

#### IV. Additional Requirements

1. The requirements for the Bachelor of Arts degree with a major in engineering mathematics under the 3-2 program differ from those for the four-year mathematics majors. Students in the 3-2 engineering major are not required to fulfill the requirements for the four-year mathematics major.
2. The requirements listed in sections I, II, and III above must be completed before transferring to an affiliated engineering school and cannot be satisfied by credits earned at the engineering school after the student has transferred.
3. Students transferring to Carroll College and entering the 3-2 program must complete at least two full-time semesters at Carroll College before they will be considered for a recommendation to transfer to an affiliated school. In addition, these students must complete a minimum of eighteen credits in the Department of Mathematics, Engineering and Computer Science at Carroll College. Credits transferred to Carroll do not satisfy this requirement.
4. A Student who transfers to a non-affiliated engineering school and completes an engineering degree in an ABET accredited program is eligible to receive the Bachelor of Arts degree with a major in engineering mathematics from Carroll College. The Carroll degree is awarded provided that the student has completed all requirements for the degree listed in sections I, II, III, and IV.
5. Some engineering schools and/or departments require a grade point average higher than 2.60 for admission to junior and senior level courses. Some departments may also require the completion of a summer field or laboratory course for graduation in that department. In rare cases, additional course work may be required to satisfy a specialized engineering curriculum. These are requirements that apply to all students entering these programs and must also be satisfied by 3-2 students. Students in 3-2 engineering must consult with the director of engineering programs at Carroll College to select a school and field of study for which they qualify.

#### ENGINEERING MECHANICS

GARY FISCHER, M.S.  
MARY E. KEEFFE, PH.D.  
TERENCE J. MULLEN, P.E.  
JOHN L. SCHARF, PH.D.  
ANTHONY M. SZPILKA, PH.D.  
WILLIS WEIGHT, PH.D.

#### Department Mission and Goals

Consonant with the mission of the College, this department is “dedicated to providing for its students the means for their full realization of a dual goal of vocation and enlightenment.” Society requires competent professionals who can solve contemporary problems by using connections among disciplines, especially the humanities, engineering and technology, and the sciences. The Programs within this Department are designed to blend the unique characteristics of Catholic liberal arts education with preparation for productive and rewarding professional careers. The four professional educational objectives of this department are to produce graduates who have:

- 1) The specialized knowledge and skills necessary for initiation into their chosen profession,
- 2) A broad range of skills necessary for effective communication,
- 3) An appreciation for the interrelationships among the branches of knowledge,
- 4) The ethical, social, and aesthetic perspectives necessary for values-based judgment and decision-making.

The major in Engineering Mechanics is a broad-based, general engineering major designed to prepare graduates who can go directly into graduate programs in engineering mechanics, structural engineering, mechanical engineering, aerospace engineering, environmental engineering, applied mathematics, or applied physics. In addition, this major is designed to meet accreditation criteria specified by the Accreditation Board for Engineering and Technology (ABET). As a result, Carroll graduates with a major in Engineering Mechanics will be eligible to take the two Professional Engineering licensure exams and thereby earn a Professional Engineer license. The civil engineering program is accredited by the Engineering Accreditation Commission of the Accreditation Board of Engineering & Technology, 111 Market Place, Suite 1050, Baltimore, MD 21202-4012. Telephone: 410-347-7700.

The Engineering Mechanics Program has adopted the philosophy and goals of the department. The four major areas of study with the Program are: structures, environmental, water resources, and transportation.

#### I. Major Program Requirements

ENGR 105 & ENGR 106 GIS/Surveying/CAD I and II \*  
ENGR 202 Water Distribution Systems  
ENGR 302 Engineering Mechanics I: Statics  
ENGR 303 Engineering Mechanics II: Solids  
ENGR 304 Dynamics  
ENGR 305 Electrical Circuits and Electronics I  
ENGR 306 Electrical Circuits and Electronics II  
ENGR 307 Fluid Mechanics  
ENGR 308 Thermodynamics  
ENGR 310 Structures I  
ENGR 313 Hydrology  
ENGR 401 Hydraulics  
ENGR 411-412 Senior Design Project  
ENGR/MA 4XX Numerical Computing II\*

#### II. Other Program Requirements

CS 110 Java Programming  
CS/MA 106 Programming in Excel\*  
EC 201 or 202 Principles of Economics (EC 202 preferred)  
EC 203 Project Management Economics  
ENWR 305 Technical Writing  
MA 131 Calculus of Single Variable Functions  
or MA 121-122 Differential and Integral Calculus  
MA 232 Differential Equations and Linear Algebra I  
MA 233 Multivariable Calculus  
MA 334 Differential Equations and Linear Algebra II  
MA 336 Probability and Statistics I  
MA 341 Probability and Statistics II  
MA 342 Numerical Computing  
MA 341 Numerical Computing  
MA 421 Optimization  
PHIL 207 Business Ethics  
PHYS 205-206 Engineering Physics

Students must take the Fundamental of Engineering (FE) exam within nine months prior to receiving the degree.

To earn a Bachelor of Arts degree with a major in engineering mechanics, a student must earn a grade of “C” or better in all of the courses listed under “Major Program Requirements” and under “Other Program Requirements.” A lesser grade in any of these courses must be replaced before the Bachelor of Arts degree with a major in engineering mechanics will be granted. In addition, lesser

grades in any of these courses preclude taking subsequent courses for which the deficient courses are a prerequisite.

\*Pending Approval.

## ENGLISH

DEBRA BERNARDI, PH.D.  
CHERYL CONOVER, PH.D.  
JOHN MURPHY FOX, M.A.  
LOREN GRAHAM, M.F.A.  
MICHELLE LEWIS, M.A. (TESOL)  
JEFFREY B. MORRIS, PH.D.  
KAY A. SATRE, PH.D.  
RON STOTTLEMYER, PH.D.

### Mission and Goals

The English program is designed to provide students with the special knowledge, skills, and pedagogy needed to enter graduate or professional schools or to gain employment in their field. Consequently, students completing this major program are expected to have

- an understanding of the basic knowledge, concepts, and critical theories of the major field;
- the critical thinking skills needed for generating and analyzing both literary and expository texts;
- an ability to read, speak, and write in a second language;
- the writing and speaking skills needed to communicate effectively in the field;
- an understanding of cross-cultural issues.

The major programs of study offer sound preparation for graduate study in literature, languages, or writing. In addition, it is possible for a student to design a program to prepare for studying law or for entering a career in journalism, public relations, public information, or communications. An option is available in the senior year to intern in the local community for practical experience under EN/FR/GK/GM/LA/SP 451 Career Internship.

### Major in English Literature

#### I. Major Program Requirements

ENLE 200 Literary Studies  
ENWR 264 Introduction to Creative Writing  
ENWR 498 Capstone Seminar

#### A. English Language Requirements

ENLE 333 Introduction to the English Language  
ENLE 404 Literary Criticism

#### B. Foreign Language Requirement

A modern or classical second language through the intermediate level.

#### C. Literature Requirements

1. One course each in four of these literary periods:
  - Medieval
  - Renaissance
  - 18th Century
  - 19th Century
  - 20th Century
2. Five English or Literature course electives:
  - Any additional ENLT, ENWR or ENLE courses or SP 301, 302, FR 301, 302 404, or GM 405
  - Among the period courses and electives there must be:
    - Two British Literature Courses
    - Two American Literature Courses

Two World Literature Courses (Either ENLT 334, an appropriate special topics course, or SP 301, 302, FR 301, 302 404, or GM 405)

3. One course in a single marginalized group:
  - ENLT 410, 411, 412, or an appropriate special topics course

#### D. Language and Criticism Requirement

One additional course in English Language or Criticism:  
Any ENLE beyond those listed above under "English Language Requirements."

Minimum 48 credits, 16 courses, plus foreign language

The department strongly encourages majors to take one literature course in a language other than English.

### Major in English Literature for Secondary Education

#### I. Major Program Requirements

ENLE 200 Literary Studies  
ENWR264 Introduction to Creative Writing  
ENWR 498 Capstone Seminar

#### A. English Language Requirements

ENLE 333 Introduction to the English Language  
ENLE 321 Young Adult Literature  
ENLE 411 Teaching English on the Secondary Level

#### B. Foreign Language Requirements

One year of foreign language study.

#### C. Literature Requirements

1. One course each in four of these literary periods:

Medieval  
Renaissance  
18th Century  
19th Century  
20th Century

2. Two English or Literature course electives:

Any additional ENLT, ENWR or ENLE courses or SP 301, 302, FR 301, 302 404, or GM 405

Among the period courses and electives there must be:

Two British Literature Courses  
Two American Literature Courses  
Two World Literature Courses (Either ENLT 334, an appropriate special topics course, or SP 301, 302, FR 301, 302 404, or GM 405)

3. One course in a single marginalized group:

ENLT 410, 411, 412, or an appropriate special topics course

#### D. Language and Criticism Requirement

One additional course in English Language or Criticism:  
Any ENLE beyond those listed above under "English Language Requirements."

Minimum 42 credits, 14 courses, plus foreign language and professional education requirements (see section G, below).

The department strongly encourages majors to take one of their literature courses in a language other than English.

- E. Minor: In order to be licensed to teach in a secondary school in Montana, a student is required to have a teaching minor in a subject field acceptable for licensure endorsement as well as the teaching major. Consult the Education Department's requirements for further details.

#### F. Acceptance into the Teacher Education Program

Teacher Education Program: Students pursuing academic programs that lead to teacher licensure must seek admission to the teacher education program by the end of their sophomore year.