  
PHYS 351 or MATH 351
- B. Additional courses required (11 hours)  
CHEM 105 (or 111), 106 (or ENGR 145) and 113  
ENGR 131

### **Adolescent to Young Adult Licensure, Mathematics:**

- A. Completion of required Mathematics courses. For information, contact Professor David Singer, the department academic representative.
- B. Completion of required Education courses. (see Education Teacher-Licensure Program on page 28).

***NOTE:** for more information about licensure programs, see Professor Phil Safford, adviser for the CWRU/John Carroll University Joint Program in Teacher Licensure*

### Minor

Hours: 17

The minor in Mathematics consists of 17 credit hours of approved course work in Mathematics. No more than two courses can be used to satisfy both the minor requirements and the requirements of the student's major field (meaning departmental degree requirements, including departmental technical electives and common course requirements of the student's school). The 17 hours must be selected from the following courses: MATH 121 or 123 or 125, 122, or 124 or 126, 223 or 227, 224 or 228, 150\*, 201, \*\* 301, 302, 303, 304, 307, 308, \*\* 321, 322, 323, 324, 331, 338, 343, 345, 363, 380, or any 400-level\*\* MATH course.

\*To count toward a minor in Mathematics, MATH 150 must be taken in the freshman or sophomore year.

\*\* Only one of 201, 308, 470 can be taken for credit.

### Independent Study

MATH 301

### **MUSIC (MUS)**

Academic Representative:  
Professor Quentin Quereau  
201 Haydn, Ext. 2410  
E-mail: qxq@po.cwru.edu

All programs in music are conducted jointly by Case Western Reserve University and The Cleveland Institute of Music. The Bachelor of Arts and the Bachelor of Science in Music Education programs are administered by Case Western Reserve University. University students planning to major in music must pass an audition and should consult the Music Department academic representative for audition requirements.

### Concentrations for the major

- |                                 |                                      |
|---------------------------------|--------------------------------------|
| 1. General Musicianship         | 4. Early Music Performance Practices |
| 2. Performance                  | 5. Music Theory                      |
| 3. Music History and Literature | 6. Audio Recording                   |

### Major (for B.A.)

Hours: Variable depending upon concentration

- A. Required Music Core Curriculum: (44 hours minimum)
- Music Theory (20 hours)
  - Music History and Literature (9 hours)
  - Applied Music in principal performance area (15 hours)
  - Participation in assigned musical ensemble every semester of major (0-1 hr semester)
  - Participation in additional musical ensemble for one year (0-1 hour per semester)
  - Recital Class attendance and performance every year of major (0 hours)
  - Two semesters of Eurhythmics (0 hours) (fulfills the Physical Education requirement)
  - Attendance and participation in Freshman Colloquium: the World of Music (0 hours) during the first year of major

## MUSIC (continued)

### B. Additional requirements depending upon concentration:

1. General Musicianship concentration (3 additional hours)  
Music History and Literature (3 hours)
2. Performance concentration (18 additional hours)  
Applied Music in principal performance area (9 hours)  
Music History and Literature (3 hours)  
Foreign language (6-8 hours)
3. Music History and Literature (18 additional hours)  
Applied Music in principal performance area (3 hours)  
Music History and Literature (6 hours)  
Early Music Performance Practices (3 hours)  
Foreign language (6-8 hours)
4. Early Music Performance Practices (18 additional hours)  
Applied Music in principal performance area (3 hours)  
Music History and Literature (3 hours)  
Early Music Performance Practices (6 hours)  
Foreign language (6-8 hours)
5. Music Theory concentration (10 additional hours)  
Applied Music in principal performance area (3 hours)  
Music History and Literature (3 hours)  
Counterpoint (4 hours)
6. Audio Recording concentration (30 additional hours)  
Audio Recording courses (27 hours) plus specific MATH and PHYS courses

### Minor

Hours: 15-18

5-6 courses including:

1. Two in Music Theory (generally MUSC 103, 104)
2. Two in Music History/Appreciation (generally MUSC 221, 222 or 321, 322)
3. One or two courses as electives (may be Applied Music)

### Humanities Sequence (for B.S. based on Engineering Core)

Hours: 9

The following options are samples:

- |                                   |                                  |
|-----------------------------------|----------------------------------|
| A. Music and its theory:          | MUSC 103, 104; 221               |
| B. Music and its history:         | MUSC 103, 221, 222               |
| C. Music and computers:           | MUSC 103; 104 or 221; 308        |
| D. Music history and jazz:        | MUSC 103 or 104 or 221; 222, 229 |
| E. Music history and world music: | MUSC 103 or 104 or 221; 222, 337 |
| F. Music and performance:         | MUSC 103, 221, APMU              |

Independent Study: MUSC 399

**MUSIC EDUCATION (MUE) (B.S.)**

Hours: 120

*(based on modified Arts and Sciences General Education Requirements)*

Academic Representative:  
 Professor Robert E. Dunn  
 305 Haydn Hall, Ext. 2496  
 E-mail: red5@po.cwru.edu

Upon satisfactory completion of this program a student is eligible to be recommended for the Ohio Provisional Special Licensure to teach music in Pre-Kindergarten through twelfth grade in Ohio and over 40 reciprocating states. Students planning to pursue a B.S. in Music Education must pass an audition. Consult the department adviser for audition requirements. To be recommended for teacher certification, a student must maintain a 3.0 grade point average in professional education courses and an overall 2.5 grade point average and must receive passing scores on the required sections of the National Teachers Examination.

Music, Music Education and Education courses (\* indicates courses fulfilling Arts and Sciences General Education Requirements)

|   | <u>Hours</u> |
|---|--------------|
| Applied Music (major and minor areas)                                 | 15           |
| Music Theory: (MUSC 101, 102, 105, 106, 201, 202, 205, 206, 317, 318) | 20           |
| Music History (MUSC 321*, 322*, 336)                                  | 9            |
| Elements of Conducting (MUSC 275)                                     | 2            |
| Advanced Conducting (MUSC 276)  | 2            |
| Arranging for Voices and Instruments (MUSC 310)                       | 3            |
| Introduction to Education (EDUC 301)                                  | 3            |
| *Foundations of Music Education (MUSC 241)                            | 3            |
| General Music Methods (MUSC 341 or MUSC 342)                          | 3            |
| Instrumental and Choral Musical Methods (MUSC 377 and MUSC 378)       | 6            |
| Electives from various instrument classes (1 credit for each class)   | 5            |
| Practice Teaching (MUSC 396)  | <u>12</u>    |
|   | 83           |

Courses to fulfill graduation requirements and the general requirements of the Ohio Department of Education

|  |          |
|--|----------|
| *ENGL 150  | 3        |
| *A&S General Education Requirement: Mathematics                                    | 3        |
| *A&S General Education Requirement: Natural Sciences                               | 3        |
| *A&S General Education Requirement: Natural Sciences <i>or</i> Science and Society | 3        |
| *A&S General Education Requirement: History, Philosophy, Religion                  | 6        |
| *Social and Behavioral Sciences: PSCL 101, EDUC 304                                | 6        |
| *A&S General Education Requirement: Global and Cultural Diversity                  | 3        |
| Electives outside of MUSC and EDUC   | 6        |
| Open Electives   | <u>4</u> |
|  | 37       |

Additional Requirements:

Participation in assigned musical ensemble every semester of major  
 Participation in additional musical ensemble for one year  
 Recital Class attendance and performance every year of major  
 Two semesters of Eurhythmics (fulfills Physical Education requirement)

## NATURAL SCIENCES (NAT)

Academic Representative:  
Dr. Joanne Westin  
102 Baker Bldg., Ext. 2928  
E-mail: jxw3

Major (for B.A.) Hours: minimum of 50 in science and mathematics

- A. 20 hours in one of the following departments: Astronomy, Biology, Chemistry, Geological Sciences, Physics.
- B. 8 hours in each of two other departments listed in A above
- C. 3 hours in each of the remaining two departments listed in A above
- D. MATH 125-126 or 121-122

The courses selected in each department must generally be courses that also satisfy the major or related course requirements of an existing science major.

***NOTE: Natural Sciences is available only as a second major for B.A.; the first major for the B.A. must be in one of the departments within the arts and humanities or the social sciences, excluding the programs in American Studies, Asian Studies (Track 2), Environmental Studies, Gerontological Studies, Pre-Architecture, and Women's Studies. For a student who completes a B.S. degree in management or accounting, Natural Sciences may serve as the sole major for the B.A. degree.***

Minor Hours: Variable

Completion of requirements specified below for any four of the five departments listed.

1. Biology: BIOL 110 and BIOL 220, and one of the following laboratory courses:  
BIOL 111 or 221
2. Chemistry: CHEM 105-106, 113
3. Geological Sciences: any one of GEOL 101, 110, 115 or 117; and GEOL 119; and one other GEOL course
4. Mathematics: either of the following sequences: MATH 125-126 or MATH 121-122
5. Physics: either of the following sequences: PHYS 115-116 or PHYS 121, 122, 221

## NUTRITION (NTR)

Academic Representative:  
Professor Margaret Cicirella  
201 Dental School, Ext. 2440  
E-mail: mmc3@po.cwru.edu

Major (for B.A.) Hours: 42

- A. Required Nutrition Courses (20 hours):  
NTRN 201, 342, 343, 363, 364, 399
- B. Additional Required Courses (19-20 hours):  
CHEM 105, 106, 223; Biochemistry\*; BIOL 110; BIOL 220\* or 348\* or PHOL 480\*
- C. Nutrition Electives (6 hours)\*  
Two courses from NTRN 328, 351, 360, 365, 435, 437, 440, 460

\*selection of course taken by the student is to be made in consultation with the student's major adviser

Major (for B.S.) Hours required for graduation: 120

- A. Courses in Nutrition (26-27 hours):
  - Required: NTRN 201, 342, 343, 363, 364 17
  - Elective courses in Nutrition: three courses from  
NTRN 328, 351, 360, 365, 371, 435, 437, 440, 452, 455, 460 9-10
- B. Other required courses (26-28 hours):
  - BIOL 110, 111 5
  - Biochemistry\* 4
  - CHEM 105, 106, 113 8
  - CHEM 223 (before NTRN 363) 3
  - BIOL 348\* or BIOL 220\* or PHOL 480\* 3-5
  - STAT 201, 243, 312, or 313 3

\*selection of course taken by the student is to be made in consultation with the student's major adviser

Minor Hours: 15

NTRN 201, 343 and, depending on the student's interest and preparation, 9 hours selected from: NTRN 328, 342, 351, 363, 364, 365

## DIDACTIC PROGRAM IN DIETETICS (DPD)

Students interested in a career as a dietetics professional are required to complete the Didactic Program in Dietetics. You may select the B.A. or B.S. in Nutrition or Nutritional Biochemistry and Metabolism. Students wishing to meet eligibility for dietetic registration should consult with a department representative. The following courses must be included in the program:

BIOL 343,348, or 220 and 221  
BIOC 307 or DEND 307  
CHEM 223  
EDUC 304 or PSCL 353  
NTRN 201, 342, 343, 351, 360, 363, 364, 365, 550A  
ORBH 250  
SOCL 112 and 113  
STAT 201 or 243 or 312 or 313

## **NUTRITIONAL BIOCHEMISTRY AND METABOLISM (NBM)**

Academic Representative:  
Professor Hope Barkoukis  
201 Dental School, Ext. 2440  
E-mail: hdb@po.cwru.edu

### Major (for B.A.)

Hours: 82-83

- A. Nutrition courses (20 hours)
  - 1. NTRN 201, 342, 363, 364, 452
  - 2. Nutrition electives: 3 hours at 300-level or above
  
- B. Additional required courses (62-63 hours)
  - 1. BIOC 307, 334
  - 2. BIOL 110, 210, 211, 326
  - 3. BIOL 220 or 348 or PHOL 480
  - 4. CHEM 105, 106, 113; 223, 224 (or 323, 324), 233, 234, 301
  - 5. MATH 125, 126 (or 121, 122)
  - 6. PHYS 115, 116 or equivalent

### Major (for B.S.)

Total hours required for graduation: 123

- A. Nutrition courses (20 hours)
  - 1. NTRN 201, 342, 363, 364, 452
  - 2. Nutrition electives: 3 hours at 300-level or above
  
- B. Additional required courses (73 hours)
  - 1. CHEM 105, 106, 113, 223, 233, 224, 234, 301, 302
  - 2. MATH 121 (or 123), 122 (or 124), 223 (or 227), 224 (or 228)
  - 3. PHYS 121 and 122 or 123 and 124; 221
  - 4. BIOL 110, 210, 211, 220, 326
  - 5. BIOC 307, 334
  - 6. ENGR 131

### DIDACTIC PROGRAM IN DIETETICS (DPD)

Students interested in a career as a dietetics professional are required to complete the Didactic Program in Dietetics. You may select the B.A. or B.S. in Nutrition or Nutritional Biochemistry and Metabolism. Students wishing to meet eligibility for dietetic registration should consult with a department representative. The following courses must be included in the program:

BIOL 343, 348, or 220 and 221  
BIOC 307 or DEND 307  
CHEM 223  
EDUC 304 or PSCL 353  
NTRN 201, 342, 343, 351, 360, 363, 364, 365, 550A  
ORBH 250  
SOC 112 and 113  
STAT 201 or 243 or 312 or 313

## PHILOSOPHY (PHI)

Academic Representative:  
Professor Colin McLarty  
201 Guilford House, Ext. 4476  
E-mail: cxm7@po.cwru.edu

### Major (for B.A.)

Hours: 30

- A. PHIL 101, 201, 301 and 302
- B. Six courses chosen in consultation with a department adviser.

### Minor

Hours: 15

PHIL 101 and four other courses at the 200-300-level (excluding PHIL 390, 398 and 399) chosen in consultation with a department adviser to meet the specific needs of students.

### Humanities Sequence (for B.S. based on Engineering Core)

Hours: 9

PHIL 101 and two electives at 200-300-level (excluding PHIL 390, 398 and 399) chosen in consultation with a department adviser.

## PHYSICS (PHY)

Academic Representative and Cooperative Education Adviser:  
Professor Gary S. Chottiner  
104D Rockefeller Building, Ext. 4024  
E-mail: gsc2@po.cwru.edu

### Major (for B.A.)

Hours: 56 (36 PHYS)

- A. Physics courses (36 hours):
  - PHYS 121 (or 115 or 123), 122 (116 or 124), 221, 250
  - PHYS 309, 313, 331, 351, plus 2 of the following: 310, 315, 316, 324, 326, 328
- B. Additional courses required (25 hours):
  - MATH 121 (or 123 or 125), 122 (or 124 or 126), 223 (or 227)
  - ENGR 131 or appropriate alternate
  - A two course science sequence chosen from: CHEM 105-CHEM 106; CHEM 111-ENGR 145; BIOL 110-BIOL 210; BIOL 110-BIOL 220 or another two course sequence totaling 6 or more credits in a quantitative science (other than physics), with written approval of the Physics Undergraduate Curriculum Committee.

### Major (for B.S.)

Hours required for graduation: 127

- A. Physics courses (60 hours)
  - PHYS 121 (or 123), 122 (or 124) and 221; 203, 204, 250
  - PHYS 301, 302, 310, 313, 315, 316, 324, 325, 331, 332, 351
- B. Additional courses required (25 hours):
  - ENGR 131 or approved alternate
  - MATH 121 (or 123), 122 (or 124), 223 (or 227), 224
  - CHEM 105 (or 111), 106 (or ENGR 145) and 113

## **PHYSICS (continued)**

A variation on the BS in Physics, officially a "BS in Physics with a Mathematical Physics Concentration", is available for students who are interested in theoretical physics and who have a strong background in mathematics. Details are available from the department's academic representative.

### **B.S.E. program in Engineering Physics see page 65.**

#### **B.S. in Mathematics and Physics**

Hours required for graduation: 126

This program offers a single degree in Mathematics and Physics in a program jointly supervised by both departments. See the academic representative from either department for more information.

##### A. Mathematics and Physics courses (79 hours)

MATH 121 (or 123), 122 (or 124), 223 (or 227), 224, 307, 308, 321, 322, 324

PHYS 121 (or 123), 122 (or 124), 221

PHYS 310, 313, 315 (or 316), 331 (or 481), 332 (or 482), 423, 472

and two additional physics courses chosen from PHYS 250, 349

and 350 and two additional math courses subject to approval by the advisory committee.

PHYS 351 or MATH 351

##### B. Additional courses required (11 hours)

CHEM 105 (or 111), 106 (or ENGR 145) and 113

ENGR 131

#### **Adolescent to Young Adult Licensure, Physical Science:**

A. Completion of required courses in the physical sciences courses in a special B.A. program. For information, contact the department academic representative.

B. Completion of required Education courses (see Education-Teacher Licensure Program on page 28).

***NOTE:** for more information about licensure programs, see Professor Phil Safford, adviser for the CWRU/John Carroll University Joint Program in Teacher Licensure*

#### **Minor**

Hours: 17

PHYS 121 (or 115 or 123) and PHYS 122 (or 116 or 124) and PHYS 221 plus two of the following courses;

PHYS 196, PHYS 204 (or 208), PHYS 309, PHYS 310, PHYS 313, PHYS 315, PHYS 316, PHYS 324, PHYS 326, PHYS 331, PHYS 332, , PHYS 328

#### **Cooperative Education**

Optimal Times:

Third Year - Spring/Summer

Fourth Year - Summer

Fifth Year - Fall

## **POLITICAL SCIENCE (POS)**

Academic Representative:  
Professor Vincent E. McHale  
113 Mather, Ext. 2424  
E-mail: vem@po.cwru.edu

### Major (for B.A.)

Hours: 30

POSC 109

Two Political Science courses at the 200-level (6 hours)

Six Political Science courses at the 300-level (18 hours)

Senior project, taken as POSC 396 (3 hours)

***NOTE:** No more than six hours of independent study (i.e., POSC 395 and/or POSC 397/398) may be counted toward the major. Independent Study completed through the Washington Semester or Washington Center programs is excluded from this limitation.*

### Minor

Hours: 15

Five courses, three of which must be at the 300-level

Minor programs can be arranged with the academic representative or minor adviser in areas including, but not limited to: Pre-Law, Public Service/Public Management, Practical Politics, International Affairs/Transnational Relations

### Social Science Sequence (for B.S. based on Engineering Core)

Hours: 9

POSC 109; 260 or 272; and one 300-level course

### Honors Program:

POSC 397, 398 (limited to Political Science majors)

### Independent Study - Special Projects

POSC 395 (requires prior faculty approval)

## **PRE-ARCHITECTURE (PAR)—See page 18.**

## **PSYCHOLOGY (PSY)**

Academic Representatives:  
Professor Robert Greene  
124 Mather Memorial, Ext. 6473  
E-mail: rlg2@po.cwru.edu

### Major (for B.A.)

Hours: 30

#### A. Required courses

1. PSCL 101, 282 (6 hours)

2. Three courses (9 hours) from PSCL 315, 352, 353, 355, 357, 382, 393

B. Electives: A minimum of 15 credit hours of elective course work chosen by the student in consultation with his/her adviser. No more than 9 hours of practicum courses (PSCL 231, 334, 335, or 336) may be applied to the major.

### Minor

Hours: 15

A. Required Course: PSCL 101 (3 hours)

B. Electives: A minimum of four courses (12 hours) chosen by the student in consultation with his/her adviser. Practica and independent study are available to minors but cannot be used to satisfy the minor requirement.

## **PSYCHOLOGY (continued)**

### Social Science Sequence (for B.S. based on Engineering Core)

Hours: 9

The sequence in psychology reflects an emphasis on cognitive/biological or social/personal aspects of the field. Sequences must include PSCL 101 and two courses from:

A. Personal and Social Behavior:

PSCL 102, 230, 300, 313, 315, 317, 321, 325

or B. Cognitive/Biological Behavior:

PSCL 352, 353, 355, 357, 360

### Independent Study

PSCL 397

## **PUBLIC POLICY (PPY)**

Academic Representative

Professor Vincent McHale

113 Mather House, Ext. 2425

E-mail: vem@po.cwru.edu

### Minor

Hours: 15

A. The policy process: POSC 386

B. Economic analysis: ECON 205

C. Policy making institutions: one course selected from HSTY 256, 358

POSC 308, 310, 384, 385

D. Two courses on a particular field of public policy selected with the approval of the adviser

## **RELIGION (RLG)**

Academic Representative:

Professor William Deal

112 Mather House, Ext. 2205

E-mail: wed@po.cwru.edu

### Major (for B.A.)

Hours: 30

A. RLGN 102 and 399

B. Nine hours in one of the areas of concentration

Area 1: Religious Texts and Traditions

Area 2: Religion and Culture

Area 3: Religion in Society

C. Three hours in each of the two areas outside the area of concentration (six hours total)

D. Nine elective hours chosen in consultation with the departmental advisor

A list of courses assigned to each area of concentration is available from the Department.

### Minor

Hours: 15

A. RLGN 102 and 399

B. Nine hours that demonstrate diversity in the study of religion (selected in consultation with the department adviser).

### Humanities Sequence (for B.S. based on Engineering Core)

Hours: 9

Nine hours that demonstrate diversity in the study of religion (selected in consultation with the department adviser).

### Independent Study

RLGN 390

## RUSSIAN (RUS)

Academic Representative:  
Professor Margaretmary Daley  
303 Guilford House, Ext. 2303  
E-mail: mxd43@po.cwru.edu

### Minor

Hours: 15-19

#### **Students who begin Russian at the introductory level:**

RUSN 101, 102, 201, 202, and one 300-level course

#### **Students who begin Russian at the 200-level or higher:**

Five courses at the 200 and 300-levels approved by the chair of the department

### Humanities Sequence (for B.S. based on Engineering Core)

Hours: 9-12

**A. Students with no background in Russian:** RUSN 101, 102, 201

**B. Students with the equivalent of one year of college Russian.**

**Emphasis on spoken Russian:** RUSN 201, 202, 301.

## SOCIOLOGY (SOC)

Academic Representatives:  
Professor Gary Deimling  
223C Mather Memorial, Ext. 5173  
E-mail: gtd@po.cwru.edu

Professor Eleanor Stoller  
224 Mather Memorial Bldg., Ext. 2638  
E-mail: eps3@po.cwru.edu

Professor Sue Hinze  
221 Mather Memorial, Ext. 2702  
E-mail: sxh3@po.cwru.edu

Professor Kandace Pearson Schrimsher  
223D Mather Memorial, Ext 8847  
E-mail: kps5@po.cwru.edu

### Major (for B.A.)

Hours: 30

A. SOCI 112, 300, 303

B. STAT 201 or PSCL 282

C. Any six additional courses in Sociology

### Minor

Hours: 15

SOCI 112, 300

Three electives, at least two of which must be at the 300-level

### Social Science Sequence (for B.S. based on Engineering Core)

Hours: 9

SOCI 112 and two courses selected from one of the following groups:

1. Modern Society: SOCI 208, 222, 302, 310
2. Social Problems: SOCI 204, 333, 349
3. Health and Aging: SOCI 311, 313, 319, 369

or any two additional related courses chosen in consultation with faculty adviser.

### Honors Study

SOCI 397/398

### Independent Study

SOCI 375

## SPANISH (SPA)

Academic Representative:  
Professor Jacqueline Nanfito  
302 Guilford, Ext. 3071  
E-mail: jcn@po.cwru.edu

### Major (for B.A.)

Hours: 30-32

#### **For students who begin the major at the 200-level:**

SPAN 201 and 202; six 300-level courses taught in Spanish; two CMPL or other related courses.\*

#### **For students who begin the major at the 300-level:**

Eight 300-level courses taught in Spanish; two CMPL courses or other related courses.\*

\*Related courses are those outside Spanish offerings which are closely related to Spanish or Latin American culture: Art History, Classics, History, Philosophy, as well as other language and literature courses. Courses other than SPAN must be approved in advance by the major adviser.

Study abroad is highly recommended for all majors, as is additional work in comparative literature and/or in another language. Information on study abroad opportunities may be obtained from the academic representative listed above, from the main office of the Department of Modern Languages and Literatures (201 Guilford House), and from the Office of Undergraduate Studies (Baker Building 102).

### Minor

Hours: 15-19

#### **Students who begin Spanish at the introductory level:**

SPAN 101, 102, 201, 202 and one 300-level course

#### **Students who begin Spanish at 200-level:**

Five courses at the 200 and 300-levels approved by the adviser.

#### Humanities Sequence (for B.S. based on Engineering Core):

Hours: 9-12

Depending on previous study in Spanish, students may develop sequences in consultation with the adviser along the following lines:

##### **A. Students with no high school preparation in Spanish:**

SPAN 101, 102, 201

##### **B. Students with the equivalent of one year of college Spanish:**

SPAN 201, 202, and one 300-level course

##### **C. Students with the equivalent of two years of college Spanish:**

Three 300-level courses

## **SPORTS MEDICINE (SPM)**

Academic Representative:  
Professor Nancy Gray  
Veale Center, Ext. 5280  
E-mail: nmg@po.cwru.edu

### Minor Concentration in Sports Medicine

Hours: 18

Required Courses: PHED 332, 334, 339, 340, 341, 342

## **STATISTICS (STA)**

Academic Representative:  
Professor Paula Fitzgibbon  
Rm. 321 Yost Hall, Ext. 2306  
E-mail: paf3@po.cwru.edu

### Major (for B.A.)

Hours: 56

- A. MATH 121 (or 123), 122 (or 124), 223 (or 227), 224 (or 228), and 201 or equivalent;
- B. ENGR 131 or ECES 251 or approved alternate; plus an additional higher numbered course in computation from CMPS or ECES offerings or EPBI 414 or EPBI 420;
- C. STAT 325 and 326, STAT 345 and 346
- D. At least 15 hours of courses in statistical methodology to be chosen from statistics courses numbered 300 and higher offered by the Statistics Department, or approved courses in statistical methodology or probability taught in biostatistics, computer science, economics, mathematics, operations research, systems engineering, etc. At least 6 hours must be in STAT courses; STAT 243 and 244 may be counted.
- E. Two approved courses (or more) numbered 300 or above in an approved discipline outside statistics.

### Major (for B.S. in Statistics)

Hours required for graduation: 124

- A. MATH 121 (or 123), 122 (or 124), 223 (or 227), 224 (or 228), and 201 or equivalent;
- B. ENGR 131 or ECES 251 or approved alternate; plus an additional higher numbered course in computation from CMPS or ECES offerings or EPBI 414 or EPBI 420;
- C. STAT 325 and 326, STAT 345 and 346;
- D. At least 15 hours of courses in statistical methodology to be chosen from statistics courses numbered 300 and higher offered by the Statistics Department, or approved courses in statistical methodology or probability taught in biostatistics, computer science, economics, mathematics, operations research, systems engineering, etc. At least 6 hours must be in STAT courses; 243 and STAT 244 may be counted;
- E. Two approved courses (or more) numbered 300 or above in an approved discipline outside statistics;
- F. A combined total of 12 hours or more in ASTR, BIOL, CHEM, GEOL, PHYS which may be counted toward a major in that field including at least one of the following sequences: PHYS 121 and 122; CHEM 105, 106 and 113; BIOL 110, 210 and 211; BIOL 110, 220 and 221.

*Students are strongly encouraged to include advanced expository or technical writing courses in their programs.*

## STATISTICS (continued)

### Minor

Hours: 15

- A. STAT 243 and 244, or STAT 345 and 346, or other approved two-course sequence
- B. STAT 208 or STAT 312 or STAT 313 or STAT 332 or STAT 333 or STAT 325
- C. Two approved elective courses in statistics numbered 300 or above.

### Option in Actuarial Science

The actuarial program leading to either a B.A. or a B.S. in Statistics requires 30 hours in statistics and actuarial studies and must satisfy the requirements for the appropriate degree program with the following modifications of requirements (D) and (E):

- D. At least 12 hours of courses in statistical methodology to be chosen from statistics courses numbered 300 and higher offered by the or probability taught in biostatistics, computer science, economics, mathematics, operations research, systems engineering etc. At least 6 hours must be in STAT courses; STAT 243 and STAT 244 may be counted;
- E. MATH 431, OPRE 401, STAT 317.

Students can ordinarily expect to be prepared to take Actuarial Exams for at least 100 credits in the Society of Actuaries prior to graduation.

## THEATER ARTS (THR)

### Academic Representatives:

#### Dance

Professor Karen Potter

Mather Dance Center, Ext. 2854

E-mail: klp13@po.cwru.edu

#### Drama:

Professor Catherine L. Albers

Eldred Theater, Ext. 5926

E-mail: cla2@po.cwru.edu

### Concentrations for the major (for B.A.)

#### A. Acting

Hours: variable

1. Students interested in the acting concentration must audition in the spring semester of their freshman year
2. THTR 101, 102, 103, 123, 124 and one of the following: 227, 228, 229, 312, 327, or 329 and two of the following: 223, 224, or 352
3. At least four, but no more than eight hours of THTR 385 or THTR 386. Must be taken in the first four semesters as a declared major.
4. THTR 201, 231, 232, 306, 311, 331, 375, 376  
THTR 397 and 398 (honors study) highly encouraged in senior year
5. Six hours of 300-level or above English courses selected in consultation with an adviser; ENGL 324 and 325 (Shakespeare) are recommended.

## THEATER ARTS (continued)

- B. Dance Hours: variable
1. THTR 101, 102, 103, 104, 123, 124, 223, 224, 352, and one of the following:  
227, 228, 229, 312, 327, or 329
  2. At least four, but no more than eight hours of THTR 385 or THTR 386. Must be taken in the first four semesters as a declared major.
  3. THTR 189, 190, 203, 204, 303, 304, 413  
THTR 397 and 398 (honors study) highly encouraged in senior year
  4. Six hours of 300-level or above English courses selected in consultation with an adviser; ENGL 324 and 325 (Shakespeare) are recommended.
- C. Design/Technical Theater Hours: variable
1. THTR 101, 102, 103, 104, 123, 124, 223, 224, 352, and one of the following:  
227, 228, 229, 312, 327, or 329
  2. At least four, but no more than eight hours of THTR 385 or THTR 386. Must be taken in the first four semesters as a declared major.
  3. THTR 105, 227 or 329; 331, 380 and one of the following: 228, 229, 424 or 440  
THTR 397 and 398 (honors study) highly encouraged in senior year
  4. Six hours of 300-level or above English courses selected in consultation with an adviser; ENGL 324 and 325 (Shakespeare) are recommended.
- D. General Theater Hours: variable
1. THTR 101, 102, 103, 104, 123, 124, 223, 224, 352, and one of the following:  
227, 228, 229, 312, 327, or 329
  2. At least four, but no more than eight hours of THTR 385 or 386. Must be taken in the first four semesters as a declared major.
  3. THTR 231 or 232; 227 or 329; 331, 375 and two of the following: 228, 229, or 338
  4. Six hours of 300-level or above English courses selected in consultation with an adviser; ENGL 324 and 325 (Shakespeare) are recommended.

**NOTE:** Students must take at least 24 but no more than 42 hours in Theater Arts courses above the 100-level and the total number of hours in Theater Arts may not exceed 60.

### Concentrations for the minor

Hours: 18

- A. General Theater: THTR 101, 103, 123, 124, and one of the following: 223, 224, or 352 and one of the following: 227, 228, 229, 312, or 327
- B. Design/Technical: THTR 105, 123, 124 and two of the following: 223, 224, 352 and one of the following: 227, 228, 229, 312 or 327
- C. Dance: THTR 103, 104, 203, 204, 303, 304
- D. Acting: THTR 101, 102, 123, 124, 231, 375, 385 or 386

### Humanities Sequence (for B.S. based on Engineering Core)

Hours: 9

All sequences must include THTR 123 or 124 and two additional courses selected in consultation with adviser. Sample programs follow:

- A. Acting: THTR 123 or 124; THTR 101 and 102
- B. Dance: THTR 123 or 124; THTR 103 and 104
- C. Stagecraft: THTR 105; THTR 123 or 124; and THTR 223 or 224
- D. Costume Construction and History : THTR 123 or 124; THTR 352 and one of the following: 227, 228, 229, 312, or 327

## WOMEN'S STUDIES (WMN)

Academic Representative:  
Professor Jonathan Sadowski  
Mather House 204, Ext. 2622  
E-mail: jas34@po.cwru.edu

### Major

Hours: 30

#### A. Required Courses (6 hours)

1. WSTD 201
2. ANTH 365 or ENGL 371 or HSTY 400

#### B. Elective courses (24 hours)

Students must take at least two courses from two of the three areas listed below, and at least one course in the third area. The remaining courses may be selected from any of the three areas:

1. The Arts: ARTH 383, THTR 338
2. Humanities: ENGL 353, 368C, 370; FRCH 376; GRMN 315; HSTY 240, 313, 320, 350, 353, 354; JAPN 341; LAWS 356; PHIL 325, 334; RLGN 207, SPAN 342
3. Social Sciences: ANTH 306, 309, 345, 354, 356, 505, 508, 542; ECON 333; NURS 454; POSC 346; PSCL 390; SOCI 222, 326, 372

***NOTE: Women's Studies is available only as a second major for the B.A. To declare the major students should have declared a first major and have sophomore or junior standing. Up to six credits in courses taken by students for the first major may be applied to the Women's Studies major.***

***For a student who completes a Bachelor of Science degree (B.S., B.S.E., or B.S.N.), Women's Studies may serve as the sole major for a B.A. degree,***

### Minor

Hours: 18

WSTD 201 plus five additional courses, selected in consultation with the adviser.

### Humanities or Social Science Sequence\* (for B.S. based on Engineering Core)

Hours: 9

Nine hours of work selected in consultation with the program adviser from courses approved for inclusion in the Women's Studies Program.

**\*Will be identified by the adviser as a humanities or social science sequence on the basis of the courses taken.**

# THE CASE SCHOOL OF ENGINEERING

James W. Wagner, Dean  
312 Glennan Building, Ext. 4436  
E-mail: jww2@po.cwru.edu

## Degrees and Degree Requirements

### Bachelor of Science in Engineering (B.S.E.) Degree

The Bachelor of Science degree based on the Engineering Core is awarded in the following areas: aerospace engineering, biomedical engineering, chemical engineering, civil engineering, computer engineering, electrical engineering, engineering physics, fluid and thermal engineering science, materials science and engineering, mechanical engineering, polymer science and engineering, systems and control engineering, and undesignated engineering.

Candidates for the Bachelor of Science in Engineering (B.S.E.), in addition to meeting the general requirements for bachelor's degrees as described on page 4, must also complete the following requirements:

1. A minimum of 128-133 hours as specified by the requirements for each B.S.E. program.
2. The Engineering Core Curriculum
3. The requirements for the specific engineering major as presented in this handbook.

### Bachelor of Science (B.S.) - Computer Science

The Bachelor of Science degree in computer science is based on the Engineering Core Curriculum, with modifications. Candidates for the Bachelor of Science in Computer Science degree, in addition to meeting the general requirements for bachelor's degrees as described on page 4, must also complete the following requirements:

- A. A minimum of 127 hours.
- B. The Engineering Core Curriculum\*  
\*Candidates for the B.S. in Computer Science are exempt from ENGR 200, ENGR 210, and ENGR 225
- C. The requirements for the computer science major as presented in this handbook.

## The Engineering Core Curriculum

The Engineering Core curriculum of the Case School of Engineering provides a foundation in mathematics and sciences for programs in engineering and in computer science leading to the Bachelor of Science degree. The Engineering Core Curriculum is also designed to develop communication skills and to provide a body of work in the humanities and social sciences.

1. **Mathematics** (14 semester hours)  
MATH 121 or 123-Calculus for Science and Engineering I  
MATH 122 or 124-Calculus for Science and Engineering II  
MATH 223 or 227-Calculus for Science and Engineering III  
MATH 224 or 228-Elementary Differential Equations or an approved course in Introduction to Dynamic Systems
2. **Chemistry** (4 semester hours)  
CHEM 111-Principles of Chemistry for Engineers
3. **Physics** (8 semester hours)  
PHYS 121, 122 (regular)-General Physics I, II  
or  
PHYS 123, 124 (honors)-Physics and Frontiers I, II
4. **Engineering** (18 semester hours)  
ENGR 131-Elementary Computer Programming  
ENGR 145-Chemistry of Materials  
ENGR 200-Statics and Strength of Materials  
ENGR 210-Introduction to Circuits and Instrumentation  
ENGR 225-Thermal Dynamics, Fluid Dynamics, Heat and Mass Transfer
5. **Natural Science, Mathematics, or Statistics Requirement** (3 semester hours)  
as designated by the major department
6. **English Composition** (3 semester hours)  
ENGL 150. To be completed by the end of the first year with a grade of C or higher. Students having transfer credit for an English composition course taken at a US college/university and passed with a C or higher must pass an English Placement Test administered by the Department of English or earn a grade of C or higher in ENGL 180, a one-credit writing tutorial, to meet the graduation requirement in English composition.

7. **Humanities & Social Sciences** (21 semester hours)

The Humanities & Social Science requirement must include the following:

- a. ENGL 398N-Professional Communication for Engineers (3 semester hours)
- b. An approved sequence of 9 semester hours (three courses) in a single department or program in the Humanities or Social Sciences.
- c. A minimum of 6 semester hours (two courses) in the social sciences, and a minimum of 6 semester hours (two courses) in the humanities, not including the Professional Communications course.

For students who choose to complete a minor, up to 12 hours of these 21 hours may be used towards fulfillment of the minor requirements.

Humanities Sequences are offered in the following disciplines: American Studies, Art History, Art Studio, Artificial Intelligence<sup>\*\*</sup>, Asian Studies, Chinese, Classics, Comparative Literature, English, Environmental Studies<sup>\*\*</sup>, French, French Studies, German, History, History and Philosophy of Science and Technology, History of Technology and Science, Japanese, Music, Philosophy, Pre-Architecture, Religion, Russian, Spanish, Theater Arts, Women's Studies<sup>\*\*</sup>.

Social Science Sequences are offered in the following disciplines: Anthropology, Artificial Intelligence<sup>\*\*</sup>, Communication Sciences, Economics, Environmental Studies<sup>\*\*</sup>, Gerontological Studies, Human Development, Political Science, Psychology, Sociology, Women's Studies<sup>\*\*</sup>.

**Note: Art Studio courses cannot be used as part of the Humanities and Social Science requirement unless they are part of a sequence which includes at least two art history courses.** Sequences in art studio require four, rather than three, courses. The sequence in Pre-Architecture requires five courses.

Two semesters of beginning work in a foreign language may be counted toward satisfaction of the requirement for a three course sequence only when the sequence consists of three courses taken in a single foreign language. Credit for the first semester of beginning study (101 level) in a foreign language will not serve toward satisfaction of any degree requirement unless credit is earned for the second semester (level 102) as well.

<sup>\*\*</sup>Depending on the courses selected, sequences in Artificial Intelligence, Environmental Studies, and Women's Studies will be designated Humanities or Social Science by the program representative.

## Undergraduate Programs of The Case School of Engineering

*All major programs described in this section require completion of The Engineering Core (see pages 56-57). For all engineering programs, please see the CWRU General Bulletin and the individual departments for full details concerning technical electives, hours required and recommendations regarding the appropriate semester/year in which students should enroll in specific courses.*

### AEROSPACE ENGINEERING (EAR)

Academic Representative and  
Cooperative Education Adviser:  
Professor James S. T'ien  
415 Glennan, Ext. 4581  
E-mail: jst2@po.cwru.edu

Major: (for B.S. in Engineering)

Hours required for graduation: 128

- A. Engineering Core, with PHYS 221 satisfying the "natural sciences, mathematics or statistics" requirement
- B. Major Courses:  
EMAE 172, 181, 250, 282, 283, 325, 350, 355, 356, 359, 360, 376, 381, 382, 398
- C. Related Required Courses: ECIV 310; ESCI 212, 214
- D. Technical Elective (3 hours)

Cooperative Education:

Third Year - Spring/Summer  
Fifth Year - Summer/Fall

### BIOMEDICAL ENGINEERING (EBI)

Academic Representative:  
Professor Patrick E. Crago  
319A Wickenden, Ext. 3977  
E-mail: pec3@po.cwru.edu

Cooperative Education Adviser:  
Professor J. Thomas Mortimer  
3480 C.B. Bolton Building, Ext. 3973  
E-mail: jtm3@po.cwru.edu

Major: (for B.S. in Engineering)

Hours required for graduation: 132

- A. Engineering Core, with an approved science or mathematics course satisfying the "natural sciences, mathematics, or statistics" requirement.
- B. Major Courses  
EBME 201, 202, 306, 308, 309, 310, 313, 314, 359, 360, and 380 or 398
- C. EBME Specialty Sequence: 5-7 courses in a biomedical engineering specialty selected from Biomaterials (orthopedic), Biomaterials (polymeric), Biomechanics, Biomedical Computer and Imaging, Biomedical Instrumentation (devices), Biomedical Instrumentation (sensors), Biomedical Systems and Control
- D. Sequence-specific statistics course (STAT 312, 313, 332 or 333)

## **BIOMEDICAL ENGINEERING (continued)**

Minor (based on Engineering Core)

Hours: 15

A. EBME 201, 202

B. Two from the following: EBME 306, 309, 310

C. One from the following: EBME 303, 307, 320, 324

Cooperative Education:

arranged by the faculty adviser

*Note: EBME 105 is recommended and available only to freshmen.*

## **CHEMICAL ENGINEERING (ECE)**

Academic Representative and Cooperative Education Adviser:

Professor Philip Morrison

133 Smith Bldg., Ext. 4238

E-mail: [pwm5@po.cwru.edu](mailto:pwm5@po.cwru.edu)

Major: (for B.S. in Engineering)

Hours required for graduation: 131-133

A. Engineering Core, with one course chosen from BIOL 205, CHEM 224 (or 324) or PHYS 221 to satisfy the "natural sciences, mathematics or statistics" requirement.

B. Major Courses

ECHE 151, 260, 360, 361, 362, 363, 364, 365, 367, 398, 399

C. Related Required Courses:

CHEM 223, 290, 302, STAT 313 (or STAT 312)

D. Approved Technical Electives: 9-11 hours

E. Science Elective (any one of the following not chosen as the Engineering Core requirement): BIOL 205, CHEM 224 (or 324), PHYS 221

F. Materials Elective (any one of the following):

EMAC 270, EMAC 272, EMSE 314, EMSE 316 or other approved course

Minor (based on the Engineering Core)

Hours: 15

ENGR 225

ECHE 260, 360 plus two of the following: ECHE 361, 363, 364, 365, 367

Cooperative Education (Optimal times):

Third Year - Summer/Fall

Fourth Year - Spring/Summer

## CIVIL ENGINEERING (ECI)

Academic Representative  
Professor Robert Mullen  
206 Bingham Building - Ext 2423  
E-mail: [rlm@po.cwru.edu](mailto:rlm@po.cwru.edu)

Cooperative Education Adviser:  
Professor Adel S. Saada  
105A Bingham Building - Ext. 2427  
E-mail: [axs31@po.cwru.edu](mailto:axs31@po.cwru.edu)

Major: (*for B.S. in Engineering*)

Hours required for graduation: 129

- A. Engineering Core, with PHYS 221 (or approved alternative) satisfying the "natural sciences, mathematics, or statistics" requirement.
- B. Major Courses:  
ECIV 160, 211, 310, 320, 322, 330, 340, 351, 360, 368, 398
- C. Related Required Courses:  
EMAE 250, EMAE 181
- D. Approved Technical Electives: 12-15 hours\*

\* The approved technical electives allow the student to choose among the following areas of concentration:

- 1. Environmental Engineering
- 2. Structural Engineering
- 3. Geotechnical Engineering
- 4. Construction Engineering and Management
- 5. Engineering Mechanics

Minor (*based on Engineering Core*)

A minimum of 15 credit hours from one of the following areas approved by the department: Environmental Engineering, Engineering Mechanics, Structural or Geotechnical Engineering, Construction Engineering and Management.

### Cooperative Education

Optimal Times:

Second Year - Spring/Summer

Third Year - Summer

Fourth Year – Fall

## COMPUTER ENGINEERING (ECM) AND COMPUTER SCIENCE (CMP)

Academic Representative:  
Professor George W. Ernst  
508 Olin Bldg., Ext. 2839  
E-mail: ernst@eecs.cwru.edu

Cooperative Education Adviser:  
Professor Lee White  
402 Olin Bldg., Ext. 3919  
E-mail: ljw@po.cwru.edu

### Major in Computer Engineering: *(for B.S.E. in Engineering)*

Hours required for graduation: 129

- A. Engineering Core, with an approved statistics course satisfying the "natural sciences, mathematics, or statistics" requirement.
- B. Major Courses:  
ECES 233, 251, 281, 301; 318 or 338; 321,322,337,399 (If ECES 251 is not offered, students may take EMAE 250 or another ECES course chosen in consultation with their adviser)
- C. Related Required Courses: MATH 304
- D. Approved technical electives (12 hours)

### Minor in Computer Engineering: *(based on the Engineering Core)*

Hours: 15

- A. ECES 281, 233 plus one of the following tracks:
  - 1. Hardware sequence: ECES 321, 322
  - 2. Software sequence: ECES 337, 338
- B. In addition to these two tracks, the student may design his/her own track with the approval of the minor adviser.

### Major in Computer Science: *(for B.S.)*

Hours required for graduation: 127

- A. Engineering Core\* with an approved statistics course satisfying the "natural sciences, mathematics or statistics" requirement.
- B. ECES 233, 251, 281, 322, 337, 338, 340, 341, 343, 345, 391, 398 (If ECES 251 is not offered, students may take EMAE 250 or another ECES course chosen in consultation with their adviser)
- C. MATH 304
- D. Approved technical electives (12 hours)

\*\*Candidates for the B.S. in Computer Science are exempt from the following Engineering Core courses: ENGR 200, ENGR 210, and ENGR 225.

### Minor in Computer Science: *(based on the Engineering Core)*

Hours: 15

- A. ECES 233, 338, 340
- B. A student must take an additional four credit hours of ECES courses.

### Cooperative Education:

Optimal Times:

Third Year-Spring/Summer

Fourth Year-Summer/Fifth Year-Fall

For B.A. program in Computer Science, see page 27.

*Note: Because of the large overlap in courses, a student is not permitted to have a major and a minor or two minors in both Computer Science and Computer Engineering.*

## ELECTRICAL ENGINEERING (EAP)

Academic Representative (majors):  
Professor Steven Garverick  
511 Glennan Bldg., Ext. 6436  
E-mail: slg9@po.cwru.edu

Cooperative Education Adviser:  
Professor Francis L. Merat  
518 Glennan Bldg., Ext. 4572  
E-mail: flm@po.cwru.edu

Academic Representative (minors):  
Professor Dov Hazony  
710A Glennan Bldg., Ext. 3937  
E-mail: dxh2@po.cwru.edu

### Major: (for B.S. in Engineering)

Hours required for graduation: 128

- A. Engineering Core, with STAT 332 satisfying the "natural sciences, mathematics, or statistics" requirement
- B. Major Courses:  
EEAP 245, 246, 309, 321, 398, 399
- C. ECES 281
- D. Applied Statistics Elective (3 hours) -- EEAP 351, 352, or 355
- E. Approved Technical Electives (18 hours), including approved courses to constitute a depth of study (9 hours)
- F. Open Electives (9 hours)

### Minor (based on Engineering Core)

ECES 281, EEAP 245, 246, 309  
One approved technical elective

### Electronics Minor (available to B.A. students only)

Hours: 31

ENGR 131  
ECES 281  
MATH 125, 126 (or MATH 121, 122)  
PHYS 115, 116 (or PHYS 121, 122)  
ENGR 210  
EEAP 246

### Cooperative Education

Recommended Times:

Summer/Fall **AFTER** second year  
Spring/Summer of fourth year

## **ENGINEERING (Undesignated) (EGR)**

Academic Representative:  
Professor Donald L. Feke, Associate Dean  
312 Glennan Bldg., Ext. 4436  
E-mail: dlf4@po.cwru.edu

Major: (for B.S. in Engineering)

Hours required for graduation: 128

- A. Engineering Core, with PHYS 221 or approved alternative satisfying the "natural sciences, mathematics, or statistics" requirement.
- B. An engineering major concentration (minimum of 21 hours) approved by the major department
- C. An engineering minor (minimum of 15 hours) approved by the minor department
- D. ECES 251 or EMAE 250
- E. Technical electives

*The major should be declared in the freshman year and the program approved by the academic representative after major and minor approvals are obtained.*

## **ENGINEERING PHYSICS (EPH)**

Academic Representative and Cooperative Education Adviser:  
Professor Kenneth D. Singer  
225D Rockefeller Bldg., Ext. 4017  
E-mail: kds4@po.cwru.edu

Major (for B.S. in Engineering)

Hours required for graduation: 127

- A. Engineering Core, with PHYS 221 satisfying the "natural sciences, mathematics, or statistics" requirement
- B. Major courses: PHYS 208, 250, 310, 313, 315, 317, 318, 324, 325, 331, 353
- C. Related required courses:
  - CHEM 113
  - One course from EEAP 321, EEAP 420, EMSE 314, EMSE 405 or PHYS 332
- D. Engineering Physics concentration (12 hours)
  - An approved sequence of 4 courses in an engineering discipline

## **FLUID and THERMAL ENGINEERING SCIENCE (EFT)**

Academic Representative and Cooperative Education Adviser:  
Professor Joseph Prah  
418 Glennan Bldg., Ext. 2941  
E-mail: jmp@po.cwru.edu

Major: (for B.S. in Engineering)

Hours required for graduation: 128

- A. Engineering Core, with PHYS 221 (or approved alternative) satisfying the "natural sciences, mathematics, or statistics" requirement
- B. Major Courses:  
EMAE 152, 172, 181, 250, 282, 283, 325, 350, 355, 356, 359, 360, 398
- C. Related Engineering Courses:  
ESCI 212, 214
- D. Technical Electives (9 hours)

### Cooperative Education

Optimal Times:  
Third Year - Spring/Summer  
Fifth Year - Summer/Fall

## **MATERIALS SCIENCE and ENGINEERING (EMS)**

Academic Representative (Major/Minor):  
Professor Mark DeGuire  
506 White Bldg., Ext. 4221  
E-mail: mrd2@po.cwru.edu

Cooperative Education Adviser:  
Professor James Cawley  
500B White Bldg., Ext. 6482  
E-mail: jxc41@po.cwru.edu

Major: (for B.S. in Engineering)

Hours required for graduation: 128

- A. Engineering Core, with CHEM 301 satisfying the "natural sciences, mathematics, or statistics" requirement.
- B. Major Courses: EMSE 102, 201, 202, 203, 270, 280, 290, 301, 302, 303, 310, 312, 313, 314, 398, 399
- C. ECES 251 or PHYS 250 or EMAE 250
- D. Technical electives (9 hours)
- E. Open electives (9 hours)

Minor (based on Engineering Core)

Hours: 15

EMSE 201 plus four of the following courses selected in consultation with the department minor adviser: EMSE 202, 203, 301, 303, 307, 312, 313, 314, 316

### Cooperative Education

Optimal Times:  
Second Year - Summer  
Third Year - Fall  
Fourth Year - Spring/Summer

## **MECHANICAL ENGINEERING (EMC)**

Academic Representative and Cooperative Education Adviser:  
Professor Joseph M. Prah  
418 Glennan Bldg., Ext. 2941  
E-mail: jmp@po.cwru.edu

Major: (for B.S. in Engineering)

Hours required for graduation: 128

- A. Engineering Core, with PHYS 221 (or approved alternative) satisfying the "natural sciences, mathematics, or statistics" requirement
- B. Major Courses:  
EMAE 172, 181, 250, 271, 282, 283, 325, 350, 355, 360, 370, 398
- C. Related Required Courses:  
ECIV 310; ESCI 212, 214; OPRE 345
- D. Technical Electives (9 hours)

### Cooperative Education

Optimal Times:

Third Year - Spring/Summer

Fifth Year - Summer/Fall

## **POLYMER SCIENCE and ENGINEERING (POL)**

Academic Representative and Cooperative Education Adviser:  
Professor Steven D. Hudson  
337 Kent Smith, Ext. 6373  
E-mail: sdh6@po.cwru.edu

Major: (for B.S. in Engineering)

Hours required for graduation: 129

- A. Engineering Core, with an approved natural sciences course selected from PHYS 221, BIOL 210, BIOL 205, STAT 312, PHYS 349, or BIOC 307 satisfying the "natural sciences, mathematics, or statistics" requirement.
- B. Major Courses:  
EMAC 270, 272, 276, 351, 352, 372, 376, 377, 378, 398
- C. Related Required Courses:  
CHEM 223, 224; and CHEM 290 or 321
- D. Technical Electives (12 hours)

Minor: (based on the Engineering Core)

EMAC 270, plus four courses from the department listings, subject to approval by minor adviser

### Cooperative Education

Optimal Times:

Third Year - Spring/Summer

Fifth Year - Summer/Fall

## SYSTEMS and CONTROL ENGINEERING (ESY)

Academic Representative:  
Professor N. Sreenath  
608 Olin Bldg., Ext. 6219  
E-mail: nxs6@po.cwru.edu

Cooperative Education Adviser:  
Professor Kenneth Loparo  
705 Olin Bldg., Ext. 4115  
E-mail: kal4@po.cwru.edu

Major: (for B.S.E. in Engineering)

Hours required for graduation: 128

- A. Engineering Core, with one course chosen from MATH 307, MATH 321, PHYS 221, STAT 345, or MATH 345 to satisfy the "natural sciences, mathematics, or statistics" requirement.
- B. Major Courses: ESCI 110, 212, 214, 304, 305, 313, 322, 346, 352, 398, 399
- C. Related Required Courses: MATH 201, STAT 312 or STAT 332
- D. 4 Technical Electives (12 hours) from an approved list
- E. One technical elective (3 hours) with laboratory, from an approved list

Minor: (based on Engineering Core)

Hours: 15

A total of five courses are required to obtain a minor. Three of the five must be from the following: ESCI 212, 214, 304, 346, 352.

The remaining two courses are to be chosen from the available courses in the department and require the written approval of the faculty member in charge of the minor program.

Examples:

- A. Systems: ESCI 110, ESCI 352
- B. Control: ESCI 313, 306

### Cooperative Education

Optimal Times:

Third Year - Spring/Summer

Fourth Year - Summer

Fifth Year - Fall

## THE FRANCES PAYNE BOLTON SCHOOL OF NURSING

Dorothy Brooten, Dean  
School of Nursing  
2121 Abington Road, Ext. 2545  
E-mail: dab9@po.cwru.edu

### **Bachelor of Science in Nursing (B.S.N.) Degree Requirements**

The Bachelor of Science in Nursing (B.S.N.) degree is based on the School of Nursing General Education Requirements. Candidates for the Bachelor of Science in Nursing (B.S.N.) degree must complete the general requirements for bachelor's degrees (page 4) and also complete the following requirements:

1. A minimum of 122 hours.
2. The School of Nursing General Education Requirements.
3. The requirements for the major in nursing as presented in this handbook.
4. For all courses taken in nursing, a minimum grade of C.

*Students in this program may not exercise the P/NP option for any courses*

### **School of Nursing General Education Requirements**

The General Education Requirements of the Frances Payne Bolton School of Nursing are based upon the Arts and Sciences General Education Requirements, and provide a broad educational foundation for the Bachelor of Science in Nursing program.

1. ***The English Composition Requirement*** (3 semester hours)  
ENGL 150. To be completed by the end of the first year with a grade of C or higher. Students having transfer credit for an English composition course taken at a US college/university and passed with a C or better must pass an English Placement Test administered by the Department of English or earn a grade of C or higher in  
ENGL 180, a one-credit writing tutorial, to meet the graduation requirement in English composition.
2. ***Natural and Mathematical Sciences*** (17 semester hours total)
  - a. *Mathematical Reasoning and Analysis:*  
a statistics course chosen from ANTH 319\* or PSCL 282\* STAT 201\*
  - b. *Natural Sciences:* BIOL 110, 119, 121, 150

\*A student completing successfully any one of these three courses is not eligible to enroll in or receive credit for either of the other two.
3. ***Arts and Humanities*** (12 semester hours total) The requirement is the same as the Arts and Humanities requirements of the Arts and Sciences General Education Requirements (page 11) except that the two courses taken under a single heading need not form a sequence.
4. ***Social Sciences*** (6 semester hours total)
  - a. ANTH 102 or PSCL 101 or SOCI 112
  - b. SOCI 203 or approved course in human growth and development
5. ***Global and Cultural Diversity*** (3 semester hours) The requirement is the same as the Global and Cultural Diversity requirement of the Arts and Sciences General Education Requirements (page 13)

## **NURSING (NUR)**

Academic Representative:

Dr. Beverly Roberts, Associate Dean for Academic Affairs

1060 School of Nursing

E-mail: blr4@po.cwru.edu

Major (for B.S.N.)

Hours required for graduation: 122

A. Required Courses in Nursing (81 Hours)

NURS 110, 111, 120, 122, 201, 222, 230, 240, 315,  
316, 317, 318, 320, 341, 342, 343, 344, 345, 346, 351, 353,  
352 or 354 or 356

B. School of Nursing General Education Requirements (41 hours)

# WEATHERHEAD SCHOOL OF MANAGEMENT

William Laidlaw, Interim Dean  
500 Enterprise Hall, Ext. 2046  
E-mail: wx114@po.cwru.edu

## Degree Programs and Requirements

### Bachelor of Science (B.S.) Degree - Weatherhead School of Management

The B.S. degree based on the Weatherhead School of Management General Education Requirements is awarded in Accounting and Management. Candidates for the Bachelor of Science in Accounting and the Bachelor of Science in Management degrees, in addition to meeting the general requirements for bachelor's degrees as described on page 4, must also complete the following requirements:

1. A minimum of 122 hours.
2. The Weatherhead School of Management General Education Requirements
3. A minimum of 30 semester hours of courses at the 300-400 level.
4. The requirements for a major field as presented in this handbook. For all courses taken in the major department and for which grades are averaged, and for all courses taken to satisfy major requirements and for which grades are averaged, a candidate for a B.S. from the Weatherhead School of Management must earn a minimum cumulative average of 2.00. Major requirements include all required and elective work completed in the major department combined with required courses completed in related fields. Transfer students must complete at Case Western Reserve University at least half the hours required for the major.

## Weatherhead School of Management General Education Requirements

The Weatherhead School of Management General Education Requirements are based upon the Arts and Science General Education Requirements, and provide a broad educational foundation for programs in accounting and management, leading to the Bachelor of Science degree.

1. ***The English Composition Requirement*** (3 semester hours)  
ENGL 150. To be completed by the end of the first year with a grade of C or higher. Students having transfer credit for an English composition course taken at a US college/university and passed with a C or better must pass an English Placement Test administered by the Department of English or earn a grade of C or higher in  
ENGL 180, a one-credit writing tutorial, to meet the graduation requirement in English composition.
2. ***Natural and Mathematical Sciences*** (for accounting majors, 17 semester hours total; for management majors, 20 semester hours total) In addition to the specified mathematics and statistics courses, students must complete at least one course from area b) Natural Sciences, and an additional course from area b) or from area c) Science and Society.
  - a. ***Mathematical Reasoning and Analysis:*** (11-14 semester hours):  
MATH 125-MATH 126 or equivalent courses in introductory calculus, and  
STAT 207; management majors must also complete STAT 208
  - b. ***Natural Sciences:*** (minimum 3 semester hours) See Arts and Sciences  
General Education Requirements (page 12)
  - c. ***Science and Society:*** (0-3 semester hours) See Arts and Sciences General  
Education Requirements (page 12)

## Weatherhead School of Management General Education Requirements (continued)

3. **Arts and Humanities** (for accounting, 9 semester hours total; for management 12 semester hours total) The requirement is the same as the Arts and Humanities requirement of the Arts and Sciences General Education Requirements (see page 12), except that accounting majors are exempt from the 3-hour arts requirement.
4. **Social Sciences** (for accounting, 12 semester hours total; for management, 9 semester hours total)
  - a. *Social Institutions*: (6 semester hours): ECON 102 and 103
  - b. *Human Behavior and Development*: (3-6 semester hours)  
Accounting majors must complete two courses (6 semester hours) in this area, as follows:
    - 1) COSI 100 or COSI 236, and
    - 2) PSCL 101 or SOCI 112Management majors must complete one course (3 semester hours), selected from the following:  
ANTH 104, COSI 100, COSI 109, PSCL 101, SOCI 112, SOCI 310
5. **Global and Cultural Diversity** (3 semester hours) The requirement is the same as the Global and Cultural Diversity requirement of the Arts and Sciences General Education Requirements (see page 13).

## Undergraduate Programs of The Weatherhead School of Management

### ACCOUNTING (ACC)

Academic Representative and Professional Practicum Adviser:  
Professor Timothy Fogarty  
663 Enterprise Hall, Ext. 3938  
E-mail: tjf@po.cwru.edu

***Students may not use the P/NP option for any Weatherhead School of Management Courses (ACCT, BAFI, BLAW, ENTP, LHRP, MIDS, MKMR, OPMT, ORBH, OPRE, PLCY)***

Major (for B.S. in Accounting)

Hours required for graduation: 122

A. Requirements in Accounting and Management (60 hours):

|  |    |
|--|----|
| ACCT 101, 102, 300, 301, 302, 304, 305, 314                                  | 24 |
| BAFI 355   | 3  |
| BLAW 329, 330  | 6  |
| MIDS 308, 309  | 6  |
| MKMR 301   | 3  |
| OPMT 350   | 3  |
| ORBH 250   | 3  |
| PLCY 399   | 3  |
| Electives in Weatherhead School of Management (no more than 6 hours in ACCT) | 9  |

B. Requirements in other fields (47 hours):

|   |    |
|---|----|
| WSOM General Education Requirements (see page 65) | 44 |
| ECON 341  | 3  |

C. Open/Non-WSOM Electives (must be from *outside* WSOM, or from economics) 15

Students in B.S. in Accounting are advised to take ACCT 101, 102 and ECON 102, 103 as early as possible.

Minor

Hours: 15

ACCT 101, 102, 300, and two additional 300-level accounting courses.

Professional Practicum:

Optimal Times:

Third Year - Spring Semester

## ECONOMICS (ECO)

Economics is offered as a major for the B.A. degree awarded by the College of Arts and Sciences.

See page 28 for descriptions of major, minor, and sequence programs in economics

## ENTREPRENEURIAL STUDIES (ENT)

Academic Representative:  
Professor David Deeds  
Sears 540, Ext. 6008  
E-mail: dxd5@po.cwru.edu

### Minor

Hours: 15

1. ACCT 102 or ACCT 303
2. MKMR 301
3. ENTP 295, ENTP 310, and ENTP 311

## MANAGEMENT (MGT)

Academic Representative:  
and Professional Practicum Adviser:  
Dr. Gary Previts  
625 Enterprise Hall, Ext. 2074  
E-mail: gjp@po.cwru.edu

Academic Representative:  
Mr. Kevin Carduff  
341 Enterprise, Ext. 1093  
E-mail: kcc@po.cwru.edu

*Students may not use the P/NP option for any WSOM course (ACCT, BAFI, BLAW, ENTP, LHRP, MIDS, MKMR, OPMT, ORBH, OPRE, PLCY)*

### Major (for B.S. in Management)

Hours required for graduation: 122

#### A. Requirements in Management (48 hours):

|   |   |
|---|---|
| ACCT 101, 102   | 6 |
| BAFI 355  | 3 |
| LHRP 251 or LHRP 311  | 3 |
| MIDS 308, 309   | 6 |
| MKMR 301  | 3 |
| OPMT 350  | 3 |
| OPRE 201  | 3 |
| ORBH 250  | 3 |
| PLCY 200, 399   | 6 |
| Management Concentration Sequence* of three courses (see below) | 9 |
| Management elective   | 3 |

\* Students must complete a sequence of three approved courses from one of the areas shown below:

|          |             |
|----------|-------------|
| Finance  | Information |
| BAFI 341 | Systems     |
| BAFI 356 | MIDS 310    |
| BAFI 359 | MIDS 326    |
| BAFI 372 | MIDS 327    |
|          | MIDS 329    |

## MANAGEMENT (continued)

NOTE: Special sequences may be arranged in Marketing or in Human Resources. Consult the Weatherhead Office of Undergraduate Services for appropriate forms and information about the approval process.

- B. Requirements in other fields (47 hours):  
WSOM General Education Requirements (see page 71) 47
- C. Non-WSOM Electives (must be from *outside* WSOM, or from economics) 15
- D. Open Electives 12

### Professional Practicum

Optimal Times:

Third Year - Spring

Fourth Year - Fall

## MANAGEMENT INFORMATION & DECISION SYSTEMS (MID)

Academic Representative:

Professor WooYoung Chung

699 Enterprise Hall, Ext. 2144

E-mail: isdept@po.cwru.edu

### Minor

Hours: 15-18

1. One of ENGR 131 or MIDS 307
2. MIDS 308, 309 and two additional MIDS courses or other courses approved by the minor adviser

## ACADEMIC ADVISING

Academic advising is an important component of the educational program at Case Western Reserve University. Academic advisers assist students in the exploration of academic opportunities at the University and in the selection of courses. Advisers may refer students to other sources of information and assistance at the University. Students are expected to initiate and maintain regular contact with their advisers to address the student's curricular and career concerns, and to review progress towards graduation. Students are responsible for obtaining required signatures on all forms relating to registration, major and minor declaration, and graduation.

### FRESHMAN ADVISERS

The freshman advisers are faculty members and administrators interested in helping entering students to plan a course of study and to meet effectively the challenges of college work. They are ready to discuss plans for careers and further study in graduate or professional schools and to refer students to other sources of advice and counseling as necessary. Freshmen are urged to consult their advisers at any time about their academic interests or concerns, and must have their schedules and changes of schedules (drop/add and withdrawal cards) approved and signed by their advisers.

### SELECTION OF MAJORS AND MINORS; DEPARTMENTAL ADVISERS

Although some freshmen enter with definite goals, they are not assigned to departmental advisers until they have completed at least a semester's work. After the completion of the first semester's work, students should seek from department chairs or representatives specific information regarding programs and major concentration in which they have an interest. See pages 8 and 9 for a list of designated representatives.

Students should select a major by no later than the end of the sophomore year. When a student selects a specific major or minor, the department representative assigns a faculty adviser. A choice or change of major or minor is not recorded for any student until the major or minor declaration form, bearing the signature of the student, the name of the adviser, and the signature of the department representative, has been completed and returned to the Office of Undergraduate Studies, Baker 102.

After the freshman year, students who have not declared a major should consult the Office of Undergraduate Studies for advice and schedule approval.

### PRE-PROFESSIONAL AND SPECIAL PROGRAM ADVISERS

Students planning to study at the graduate or professional school level or who are interested in special undergraduate programs at the University are urged to consult the appropriate adviser.

#### Accountancy (MACC)

Professor Larry Parker  
650 Enterprise Hall, Ext. 2065  
E-mail: lmp3@po.cwru.edu

#### Management (MBA)

Professor Ajai Singh  
686 Enterprise, Ext. 0802  
E-mail: aks8@po.cwru.edu

#### Dentistry

Dr. Joanne Westin  
Office of Undergraduate Studies  
102 Baker Building, Ext. 2928  
E-mail: jxw3@po.cwru.edu

#### Medicine

Dr. Joanne Westin  
Office of Undergraduate Studies  
102 Baker Bldg., Ext. 2928  
E-mail: jxw3@po.cwru.edu

#### Law

Office of Undergraduate Studies  
102 Baker Bldg., Ext. 2928  
xx142@po.cwru.edu

#### Nursing

Dr. Beverly Roberts  
School of Nursing, Ext. 2541  
E-mail: blr4@po.cwru.edu

## **ADVISERS FOR SPECIAL PROGRAMS**

For further information concerning special programs consult:

### **B.S./M.S. (Engineering)**

Professor Donald L. Feke  
Associate Dean for Academic Affairs  
Case School of Engineering  
312 Glennan Bldg., Ext. 8760  
E-mail: [dlf4@po.cwru.edu](mailto:dlf4@po.cwru.edu)

### **B.S./M.S. (Science or Math)**

Dean Margaret Robinson  
Office of Undergraduate Studies  
102 Baker Bldg., Ext. 2928  
E-mail: [mxr5@po.cwru.edu](mailto:mxr5@po.cwru.edu)

### **Binary Program**

Professor Dario Gasparini  
Faculty Adviser of Binary Programs  
Case School of Engineering  
Bingham 209, Ext. 2699  
[dag6@po.cwru.edu](mailto:dag6@po.cwru.edu)

### **COOP Program**

Ms. Deborah Fatica  
Office of Curricular Enhancement  
& External Assessment  
305 Olin Bldg., Ext 4449  
E-mail: [dx3@po.cwru.edu](mailto:dx3@po.cwru.edu)

### **Fellowships/Scholarships**

Dean Margaret Robinson  
Office of Undergraduate Studies  
102 Baker Bldg., Ext. 2928  
E-mail: [mxr5@po.cwru.edu](mailto:mxr5@po.cwru.edu)

### **Integrated Graduate Studies**

Department Chair and  
Dean Margaret Robinson  
Office of Undergraduate Studies  
102 Baker Bldg., Ext. 2928  
E-mail: [mxr5@po.cwru.edu](mailto:mxr5@po.cwru.edu)

### **Internships and Practica**

Ms. Heidi McCormick  
Career Center  
206 Sears Bldg., Ext. 4446  
E-mail: [hxm29@po.cwru.edu](mailto:hxm29@po.cwru.edu)

### **Junior Year Abroad**

Dean Margaret Robinson and  
Ms. Claudia Anderson  
102 Baker Bldg., Ext. 2928  
E-mail: [mxr5@po.cwru.edu](mailto:mxr5@po.cwru.edu)  
[cca2@po.cwru.edu](mailto:cca2@po.cwru.edu)

### **Minority Student Programs**

Director of Multicultural Affairs  
116 Baker Bldg., Ext. 2904

### **Senior Year in *absentia***

Dean Margaret Robinson  
Office of Undergraduate Studies  
102 Baker Bldg., Ext. 2928  
E-mail: [mxr5@po.cwru.edu](mailto:mxr5@po.cwru.edu)

### **Senior Year in Professional Studies**

Dean Margaret Robinson  
Office of Undergraduate Studies  
102 Baker Bldg., Ext. 2928  
E-mail: [mxr5@po.cwru.edu](mailto:mxr5@po.cwru.edu)

### **Teacher Licensure**

Professor Phil Safford  
Mather House, Ext. 4155  
E-mail: [psafford@aol.com](mailto:psafford@aol.com)

Professor Timothy Shuckerow

115 Wickenden, Ext. 2714  
E-mail: [txs10@po.cwru.edu](mailto:txs10@po.cwru.edu)

### **Undergraduate Scholars Program**

Dean Timothy Dodd  
Office of Undergraduate Studies  
102 Baker Bldg., Ext. 2928  
E-mail: [tmd6@po.cwru.edu](mailto:tmd6@po.cwru.edu)

### **Washington Semester**

Professor Frances Lee  
Department of Political Science  
111 Mather House, Ext. 5265  
E-mail: [fel@po.cwru.edu](mailto:fel@po.cwru.edu)

## **CAREER COUNSELING**

For students needing assistance in making or planning career choices, the Career Center (206 Sears Bldg., Ext. 4446) offers a variety of services.

## **PRE-PROFESSIONAL CURRICULA**

In order to meet the admission requirements of most schools of law, management, medicine and dentistry, nursing and social work, students complete an appropriate pre-professional curriculum that can be integrated into the other requirements for the baccalaureate they are pursuing.

### **BUSINESS ADMINISTRATION**

Students interested in entering a program leading to the Master in Business Administration (M.B.A.) degree may complete any course of study leading to a B.A. or B.S. degree. Two semesters of calculus are strongly recommended. By including appropriate courses in their undergraduate work, students may qualify to apply for an accelerated M.B.A. program at the Weatherhead School of Management at Case Western Reserve University.

### **LAW**

Pre-law students may major in any area in the humanities, natural sciences, social sciences or management. In fulfilling the requirements of their programs, they should select courses that place an emphasis on writing skills, logical analysis and analytical methods. In addition to core or general education requirements, it is strongly recommended that students take at least one course in accounting.

### **MEDICINE AND DENTISTRY**

Students planning careers in medicine or dentistry may pursue any of the degree and/or major programs offered at the University. They can satisfy the admission requirements of virtually all U.S. medical or dental schools and be well prepared for the MCAT and/or DAT by incorporating into their studies two semesters of Principles of Chemistry with laboratory; two semesters of Organic Chemistry with laboratory; four semesters of Biology including Chemical Biology, Cell Biology and Organismal Biology; two semesters of Physics with laboratory; two semesters of calculus, and two semesters of English. Normally the required courses are completed by the end of the student's junior year. Individual medical or dental schools may impose additional admission requirements. Students desiring information regarding the requirements of specific schools can obtain it in 102 Baker Building.

### **NURSING**

Students interested in entering professional studies at a graduate level should plan a program that includes the following courses: General Biology with laboratory (8 hours); General Chemistry with laboratory (8 hours); Statistics (3 hours); English composition (3 hours); Humanities and Literature (6 hours); Psychology (6 hours); Sociology and/or Anthropology (6 hours).

### **SOCIAL WORK**

Students interested in pursuing professional studies in social work must complete a minimum of 24 hours in the social and behavioral sciences. The Mandel School of Applied Social Sciences of Case Western Reserve University requires in addition completion of a course in human biology.

## **INTEGRATED UNDERGRADUATE AND GRADUATE/PROFESSIONAL SCHOOL PROGRAMS**

### **B.S./M.ACC.**

Joint B.S. in Accounting/Master of Accountancy (M.Acc.)

Students who are candidates for the B.S. in accountancy and who wish to earn a master's degree in accountancy may apply to the B.S./M.Acc. program. Students in the program enroll during the senior year in 6 hours of M.Acc. courses that will serve toward satisfaction of both the B.S. and M.Acc. degree requirements. Before taking graduate coursework, the student must have completed all prerequisites for the course on the undergraduate level and have a "B" average in those prerequisites. Following completion of the B.S., students in the program will enroll in the Weatherhead School of Management to complete an additional 30 hours of courses to satisfy M.Acc. degree requirements. For information, see Prof. Parker, 650 Enterprise Hall, Ext. 2065.

Accelerated B.S.in Accounting/Master of Accountancy (M.Acc.) program

This program allows motivated students to accelerate their pursuit of both the B.S. and M.Acc. degrees. In addition to applying six credit hours of Weatherhead graduate coursework towards their undergraduate degree program, students in this program may begin taking more graduate coursework before completing all of their undergraduate degree requirements. To enroll in this program, students must have:

1. Completed 90 hours of undergraduate coursework
2. Completed all of the undergraduate Weatherhead General Education Requirements
3. Completed 36 hours of the Weatherhead Management requirements (including 18 hours of the required Accountancy coursework)
4. Achieved at least a 3.0 overall GPA

Students in this program will receive both the B.S and the Master's degree at the end of the program. For the first eight semesters of study, the student will register as undergraduates in Case Western Reserve University; thereafter, students will register in the graduate professional degree program in the Weatherhead School of Management.

### **B.S./M.S.**

The Integrated B.S./M.S. Program is intended for highly-motivated candidates for the B.S. in engineering, computer science, mathematics, natural sciences or statistics whose objective is a degree at the master's or doctor's level. Application to the BS/MS program must be made after completion of 75 semester hours of coursework and prior to attaining senior status (completion of 90 semester hours). Generally, this means that a student will submit the application during his/her sixth semester of undergraduate course enrollment and will have no more than two semesters of remaining BS requirements to complete.

A student admitted to the program may, in the senior year, take up to nine hours of graduate courses that will count towards both BS and MS requirements. The courses to be double-counted must be specified on the student's MS Program of Study. Students for whom the master's project or thesis is a continuation and development of the senior project should register for Exxx 651 Thesis (or the appropriate project course) during the senior year and are expected to complete all other courses for the BS before enrolling in further MS coursework and thesis (continuing the senior project). Students for whom the master's thesis or project is distinct from the senior project will be expected to complete the BS degree before taking further graduate courses for the master's degree.

Students wishing to pursue the M.S. in engineering or in computer science through the B.S./M.S. Program may obtain information from Professor Don Feke, Associate Dean of Engineering, 312 Glennan. Students wishing to pursue the M.S. in mathematics, a science, or statistics through the B.S./M.S. Program may obtain information from Dean Margaret Robinson in the Office of Undergraduate Studies, Baker 102.

### **EARLY DECISION FOR ADMISSION TO SCHOOL OF LAW**

This program is open to outstanding students who have completed two years of undergraduate study in the colleges and have taken the Law School Admission Test (LSAT). Up to four students per year will be granted a conditional commitment of admission to the CWRU School of Law. The commitment will be honored upon successful completion of a program planned individually with the Pre-Law Adviser.

### **INTEGRATED GRADUATE STUDIES (B.A./M.A. or B.A./M.S.)**

The Integrated Graduate Studies Program (IGS) is intended for highly motivated undergraduate students who are candidates for the B.A. and whose objective is a degree at the Master's or Doctor's level. By more closely integrating undergraduate and graduate studies, qualified students may be admitted to graduate study for their senior year and pursue the simultaneous completion of requirements for both the Master's and Bachelor's degrees. The baccalaureate will normally be awarded upon completion of a year of graduate study and attainment of a total of 120 semester hours of credit.

Eligibility requirements for admission to graduate school through IGS are:

1. 90 semester hours earned of which the last 60 hours must have been in residence at Case Western Reserve University
2. Completion of the Arts and Sciences General Education Requirements and two semesters of physical education
3. Completion of three quarters of the requirements for the major concentration.

For information, see Dean Margaret Robinson in the Office of Undergraduate Studies, Baker 102, Ext. 2928

## **PRE-PROFESSIONAL SCHOLARS PROGRAMS and THE 6-YEAR DENTAL PROGRAM**

These programs grant to a few outstanding freshman applicants to CWRU conditional commitments of admission to the appropriate professional school at CWRU. These commitments are honored upon successful completion of the requirements established by each professional school.

### **SENIOR YEAR *IN ABSENTIA***

Students of superior ability and attainment who are candidates for the B.A. and are offered admission to a medical or dental school other than those at Case Western Reserve University at the end of the junior year are eligible for an opportunity to shorten their entire course of studies by one year through the Senior Year *in absentia* privilege. Application for this privilege should be made during the second semester of the junior year through the Dean of Undergraduate Studies. A student granted the Senior Year *in absentia* privilege is permitted to substitute the work of the first year in a professional school for that required during the last year in the undergraduate college. Upon the satisfactory completion of the first year's work in the professional school, the student will be granted the B.A. from the College of Arts and Sciences. The privilege is extended to qualified students who attend medical schools in the United States or Canada approved by the Association of American Medical Colleges or dental schools in the United States approved by the American Association of Dental Schools.

To be eligible for the senior year *in absentia* privilege, a student must:

1. Attain a cumulative grade point average of at least 3.20 in all courses attempted from the date of admission as an undergraduate.
2. Meet the following degree requirements:
  - a. Completion of the Arts and Sciences General Education Requirements and two semesters of physical education, unless excused from the latter.
  - b. Completion of three-fourths of the courses required for the major, including three-fourths of the courses required in the major department.
  - c. Completion of 84 hours of arts and sciences courses. These credits may be drawn from those offered by the College of Arts and Sciences as well as those in economics, biochemistry, nutrition or computer science.

In addition to meeting all requirements listed above, students qualifying for the senior year *in absentia* privilege must have completed at least 90 semester hours of academic credit, of which the final 60 hours must have been in residence. A student may include in that final 60 hours no more than six semester hours earned in courses completed in other institutions, either by cross registration in regular sessions or by approved transient registration in summer sessions.

For information, see Dean Margaret Robinson in the Office of Undergraduate Studies, Baker 102, Ext. 2928

## **SENIOR YEAR IN PROFESSIONAL STUDIES AT CWRU**

Students of superior ability and attainment who are candidates for the B.A. and who are admitted to professional studies in CWRU by the end of the junior year are offered an opportunity to shorten their entire course of studies by one year through the Senior Year in Professional Studies privilege. Application should be made during the second semester of the junior year through the Dean of Undergraduate Studies. This privilege is extended to students who are candidates for the B.A. and who attend the School of Dentistry, the School of Medicine, the Frances Payne Bolton School of Nursing, or the Mandel School of Applied Social Sciences of CWRU.

A student granted the senior year in professional studies privilege is permitted to substitute the work of the first year in a professional school for that required during the last year in the undergraduate college. Upon the satisfactory completion of the first year's work in the professional school, the student will be granted the bachelor's degree from the College of Arts and Sciences. To be eligible for the senior year in professional studies privilege, a student must:

1. Be accepted for admission to professional studies in Case Western Reserve University.
2. Meet the following degree requirements:
  - a. Completion of the Arts and Sciences General Education Requirements and two semesters of physical education, unless excused from the latter.
  - b. Completion of three-fourths of the requirements for the major, including three-fourths of the courses required in the major department.
  - c. Completion of 84 hours of arts and sciences courses. These credits may be drawn from those offered by the College of Arts and Sciences as well as those in economics, biochemistry, nutrition or computer science.

In addition to meeting all requirements listed above, students qualifying for the senior year in professional studies privilege must have completed at least 90 semester hours of academic credit, of which the final 60 hours must have been in residence. A student may include in that final 60 hours no more than six semester hours earned in courses completed in other institutions, either by cross registration in regular sessions or by approved transient registration in summer sessions.

For information, see Dean Margaret Robinson in the Office of Undergraduate Studies, Baker 102, Ext. 2928

## SPECIAL UNDERGRADUATE PROGRAMS

### CO-OP PROGRAM

Cooperative education offers the opportunity to students to find during their undergraduate careers full-time employment consistent with their major fields of study. This program is available to students pursuing degrees in accounting, management, engineering and all science departments except astronomy. For additional information contact

Ms. Deborah Fatica, Office of Curricular Enhancement and External Assessment, 305 Olin Bldg, Ext. 4449. E-mail: [dx3@po.cwru.edu](mailto:dx3@po.cwru.edu).

### DEAN'S APPROVED MAJOR

Any student interested in developing a major for the B.A. of his/her own design may submit, before the end of the sophomore year, a proposed program for approval by the Deans' Committee. For additional information contact Dean Margaret Robinson

(E-mail: [mxr5@po.cwru.edu](mailto:mxr5@po.cwru.edu)) or Dean Timothy Dodd (E-mail: [tmd6@po.cwru.edu](mailto:tmd6@po.cwru.edu)), Office of Undergraduate Studies, 102 Baker Building, Ext. 2928.

### DISABILITIES SERVICES

Students with documented learning disabilities, physical disabilities, chronic illness, or other documented disabilities are eligible for individualized services and arrangements through the Office of Educational Support Services. For additional information, contact Susan Sampson, Kelvin Smith Library 105, Ext. 5230 (TDD: 368-3059).

E-mail: [sms17@po.cwru.edu](mailto:sms17@po.cwru.edu)

### DUAL DEGREE

*To qualify for two undergraduate degrees, i.e., a B.A. and a B.S. degree, or two B.S. degrees, a student must satisfy all requirements for each degree, and complete for the second degree thirty semester hours of study beyond the hours required for the first degree.* A student may, however, complete two or more majors within the 120 hour minimum requirement for the B.A. degree. Students completing both a B.A. and a B.S. degree are exempted from 6 hours of the 90 hour arts and sciences requirement for the B.A. A student desiring to be a candidate for two degrees should meet with a dean in the Office of Undergraduate Studies, Baker 102, to apply for dual degree candidacy.

### EDUCATIONAL SUPPORT SERVICES

The Office of Educational Support Services (Kelvin Smith Library, Room 105, Ext. 5230) offers a variety of services including educational counseling, tutoring, study skills development and time management. The Plain Dealer Electronic Learning Center houses computers available to undergraduates, with priority given to commuters and to students participating in the Minority Scholars Program.

### INTERNSHIPS AND PRACTICA

The Internship and the Professional Practicum Programs offer the opportunity for students to find during the undergraduate careers part-time or full-time employment consistent with their major fields of study. This program is available to students pursuing degrees in accounting, management, and the arts and sciences. For additional information contact Heidi McCormick, Career Center, 206 Sears Library Building, Ext. 4446. E-mail: [hxm29@po.cwru.edu](mailto:hxm29@po.cwru.edu)

## **JUNIOR YEAR ABROAD**

Full-time students who have earned a 3.00 grade point average are eligible to apply for the Junior Year Abroad. Up to thirty-six hours of credit may be granted for study at an established foreign university or for approved foreign study programs offered through accredited American universities. Programs must be approved by the dean and the student's major adviser. Interested students should contact Dean Margaret Robinson (mxr5@po.cwru.edu) or Ms. Claudia Anderson (cca2@po.cwru.edu) in the Office of Undergraduate Studies, Baker 102, Ext. 2928.

## **INTERNATIONAL EXCHANGE PROGRAMS**

Qualified students may participate in international exchange programs which send CWRU students overseas and bring to CWRU visiting international students. Up to 32 semester hours of credit may be granted for study as an exchange student at an established foreign university with which CWRU has an exchange program. CWRU students participating in exchange programs pay tuition to CWRU and maintain CWRU student status during the period of the exchange.

### **THE GLOBAL ENGINEERING EXCHANGE PROGRAM (GE3)**

Case Western Reserve University participates in the Global Engineering Education Exchange (GE3), an international exchange program administered by the Institute for International Education. The GE3 program provides opportunities for engineering students at member institutions to receive academic credit for courses taken at overseas member institutions, and to have an internship experience in a foreign setting. Information about the GE3 program is available from the study abroad adviser in the Office of Undergraduate Studies.

**BILATERAL EXCHANGE PROGRAMS** Case Western Reserve University has bilateral exchange agreements enabling students from overseas institutions to attend CWRU as visiting students and permitting CWRU students to receive academic credit for study at the following institutions:

- University of Lancaster, UK (all majors)
- ESC de Montpellier, France (management, accounting)
- University of Frankfurt, Germany (management, accounting)
- National University of Singapore (engineering, computer science)

Information about bilateral exchange programs with other overseas universities is available from the study abroad adviser in the Office of Undergraduate Studies.

## **MINORITY ENGINEERS INDUSTRIAL OPPORTUNITY PROGRAM**

The CWRU minority engineering programs are part of a national effort to increase minority representation in the engineering profession. The undergraduate phase of MEIOP offers a variety of services to minority students who are pursuing engineering degrees at CWRU. MEIOP provides its participants with an academic support program that includes summer courses for incoming freshmen, study laboratories, workshops, counseling, and tutoring. Scholarships and summer employment opportunities are offered to students selected by the industrial sponsors of MEIOP. For information contact the Office of Multicultural Affairs, 116 Baker Bldg., Ext. 2904

### **THE MINORITY SCHOLARS PROGRAM (MSP)**

The Minority Scholars Program (MSP) has been designed to increase significantly the number of minority (Native American, African American, Hispanic, and Pacific Islander) students in CWRU's baccalaureate programs. The program includes intensified recruitment of qualified minority students; a pre-freshman summer session to facilitate students' adjustment to CWRU; academic and personal support during the students' undergraduate years; and guidance and encouragement toward graduate and professional education. Social and cultural activities to promote better understanding and appreciation of diversity at CWRU are also an important part of MSP. Only incoming freshmen are eligible for certain components of the program, but all minority students are encouraged to participate in MSP. For information contact the Office of Multicultural Affairs, 116 Baker Bldg., Ext. 2904

### **RESEARCH AND INDEPENDENT STUDY**

Many departments offer qualified majors the opportunity to enroll for credit for independent study and research. Registration in those courses requires departmental approval. Students are responsible for observing departmental limitations on the number of credit hours that can be earned through enrollment for independent study. A directory of undergraduate research opportunities is available in the Office of Undergraduate Studies, Baker 102.

### **STUDENT COMMUNITY SERVICE**

Students have the opportunity to arrange volunteer placements that meet critical community needs in the areas of education, hunger and homelessness, the environment, and public health. The Office of Student Community Service maintains a comprehensive database of community service opportunities, provides information about coursework with a community service component, and assists students who are interested in curricular, co-curricular, Work-Study, or national service projects. For more information, contact Mr. Glenn Odenbrett, Office of Student Community Service, Kelvin Smith Library, Room 105, Ext. 6960, E-mail: gxo2@po.cwru.edu.

### **TEACHER LICENSURE**

The undergraduate programs in art education and music education meet the requirements for teacher licensure , grades pre-K-12.

Ohio teacher licensure may be attained by those undergraduate students who complete the approved curriculum of the Case Western Reserve University/John Carroll University Joint Program in Teacher Licensure. Adolescence/Young Adult Teacher Licensure is available in Integrated Language Arts (English major), Integrated Social Studies (history major), Integrated Mathematics (mathematics major), Life Sciences (biology major), and Physical Sciences (chemistry *or* physics major). Multi-age licensure is available in French. The program requires 36 credit hours in professional education: 12 taken at Case Western Reserve University and 24 taken at John Carroll University. For program details, see the section on Education-Teacher Licensure Program (page 28) in this handbook.

## **UNDERGRADUATE SCHOLARS PROGRAM**

The Undergraduate Scholars Program permits a small number of highly motivated and responsible undergraduates to pursue individually designed programs of study leading to a Bachelor of Arts or a Bachelor of Science degree. Except for the 120 hours required for graduation, admission to the program as an Undergraduate Scholar exempts the student from the usual requirements of the colleges, and imposes instead a correspondingly greater personal obligation in defining and meeting intellectual and educational goals. Interested students should contact Dean Timothy Dodd (E-mail: tmd6@po.cwru.edu), Office of Undergraduate Studies, 102 Baker Building, Ext. 2928.

## **THE WASHINGTON SEMESTER**

Qualified students may earn a semester's credit through their satisfactory completion of work with source materials and at federal government institutions. This opportunity is available through either of two programs: American University's School of Social Science and Public Affairs or the Washington Center Program. Students make application through the Department of Political Science. Applications must have the approval of the Dean of Undergraduate Studies and the major adviser. For additional information contact Dr. Frances Lee, 219 Mather House, Ext. 5265.

**Please see the Bulletin for further information on specific requirements for the special programs described above.**

## ACADEMIC REGULATIONS AND PROCEDURES

*It is each undergraduate's responsibility to know and to follow the academic regulations and procedures of the University. Complete information is included in the General Bulletin. Below are excerpts from the General Bulletin plus pertinent supplementary information.*

### ACADEMIC HONESTY

All students are expected to adhere to the standards of academic honesty consistent with the University Statement on Ethics (see page 2). Any work submitted by a student must represent his or her own efforts. Any student engaging in cheating, plagiarism, or any other acts of academic dishonesty will be subject to disciplinary action.

### ACADEMIC INFRACTIONS

If a faculty member suspects that an undergraduate student has presented the work of another as his or her own, or is otherwise guilty of academic dishonesty, the faculty member shall so advise the student and the departmental chair and consult with the Dean of Undergraduate Studies about the basis for those suspicions and appropriate disciplinary action. If the faculty member and dean agree that the evidence is not adequate to support a complaint, the matter will be dropped and the student will be so notified. If they do not agree to drop the matter, the following procedures will be followed:

If the infraction is a first offense, the dean and the faculty member may agree to leave the disposition of the matter to the faculty member. The student and the Dean of Undergraduate Studies will be notified in writing and a confidential record of the event and action shall be put on file in the Office of Undergraduate Studies.

Alternatively, following consultation with the Dean of Undergraduate Studies, under any of the following circumstances the faculty member will transmit a report of the infraction to the Dean of Student Affairs or his/her designate for judicial action:

1. The student pleads not responsible to having committed an infraction, or pleads that the penalty is excessive.
2. It is the view of the faculty member and the Dean of Undergraduate Studies that the student's first offense is of a nature and seriousness to justify such a referral.
3. The records maintained by the Dean of Undergraduate Studies show the student to have been guilty of one or more previous academic infractions.
4. The faculty member, after consultation with the dean, prefers such a referral to the alternative of assuming responsibility for the disposition of the matter.

In the event of any of the circumstances listed above, the Assistant Vice President of Student Affairs will convene a University Judicial Board to hear the case as promptly as is feasible and fair. When hearing a case dealing with an academic infraction the University Judicial Board shall consist of a representative of the Office of Undergraduate Studies, a representative of the Office of Student Affairs, and one student and one faculty member qualified to serve as a result of their participation in the Judicial Board training program. Should the Board find there was insufficient evidence to support the charge, the faculty member will be so informed and asked to evaluate the student's performance for the assignment in question by his/her normal grading practices. If the Board upholds the complaint of the faculty member, the panel will transmit notification of its finding and action to both the faculty member and the Dean of Undergraduate Studies for implementation. The action taken by the Judicial Board may include recommendations for a grade made to the faculty member and the imposition of additional disciplinary sanctions, as outlined in the Student Service Guide. In addition, the University is required to report to the funding agency the identity and misconduct of anyone, including a student, found guilty of falsification, fabrication or plagiarism in the performance of research that is receiving support from federal sources.

## **ADVANCED PLACEMENT, INTERNATIONAL BACCALAUREATE EXAMINATIONS AND CREDIT**

Students may earn degree credit on the basis of advanced examinations taken while in secondary school; examinations eligible for credit and/or advanced placement include, but are not limited to: College Board Advanced Placement Examinations and International Baccalaureate Higher Level Examinations. Determination of the criteria for granting credit and/or placement is made by the appropriate department. In assigning credit or granting advanced placement for credentials from outside the United States, the University is guided by the placement recommendations and grade equivalencies approved by the National Council on the Evaluation of Foreign Educational Credentials.

## **APPLIED ART AND MUSIC COURSES**

**Art:** Students may take studio courses for credit at The Cleveland Institute of Art only with authorization from Professor Timothy Shuckerow, CWRU Director of Art Studios, 115 Wickenden Building.

**Music:** Permits may be obtained at the Music Department in Haydn Hall to enroll for credit in Applied Music. Charges for private lessons will be covered by the full tuition rate for music and music education majors only. All other students will pay an additional fee.

## **ATTENDANCE**

Students are expected to attend classes regularly. Each instructor is free to determine the extent to which absences affect the final grades of students but should make the policy regarding attendance known at the start of the course. Instructors should report excessive absences to the Office of Undergraduate Studies. Instructors who judge a student's absences from class to be excessive may drop the student from the course with a grade of F. Instructors taking such action must notify the student's dean in writing. Students unable to attend classes because of illness should notify their instructors and make the appropriate arrangements directly with the instructor. The University Health Service and the Office of Undergraduate Studies do not provide medical excuses for class absence. Information concerning the policy of the Health Service and the Office of Undergraduate Studies is available in both the Office of Undergraduate Studies and the University Health Service.

## **COURSE CHANGES (DROP/ADD)**

Changes in course schedules must be submitted to the Registrar's Office before the end of the second week of classes during the fall and spring semesters, and on or before the second day of classes during the summer session.

## **COURSE PLACEMENT**

No credit will be granted for completion of any course in foreign language or mathematics that repeats the course level completed in high school. Freshmen who have questions regarding their eligibility to receive credit for foreign language or mathematics courses should see Dean Randall A. Williams.

## **ENROLLMENT STATUS**

Classification as a full-time student requires enrollment for 12 or more semester hours. Eligibility for campus housing, many forms of financial aid, and for participation on intercollegiate, varsity sports teams requires full-time status. Students registering for fewer than 12 semester hours are classified as part-time and charged tuition on the basis of the number of semester hours being taken.

## **FINAL EXAMINATIONS**

Final examinations normally are required in all courses and must be given during the final examination period at the time assigned by the Registrar; they may not be given during the final week of classes or on Reading Days. Any exception must be approved by the Dean of Undergraduate Studies.

No student will be required to take more than two final examinations on a single day. A student who has three final examinations scheduled for a single day should go to the Office of Undergraduate Studies and obtain the assistance of the Dean in arranging to take one of those examinations on an alternative day during the final examination period. Similarly, a student with conflicting examinations should seek the assistance of the Dean of Undergraduate Studies in arranging to have the time of one examination changed.

A student must explain immediately and in writing to the Dean of Undergraduate Studies an absence from a final examination. If the explanation is acceptable, the Dean will authorize the assignment of the grade Incomplete and the administration of a make-up examination by the instructor. In the event of an unexcused absence from a final examination, the instructor should assign the student a final grade that assumes a grade of zero on the final examination and is consistent with the grading policy established for the course.

## **FOREIGN LANGUAGE**

Credit earned for the first semester (101) of a beginning foreign language will appear on the transcript but will not count towards the total hours required for the degree unless the second semester of the same language is completed as well.

## **OVERLOADS**

The normal full-time load is 14-18 semester hours. Continuing students may carry 19-21 hours if they have a cumulative average of 3.20 or better. To register for 22 or 23 hours a minimum average of 3.50 is required. Any schedule of more than 18 hours requires dean's approval. Graduating seniors will be approved for overloads if they need such a schedule in order to graduate at the end of the semester in question.

## **PETITIONS**

Students may request exceptions to collegiate regulations by petition to the Office of Undergraduate Studies. Please be reminded that ignorance of regulations that are published in the University General Bulletin, the Schedule of Courses, or this Handbook is not justification for an exception. Petition forms are available in Baker 102. Petitions are referred to the appropriate committee of the University Undergraduate Faculty.

## **PROFICIENCY EXAMINATIONS AND CREDIT**

Departments within each academic unit offering undergraduate programs may choose to offer students the opportunity to earn course credit in specific courses by proficiency examination. To qualify for proficiency examination credit for a course, the student's examination performance must demonstrate knowledge and skills at a level no lower than that of an average student who successfully completes the course. Upon notification from the academic department, the Office of Undergraduate Studies will direct the Office of the Registrar to post credit for the course on the transcript. The grade will be recorded as PR, and will not be included in a student's grade point average. *Note: Any student who receives proficiency credit for a course through a proficiency examination administered during a semester when the student is not registered for a full-time schedule (12 or more semester hours) at Case Western Reserve University is charged a fee equal to one-third of the present tuition charge for the course. No fee is charged if the student does not receive credit from the examination.*

## **RE-ENROLLMENT AFTER VOLUNTARY WITHDRAWAL**

Students who have voluntarily withdrawn from the University and have not taken courses elsewhere following their withdrawal may reenroll in any semester. Students who have taken courses elsewhere following withdrawal must provide official transcripts of their work with their request for re-enrollment. Upon re-enrollment following a voluntary withdrawal, students retain the hours earned and quality points for courses completed prior to withdrawal. In the first semester of re-enrollment, their academic status is the status in effect at the time of withdrawal, unless that status is changed by action of the Committee on Academic Standing.

## **REGISTRATION**

For continuing students, registration for the Fall Semester begins in April, and registration for the Spring Semester begins in November. Students registered before the billing cutoff dates (generally mid-July for fall registration, and early December for spring registration) will be billed by mail for tuition and fees. After the cutoff dates, students must be cleared through the Office of Student Accounts Receivable prior to registration. Complete registration instructions and regulations appear in the official Schedule of Classes, published by the University Registrar.

## **STANDARDS OF PROMOTION**

|                        |                    |
|------------------------|--------------------|
| To the sophomore class | 27 hours completed |
| To the junior class    | 60 hours completed |
| To the senior class    | 90 hours completed |

## **STUDENT ACCESS TO RECORDS**

The records of all students are in the Office of Undergraduate Studies, Baker 102. Students may review their files in that office by appointment. A student must sign a request and present his/her I.D. card at the time of the appointment.

## **WITHDRAWAL FROM A COURSE**

With dean's approval, a student may withdraw from a course with a grade of W through the end of the eleventh week of the semester. After that date a student is not permitted to withdraw from a course unless, in the judgment of the dean, there are extenuating circumstances justifying a grade of W. A freshman who is subject to the freshman grading practices (see "Good Standing" under Academic Standing, above) may withdraw from a course after the end of the 11<sup>th</sup> week, but no later than the last day of classes. Failure to attend class, or notification of only the instructor, does not constitute withdrawal from a course. Notice of withdrawal from a course must be signed by the student's dean and taken to the registrar on the appropriate form.

## **WITHDRAWAL FROM THE UNIVERSITY**

To withdraw from the University during a semester or session, a student must complete in the Office of Undergraduate Studies an official withdrawal form. If unable to complete the withdrawal in person, the student must send written notification to the Office of Undergraduate Studies. If the withdrawal is necessary for reasons of health, a statement from the student's physician to the University Health Service may be required as a condition of readmission. Grades of WD will be assigned in all courses in which a student is registered at the time of withdrawal, provided that a student follows the procedures stated above. Failure to attend classes, or notification of instructors only, does not constitute withdrawal from the University. A student who ceases to attend or otherwise participate in courses without officially withdrawing will be assigned the grade F for each course in which he or she is enrolled.

Students who do not plan to return for the following semester are asked to notify the Office of Undergraduate Studies (Baker 102) in person or in writing.

## GRADES

Grades at Case Western Reserve University are issued on the following scale with good standing based on the requirement of a 2.00 average for graduation. Academic averages are computed by dividing the number of quality points earned by the number of hours attempted, excluding transfer credit and courses graded P.

| <u>Grade</u>  | <u>Quality points per hour</u>   |
|---------------|--|
| A (Excellent) | 4  |
| B (Good)      | 3  |
| C (Fair)      | 2  |
| D (Passing)   | 1  |
| F (Failure)   | 0 (This grade will be given for academic failure as well as failure to attend class without formally withdrawing.) |
| I             | Incomplete   |
| W             | Withdrawal from a class  |
| WD            | Withdrawal from all classes during a given semester  |
| P             | Passing in a Pass/No Pass course   |
| NP            | Not passing in a Pass/No Pass course   |
| R             | For courses which extend over more than one semester   |
| AD            | Audit  |
| RPT           | Repeated in later semester for evaluative grade  |

**Grades in the Freshman Year:** For the first two semesters of full-time enrollment students who are beginning their college studies will earn credit and grades only for those courses completed with a grade of D or higher. Any courses for which a grade of F or W is assigned will not be included in the computation of the grade point average and will not be posted on the official transcript. (Grades of F or W will, however, appear on the student's grade report and advising transcript as FF or WW. ) This grading policy is not available to part-time or transfer students and does not apply to the summer session.

### GRADE OF INCOMPLETE

**Assignment of the Incomplete Grade:** The Incomplete grade (I) is assigned by and at the discretion of the instructor when: a) there are extenuating circumstances, explained to the instructor before the assignment of the grade, which clearly justify an extension of time beyond the requirements established for and met by other students in the class, and b) the student has been passing the course and only a small segment of the course, such as a term paper, remains to be completed. It is the student's responsibility to notify the instructor of the circumstances preventing completion of all assigned work. In the absence of notification or adequate justification the instructor has the authority to assign the student a final grade that assumes a failing grade for the missing work. An Incomplete grade should not be assigned when:

- a) a student has been absent for much of the semester and/or has done little of the work required for a course, or
- b) because a student is absent from a final examination, unless the dean has authorized the grade.

**Changing the Incomplete Grade:** The instructor shall submit to the Registrar a final evaluative grade to replace the Incomplete upon completion of the work outstanding by a date established for the student by the instructor. The amount of additional time allowed the student should serve to accommodate the student while being fair to other students in the course. It may be no more than a few days or weeks and, at the extreme, it should not extend past the eleventh week of the session following the one in which the Incomplete grade was received. In certain cases (such as students on probation) the dean may establish an earlier date for completion of courses with Incomplete grades. When a student fails to submit the work required for removing the Incomplete by the date established, the instructor shall transmit to the Registrar a final grade that assumes a failing performance for the missing work. In the absence of the assignment of a grade by the instructor the Registrar will convert the I to F when the deadline for making up Incomplete grades from a previous semester has passed.

## **AUDIT**

A student may audit a course with the dean's or adviser's approval and the consent of the instructor of the course. An auditor receives no credit for the course. Registration in a course cannot be changed from audit to credit or the reverse after the end of the drop/add period. However, a student may take for credit a course he or she audited in an earlier semester. At the beginning of the course, the student and instructor should reach agreement regarding the requirements to be met for a grade of AD. The grade of AD is entered on the student's transcript if approved by the instructor of the course. If the instructor does not approve the grade AD, the enrollment is not posted on the transcript.

## **PASS/NO PASS**

Courses elected on a Pass/No Pass basis and completed with a grade of D or higher will be entered with the grade P on a student's transcript. Courses taken Pass/No Pass and for which a grade of F is earned will be entered on the transcript with the letter grade NP. Courses completed with letter grade P under this option will be counted for credit toward the baccalaureate. Courses completed with the grade NP do not earn credit. Courses completed with grades P and NP are not included in computing the grade point average.

The Pass/No Pass Option is subject to the following regulations:

1. The Pass/No Pass Option is exercised during the last three days on which classes are scheduled.
2. It is available only during regular Fall and Spring semesters to full-time students who are in good standing.
3. It can be exercised for only one course during any semester.
4. It cannot be used for courses being taken for satisfaction of core or general education requirements.
5. It cannot be used for courses taken for the satisfaction of requirements of a major or minor concentration.
6. Courses offered only on a Pass/No Pass basis with the approval of the curriculum committee do not affect the student's use of the Pass/No Pass Option.
7. Instructors are not notified of a student's use of this option. They are required to submit evaluative grades for all students and these are converted to Pass/No Pass in the Registrar's Office. The meaning of the P and NP will be noted on the transcript.

## **COURSE REPETITION**

A student desiring the opportunity to repeat a course because of dissatisfaction with the quality of an earlier performance is eligible to do so, but must advise the Office of Undergraduate Studies of his/her intention by completing a Course Repetition Form. Upon completion of the repeated course at CWRU for an evaluative grade - A, B, C, D, or F - the grade received for the earlier enrollment will be replaced by the designation RPT and will no longer be computed in either the semester or cumulative grade point averages. The only grade posted and averaged for a course on the student's record will be that resulting from the most recently completed enrollment in that course. This option may be exercised subject to the following conditions:

1. The repetition must occur within one calendar year of the previous enrollment or, for courses that are not offered annually, in the next semester in which the course is offered.
2. A student may not use the Pass/No Pass option in a course that is being repeated.
3. An academic action that occurred under the earlier grade is neither reversed nor removed from the record as a result of a change in the semester or cumulative averages that results from the repetition of one or more courses.

**CAUTION:** *Students who are the recipients of any form of federal financial aid (grants, loans, work study, etc.) and use the RPT Option in order to repeat a course that was passed previously must enroll for a minimum of 12 credits for which credit had not been earned previously.*

## **GRADE REPORTS AND TRANSCRIPTS**

The Registrar provides to the student and the Office of Undergraduate Studies a copy of each student's grades for each semester. Students requiring copies of their transcripts must request those at the Transcript Office in Yost Hall. The University considers the grades earned by a student and other information about the student's performance at the University confidential and will release such information only upon written request by the student. Transcripts will not be issued to or on behalf of students who have not discharged all obligations to the University.

## ACADEMIC STANDING REGULATIONS

### GOOD STANDING

*The Freshman Year:* For the first two semesters of full-time enrollment students who are beginning their college studies will earn credit and grades only for those courses completed with a grade of D or higher. Any courses for which a grade of F or W is assigned will not be included in the computation of the grade point average and will not be posted on the transcript. This grading policy is not available to part-time or transfer students and does not apply to the summer session. In order to maintain good standing a freshman must earn at CWRU a minimum of 9 hours and an average of 1.70 or higher in the first semester and a total of 21 hours with a cumulative average of 1.75 or higher by the end of the second semester of full-time enrollment.

*Thereafter:* Following the freshman year grades of F will be posted on the transcript and will be used in the computation of the grade point average. Following the freshman year, the requirements for good standing are:

- 1) A semester grade point average of 1.75 or higher *and*
- 2) a cumulative grade point average as follows:
  - a) for students with 22-40 hours earned, a cumulative grade point average of 1.80
  - b) for students with 41-59 hours earned, a cumulative grade point average of 1.90
  - c) for students with 60-89 hours earned, a cumulative grade point average of 1.95
  - d) for students with 90 or more hours earned, a cumulative grade point average of 2.00

Students with incomplete grades may be placed on "probation (incomplete)" as described below.

Part-time and transfer students will be subject to the cumulative average requirements that are consistent with their hours earned.

### PROBATION

Students who, at the end of any semester, fail to maintain the standard of performance required for good standing as specified above will be placed on probation. Students placed on probation are ineligible to represent the University in intercollegiate activities and may not hold an elective or appointed office or committee chairmanship in any campus organization. There are two categories of probation:

1. *Academic Probation:* Students will be placed on academic probation for failure to achieve the standards of performance specified above. When placed on academic probation students will be required to meet a standard of improvement established for individual students by the colleges. They are normally eligible for a maximum of two consecutive semesters of probation for the purpose of restoring themselves to good standing. However, the second semester of probation will be granted only in those cases where during a first semester of probation progress has been made toward achieving good standing.
2. *Probation (incomplete):* A student will be placed on Probation (Incomplete) if he/she has incomplete grades which if converted to F's would result in the student's being placed on academic probation. Once the incompletes are converted to grades, the student shall be restored to good standing or placed on academic probation as determined by the semester and/or cumulative grade point average that results.

## **ACADEMIC STANDING REGULATIONS (continued)**

### **SEPARATION**

Students on academic probation who fail to meet the standard of improvement established by the colleges will be eligible to be separated from the colleges for at least two academic sessions, including the summer session.

*A student is eligible for separation without a semester of probation for either of the following reasons:*

1. the student's semester grade point average is less than 1.00
2. the student has not earned more than a total of 18 credit hours in two consecutive semesters of enrollment for full-time study.

### **INELIGIBLE TO REGISTER**

Students on probation will be declared "ineligible to register" when they have Incomplete grades which if averaged as F make them eligible for separation. Such students will be required to finish the incomplete courses with grades that justify their retention before they will be allowed to continue in the colleges.

### **RESTORATION TO GOOD STANDING**

Students will be restored to Good Standing at the end of their semester of academic probation if they have earned at least 12 hours of credit with a semester grade point average of 1.75 or higher and have attained the cumulative grade point average required for good standing (see above).

### **READMISSION**

Students separated for reasons of scholarship may petition for readmission after two regular sessions have elapsed. In determining the period of separation, summer session is considered a regular session. Students readmitted after being separated for reasons of academic performance will retain earned credit only for those courses passed with a grade of C or better. Readmitted students do not retain quality points earned before separation, and the cumulative grade point average subsequent to readmission will be computed solely on the basis of work completed following readmission. Students readmitted after being separated must thereafter maintain good academic standing. A readmitted student who performs below the level required for good standing will be eligible for permanent separation from the University. Students separated for reasons of academic performance may not offer for transfer credit work taken elsewhere during the two sessions after their dismissal unless such work has been specifically approved in advance by the academic dean.

## CRITERIA FOR SCHOLARSHIP RETENTION

### FULL-TUITION, TRUSTEES', PRESIDENT'S AND PROVOST'S SCHOLARSHIPS

At the end of each academic year, the records of all students holding full-tuition scholarships, Trustees' Scholarships, President's Scholarships, or Provost's Scholarships will be reviewed by the deans in the Office of Undergraduate Studies and by the Committee on Academic Standing of the University Undergraduate Faculty. To have a scholarship renewed for the following academic year, a recipient is expected to satisfy two requirements: a minimum number of hours earned after enrolling at CWRU, and a minimum cumulative grade point average.

The minimum standards for continuation are as follows:

- a) Cumulative hours earned *after* matriculation at CWRU (*not including AP/IB/transfer or Pre-College Scholar credit earned prior to enrollment at CWRU*)

|                               |                    |
|-------------------------------|--------------------|
| at the end of the first year  | 24 semester hours  |
| at the end of the second year | 54 semester hours* |
| at the end of the third year  | 84 semester hours* |

\*for students participating in the co-op program, an appropriate adjustment is made in the number of hours expected

- b) A cumulative **scholarship grade point average** of 3.00.

**Note:** *No courses are eliminated from a student's record for the purpose of calculating the "scholarship g.p.a." The "scholarship g.p.a." is the student's cumulative g.p.a., unless the student has used the Repeat Option or has earned any F grades in the freshman year that do not appear on the official transcript. If a scholarship recipient has used the Repeat Option for any courses or has earned any F grades that do not appear on the official transcript, the original grades in courses for which the final grade has been replaced by RPT or in which the earned grade was F will be included in the computation of the cumulative average for the purpose of determining eligibility for scholarship continuation.*

If a scholarship recipient's achievement falls below the standard described above, the scholarship will be terminated.

Unless the scholarship recipient is participating in an approved off-campus program (Cooperative Education, Junior Year Abroad, or Washington Semester), the scholarship is automatically terminated when a recipient fails to enroll at Case Western Reserve University in a semester for which he/she has been awarded the scholarship.

In exceptional circumstances, the Committee on Academic Standing will continue a scholarship for a student whose achievement or whose attendance does not meet the standards outlined above. It is the student's responsibility to write to the Committee on Academic Standing, c/o the Office of Undergraduate Studies, *before June 1*, to inform the committee of any special circumstances which may have affected performance and/or attendance during the preceding academic year, and to request special consideration for continuation of a scholarship.

### PROVOST'S SPECIAL SCHOLARSHIPS

Recipients of Provost's Special Scholarships must maintain academic good standing to be eligible for continuation of their scholarships.

**NOTE: Once a scholarship has been terminated, it cannot be reinstated.**

## ACADEMIC HONORS

### DEAN'S HONOR LISTS

The Dean's Honor Lists consist of the names of those undergraduate students who have distinguished themselves by achieving during the previous semester the grade point averages required with a minimum of 12 hours earned and who have no Fs, NPs, or Incompletes during the same period. Students with a grade point average of 3.75 or higher will be placed on the Dean's High Honors List. Students with a grade point average of at least 3.50 but less than 3.75 will be placed on the Dean's Honors List.

### COMMENCEMENT HONORS

*(to take effect with the class graduating in 2002)*

Commencement Honors are awarded to the top 35 per cent of the graduating class.

|                  |                        |
|------------------|------------------------|
| Top 10 per cent  | <i>summa cum laude</i> |
| Next 10 per cent | <i>magna cum laude</i> |
| Next 15 per cent | <i>cum laude</i>       |

To be eligible for commencement honors, candidates must have:

1. Earned a minimum of 54 hours for evaluative grades (A,B,C,D) in residence at the University.
2. Attained the required percentile ranking on the basis of all work for which grades are averaged at the University.

### DEPARTMENTAL HONORS

A number of departments offer outstanding students the opportunity to complete the major concentration with departmental honors. See the departmental representative for information regarding a department's requirements for graduation with honors.

### PHI BETA KAPPA

Phi Beta Kappa, a national honor society, recognizes outstanding scholarship in the liberal arts and sciences. The Alpha Chapter of Ohio was established at Western Reserve College in 1847. Students may qualify for election to membership in the second semester of the senior year. A few outstanding students may be elected to membership as juniors.

### TAU BETA PI

Tau Beta Pi is a national honor society which recognizes full-time engineering students for outstanding scholarship, leadership, and service.

### MORTAR BOARD

Mortar Board is a national honor society which recognizes full-time senior students for outstanding scholarship, leadership, and service.

### DEPARTMENTAL AND COLLEGIATE AWARDS

At Honors Assemblies at the end of each spring semester, the University presents awards recognizing the outstanding achievement of individual students. The departmental awards are based on achievement in specific academic disciplines. Some of the departmental and collegiate awards are based on a combination of leadership, scholarship, and service. The collegiate awards for students with the best academic records take into account credit load, grades, and the proportion of courses taken for evaluative grades (i.e., not taken P/NP).

### FELLOWSHIPS AND SCHOLARSHIPS

Outstanding students may obtain information about national competitive scholarships (Goldwater, Truman, Rhodes, etc.) in the Office of Undergraduate Studies, Baker 102.

## STUDY AT OTHER COLLEGES

**After matriculation in Case Western Reserve University, students are permitted to earn no more than a total of fifteen semester hours at other accredited colleges or universities either by cross registration or transient registration.** Permission of a dean in the Office of Undergraduate Studies must be obtained in advance if the student wishes to enroll elsewhere. Further, if a student wishes to take elsewhere a course that will serve toward satisfaction of major or minor requirements it must also be approved by the departmental chair or representative. Credit earned elsewhere after matriculation in the colleges is not applied toward the residence requirement of a minimum of 60 hours earned in the colleges. Forms requesting permission for study at other institutions are available in Undergraduate Studies.

### CROSS REGISTRATION

Full-time undergraduate students at Case Western Reserve University may register without payment of tuition at Baldwin-Wallace College, The Cleveland Institute of Art, The Cleveland Institute of Music, Cleveland State University, Cuyahoga Community College, David Myers College, Hiram College, John Carroll University, Lake Erie College, Lorain County Community College, Notre Dame College of Ohio, Oberlin College, or Ursuline College for one course per semester if that course is not offered at Case Western Reserve University (see above for credit limitation). The opportunity for Cross Registration is available only during the Fall and Spring semesters. Cross Registration Forms are available in the Office of Undergraduate Studies, Baker 102 and must be completed and approved no later than the final day of CWRU's drop/add period

### SUMMER SCHOOL

Students are permitted to earn no more than a total of 15 semester hours in other accredited colleges or universities after matriculation in Case Western Reserve University. Students will not normally be permitted to take elsewhere in Cuyahoga County courses offered at Case Western Reserve University. Exceptions to this policy will be permitted only in the event of significant extenuating considerations. Students who desire the opportunity to take elsewhere in Cuyahoga County a course being offered at CWRU must petition the Office of Undergraduate Studies in advance for permission to do so.

1. Transient work may be taken at another institution only with permission obtained in advance from the Office of Undergraduate Studies. *Course descriptions must be provided with the request for permission.*
2. Institutions must be accredited.
3. Students must be in good standing. If you are placed on probation between receiving permission and the start of the term in which you plan to enroll, you are to assume that you are no longer eligible to enroll for and receive transfer credit for this work. Students on probation require special approval and should contact the Office of Undergraduate Studies.
4. Students may register for no more than 12 semester hours of credit. One quarter hour equals two-thirds of one semester hour.
5. Students may transfer credit only for courses taken in programs at which a semester's work is done in not less than four weeks.
6. Grades earned elsewhere for transferable work will not be recorded on your transcript or included in your average for work taken at Case Western Reserve University.
7. Credit earned elsewhere after matriculation is not applied toward the minimum of 60 hours required in residence at Case Western Reserve University.
8. Courses which do not have comparable or equivalent counterparts offered for credit at Case Western Reserve University require approval of the Dean.

## **SUMMER SCHOOL (continued)**

9. Acceptability of courses required for satisfaction of major or minor requirements must be determined by the faculty adviser from the department in question.
10. Students who have not declared a major should consult their freshman adviser or dean about the choice of courses applicable to the degree.

## **TRANSFER CREDIT**

Students may receive credit by transfer from another accredited college, university, or technological institute in the United States or from institutions of higher education outside the United States under the following conditions:

1. At the time of admission to CWRU upon presentation of an official transcript from each institution previously attended. Credit will be awarded for courses equivalent or comparable to those offered by the University and completed with a grade of C or better. Any such courses taken prior to the student's graduation from high school must be listed in the college's catalog among courses offered for degree credit to the college's undergraduates, taken in the company of matriculated college students, and organized and taught by college faculty. In addition, to be considered for transfer credit, such courses must not have been used to fulfill high school graduation requirements. The allocation of transfer credit is determined by the Office of Undergraduate Studies in consultation with the appropriate department.
2. After enrollment in the University, only when approval has been secured in advance from the Office of Undergraduate Studies. After matriculation in the University, undergraduates are not permitted to earn more than 15 semester hours as transient students at other accredited institutions. Credit earned elsewhere after matriculation is not applied toward the 60 hour minimum required in residence.

Credit is not awarded for work done at an unaccredited institution in the United States except by proficiency examination in those departments of Case Western Reserve University offering that opportunity. The award of transfer credit for work done at institutions outside the United States is subject to departmental evaluation and to the recommendations of the National Council on the Evaluation of Foreign Credentials.

A student dismissed for poor scholarship from any institution cannot receive credit for courses taken in the first two sessions after that dismissal without prior permission of the Dean of Undergraduate Studies.

Grades for courses taken at other institutions will not be entered on the student's record nor will they be computed in the student's grade point average.

## **RESERVE OFFICER TRAINING CORPS (ROTC)**

Reserve Office Training Corps (ROTC) programs are available through cooperative arrangements with the University of Akron, for Air Force ROTC, and with John Carroll University, for most Army ROTC. Participating CWRU students do not receive academic credit at CWRU for ROTC courses, but may be exempted from the undergraduate physical education requirement. ROTC scholarships are available on a competitive basis. Information about courses, registration, and scholarships may be obtained from:

Department of Aerospace Studies  
The University of Akron  
Akron, OH 44325-0009  
Telephone: (330) 972-7653

Department of Military Science  
John Carroll University  
University Heights, OH 44118-4581  
Telephone: (216) 397-4421

# ACADEMIC CALENDAR 2000-2001

## FALL SEMESTER, 2000

|                  |   |
|------------------|---|
| August 28        | Classes begin<br>Drop/Add<br>Late Registration begins   |
| August 29        | Late Fee (\$25) begins  |
| September 1      | Last Day to Withdraw Without Financial Penalty  |
| September 4      | Labor Day Holiday   |
| September 8      | Drop/Add ends<br>Late Registration ends<br>Deadline Credit/Audit (UNDG)<br>Deadline for cross registration approval |
| October 23       | Mid-Term Grades due (UNDG)  |
| October 23-24    | Fall Break  |
| November 10      | "I" Grades due<br>Last day to withdraw from a course with a grade of W  |
| November 13      | Open registration for Spring begins<br>Drop/Add begins  |
| November 23-24   | Thanksgiving Holidays   |
| December 6, 7, 8 | Pass/NoPass—Submit form in Baker 102  |
| December 8       | Last Day of Classes<br>Deadline for removal of previous term "I" grades (UNDG)                                      |
| December 11-12   | Reading Days  |
| December 13      | Final Exams begin   |
| December 20      | Final Exams end   |
| December 22      | Final Grades Due by 11:00 a.m.  |
| January 19, 2001 | Awarding of January Degrees   |

## **SPRING SEMESTER, 2000**

|                  |  |
|------------------|--|
| January 15       | Martin Luther King Jr. Holiday   |
| January 16       | Classes begin<br>Drop/Add begins<br>Late Registration begins   |
| January 17       | Late Fee (\$25) begins   |
| January 19       | Last Day to Withdraw Without Financial Penalty   |
| January 26       | Drop/Add ends<br>Late Registration ends<br>Deadline Credit/Audit (UNDG)<br>Deadline for cross registration approval                      |
| March 12         | Mid-Term Grades due (UNDG)   |
| March 12-16      | Spring Break   |
| March 30         | “I” Grades due (UNDG)<br>Last day to withdraw from a course with a grade of W<br>Deadline for removal of previous term "I" grades (UNDG) |
| April 9          | Open registration for Fall begins  |
| April 16         | Open registration for Summer begins  |
| April 28, 29, 30 | Pass/NoPass—Submit form in Baker 102   |
| April 30         | Last Day of Classes  |
| May 1-2          | Reading Days   |
| May 3            | Final Exams begin  |
| May 10           | Final Exams end  |
| May 12           | Final Grades due by 11:00 a.m.   |
| May 20           | University Commencement  |

## **SUMMER SEMESTER, 2001**

|           |                             |
|-----------|-----------------------------|
| June 4    | Classes Begin               |
| July 4    | Independence Day Holiday    |
| July 30   | Classes End                 |
| August 1  | Final Grades Due 12:00 noon |
| August 17 | Awarding of August Degrees  |