Department of Biology
Science/Nursing Bldg., Rm. 223
Telephone (208) 385-3262
Chair and Associate Professor: James A. Long; Professors: Baker, Bechard, Centanni, Douglas, Fuller, McCloskey, Rychert, Wicklow-Howard; Associate Professors: Dufty, Munger; Assistant Professors: Beltoff, Novak, Ott, Smith.

Degrees Offered
• B.S. in Biology
• B.S. in Biology, Secondary Education
• Biology Minor
• M.S. in Raptor Biology (see Graduate College Catalog for program details.)
• Pre-Forestry and Wildlife Management
• Minor in Environmental Studies (see page .)

Degree Requirements

BIOLoGY MAJOR
Bachelor of Science
1. General University & Baccalaureate Degree Requirements Credits...30
2. Major Requirements Biology .45
   Biology Core 20
   General Botany BT 130 .4
   General Zoology Z 230 5
   Cell Biology B 301 3
   Genetics B 343 3
   Ecology B 423 4
   Biology Seminar B 498 or 499 1
   Physiology - one course .4
   Plant Physiology BT 401 .4
   Human Physiology Z 401 .4
   General & Comparative Physiology Z 409 4
   Morphology - one course .4
   Plant Anatomy BT 302 4
   Plant Morphology BT 311 4
   Comparative Vertebrate Anatomy Z 301 4
   Vertebrate Embryology Z 351 4
   Vertebrate Histology Z 400 4
   Mycology BT 330 4
   Biology Electives to total 45 credits 17
   *Biology Electives to total 45 credits

3. Chemistry 14
   College Chemistry C 131-134 9
   Organic Chemistry C 317, 319 5

4. Mathematics 9
   Algebra & Trigonometry M 111 5
   Four or more credits chosen from the following:
   Applied Statistics with the Computer M 120 4
   Introduction to Pascal CS 113 2
   Introduction to C CS 115 2
   Digital Computer Program CS 124 or EN 104 2
   Introduction to Computer Science CS 125 3
   Calculus and Analytic Geometry M 204 5

5. Other Electives 30
   Area I & II electives
   Biochemistry C 431
   Geology Electives
   Physics 101, 102

   NOTE: Completion of all requirements for graduation with a secondary education option may require more than 128 credit hours. See Department of Teacher Education listing for more information.

BIOLoGY MINOR
General Botany BT 130 4
One of the following: 5-9
   Human Anatomy & Physiology Z 111, 112
   General Zoology Z 230
   Cell Biology B 301 3
   Genetics B 343 3
   Ecology B 423 4
   Biology Seminar B 498 or 499 1
   Physiology—one course .4
   Plant Physiology BT 401 4
   Human Physiology Z 401 4
   Gen & Comp Physiology Z 409 4
   Morphology—one course .4
   Plant Anatomy BT 302 4
   Plant Morphology BT 311 4
   Comparative Vertebrate Anatomy Z 301 4
   Vertebrate Embryology Z 351 4
   Vertebrate Histology Z 400 4

   *Biology Electives to total 45 credits

Secondary Education Option—Major Endorsement
1. General University & Baccalaureate Degree Requirements Credits...30
2. Major Requirements Credits
   Biology Core 45
   General Botany BT 130 4
   General Zoology Z 230 5
   Cell Biology B 301 3
   Genetics B 343 3
   Ecology B 423 4
   Biology Seminar B 498 or 499 1
   Physiology—one course .4
   Plant Physiology BT 401 4
   Human Physiology Z 401 4
   Gen & Comp Physiology Z 409 4
   Morphology—one course .4
   Plant Anatomy BT 302 4
   Plant Morphology BT 311 4
   Comparative Vertebrate Anatomy Z 301 4
   Vertebrate Embryology Z 351 4
   Vertebrate Histology Z 400 4

   *Biology Electives to total 45 credits

3. Education Requirements Credits 29-35
   The following are required for Secondary Teaching Certification in Idaho:
   Intro Secondary Teach: Classroom Observation TE 172 1
   Foundations of Education TE 201 3
   Educational Technology TE 356 2
   Reading in Content Subjects TE 407 3
   Educating Exceptional Secondary-Age Student TE 333 1
   Educational Psychology TE 225 3
   Secondary School Methods TE 381 3
   Secondary School Science Methods TE 384 3
   Secondary School Student Teaching 10-16

4. Elective Credits 0-1

5. Other Electives 22
### Secondary Education Option—Major Endorsement in Biology with a
Minor Endorsement in a Second Field

1. **General University & Baccalaureate Degree Requirements Credits** 30
2. **Major Requirements Credits**
   - **Biology** 30
   - **Biology Core** 20
     - General Botany BT 130 4
     - General Zoology Z 230 5
     - Cell Biology B 301 3
     - Genetics B 343 3
     - Ecology B 423 4
     - Biology Seminar B 498 or 499 1
   - **Biology Electives** 10
     - Upper division Botany 4
     - Upper division Zoology 3-4
     - Additional B, BT, or Z elective 2-3
3. **Chemistry** 14
   - College Chemistry C 131-134 9
   - Organic Chemistry C 317, 319 5
4. **Mathematics** 9
   - Algebra & Trigonometry M 111 5
   - Four or more credits chosen from the following:
     - Applied Statistics with the Computer M 120 4
     - Introduction to Pascal CS 113 2
     - Introduction to C CS 115 2
     - Digital Computer Program CS 124 or EN 104 2
     - Introduction to Computer Science CS 125 2
     - Calculus and Analytic Geometry M 204 5
5. **Education Requirements Credits** 29-35
   - The following are required for Secondary Teaching Certification in Idaho:
     - Intro Secondary Teach: Classroom Observation TE 172 1
     - Educational Technology TE 201 3
     - Reading in Content Subjects TE 407 3
     - Educating Exceptional Secondary-Age Student TE 333 1
     - Educational Psychology TE 225 3
     - Secondary School Methods TE 381 3
     - Secondary School Science Methods TE 384 3
     - Secondary School Student Teaching 10-16
6. **Minor Endorsement in a Second Field** 20-32
7. **Elective credits** 0-9

**NOTE:** Completion of all requirements for graduation with a secondary education option may require more than 128 credit hours. See Department of Teacher Education listing for more information.

### Recommended Program

#### BIOLOGY MAJOR
Bachelor of Science Degree

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<td>Other electives</td>
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#### BIOLOGY MAJOR
SECONDARY EDUCATION OPTION
Bachelor of Science

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<td>College Chemistry C 131-134</td>
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<td>Algebra and Trigonometry M 111</td>
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<td>Secondary School Science Methods TE 384</td>
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### Course Offerings

**See page 4 for definition of course numbering system**

#### B BIOLOGY

**Lower Division**

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<th>Course</th>
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<td>B 200 MAN AND THE ENVIRONMENT (3-0-3)(F/S)</td>
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<td>B 205 MICROBIOLOGY (3-2-4)(F/S)</td>
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<td>Education Technology TE 356</td>
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#### SENIOR YEAR

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<td>Ecology B 423</td>
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<td>Area I electives</td>
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<tr>
<td>Educating Exceptional Secondary Age Students</td>
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<tr>
<td>Reading Content Subjects TE 407</td>
<td>10-16</td>
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<td>Secondary School Student Teaching</td>
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<td>Other electives</td>
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**PRE-FORESTRY AND WILDLIFE MANAGEMENT**

This program is designed to satisfy the lower division course work typically completed during sophomore year in a School of Forestry. Students wishing to earn a bachelor's degree in this area of study usually transfer to the University of Idaho College of Forestry, Wildlife and Range Sciences for their junior and senior years.

#### FRESHMAN YEAR

<table>
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<tr>
<th>Course</th>
<th>1st SEM</th>
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<td>English Composition E 101-102</td>
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<td>General Botany BT 130</td>
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<td>Fundamentals of Speech CM 111</td>
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<td>Essentials of Chemistry C 107-110</td>
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<td>Mathematics M 105-106</td>
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<td>Area I or II elective</td>
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**Total**

| 16 | 16 |

#### SOPHOMORE YEAR

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<tr>
<td>General Physics PH 101-102</td>
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<tr>
<td>General Zoology Z 230</td>
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<tr>
<td>Systematic Botany BT 305</td>
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<td>Physical Geology G 101</td>
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<td>Economics EC 205-206</td>
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<td>Computer Science (Pascal) CS 113</td>
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<td>Area I elective</td>
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**Other courses offered by the Biology Department that are applicable to various programs within the College of Forestry, Wildlife and Range Sciences at the University of Idaho include:** Microbiology B 205; Ecology B 423; Plant Physiology B 401; Comparative Anatomy C 361; Ornithology Z 341; Mammalogy Z 461.

In many cases, if the student has decided upon the specific option in which they wish to receive a degree, it is possible to attend Boise State for 3 years and complete the program of study at U of I in 2 additional years.

**Upper Division**

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<tr>
<th>Course</th>
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<tr>
<td>General Botany BT 305</td>
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<tr>
<td>Animal Diversity</td>
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<tr>
<td>Environmental interrelationships of organisms</td>
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<td></td>
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<tr>
<td>Host-parasite relationships</td>
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<tr>
<td>Pathogens</td>
<td></td>
<td></td>
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<tr>
<td>Microbial and biochemical methods of environmental assessment</td>
<td></td>
<td></td>
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<tr>
<td>MIcrobiology</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Immunity</td>
<td></td>
<td></td>
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<tr>
<td>Medical aspects</td>
<td></td>
<td></td>
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<tr>
<td>Immunology</td>
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<tr>
<td>and medically important microorganisms</td>
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<tr>
<td>PREREQ: C 107 and Z 111-112 (or equivalent)</td>
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<td>PERM/INST.</td>
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**B 300 BIOLOGY OF AGING (3-0-3)(F)**

Focuses on biological aspects of aging and the major types of anatomical and physiological changes which may impale normal functioning during the aging processes. This course is not appropriate for Biology majors and may not be counted toward major requirements. Offered only in even-numbered years. PREREQ: Upper division standing and B 100 or Z 107 or Z 111-112.

**B 301 CELL BIOLOGY (3-0-3)(S)**

Structure and function of prokaryotic cells, cellular energetics and metabolism, mitochondria and chloroplasts, cell and organelle genetics, chromosomal aberrations and medical applications of Cell Biology. PREREQ: One year of college Biology and C 317.

**B 303 GENERAL BACTERIOLOGY (3-6-5)(F)**

A general survey of the field of Bacteriology; techniques, taxonomy, growth, physiology, ecology, genetics, evolution, control, medical aspects and immunology. PREREQ: C 317 and B 301 or PERM/INST.

**B 310 PATHOGENIC BACTERIOLOGY (2-6-4)(S)**

Medically important bacteria, rickettsia, and chlamydia are surveyed with emphasis on their pathogenicity, host-parasite relationships and the clinical and diagnostic aspects of the diseases they produce in humans and animals. Offered odd-numbered years. PREREQ: B 205 or B 303 or PERM/INST.

**B 343 GENETICS-LECTURE (3-0-3)(F)**

A study of the principles of genetics as they relate to living organisms. PREREQ: B 301 or PERM/INST.

**B 344 GENETICS LABORATORY (0-6-2)(F)**

A course in the techniques of culturing and analyzing the genetic material of Drosophila, yeast, microorganisms, viruses and plasmodia. Experiments in classical, molecular and population genetics will be performed. Exercises with recombinant DNA molecules will be included. Periodic reports will be submitted. Some laboratory time will be arranged. PREREQ: prior or concurrent enrollment in B 343 required and PERM/INST.

**B 401-401G ORGANIC EVOLUTION (3-0-3)(S)**

Philosophical basis and historical development of evolutionary theory. Detailed examination of genetic variation, mechanisms of evolutionary change, adaptation, specialization, phylogeny. Genetics recommended. Offered odd-numbered years. PREREQ: B 301 or PERM/INST.

**B 412-412G GENERAL PARASITOLOGY (3-0-3)(S)**

Animal parasites with emphasis on those of man and his domestic animals. Lectures cover general biology, life history, structure, function, distribution and significance of parasites. Laboratory provides experience in identification and detection. PREREQ: B 301 or PERM/INST.

**B 415-415G APPLIED AND ENVIRONMENTAL MICROBIOLOGY (3-3-4)(S)**

Microbial populations and processes in soil and water. Water and food-borne pathogens. Microbial and biochemical methods of environmental assessment. PREREQ: B 205 or B 303 or PERM/INST.

**B 420-420G IMMUNOLOGY (3-0-3)(S)**

A survey of the principles of immunity, host defense systems, the immune response, immune disorders, serology and other related topics. Representative laboratory procedures will be demonstrated. PREREQ: B 205 or B 303 or PERM/INST.

**B 423-423G ECOLOGY (3-3-4)(F)**

A survey of the physical factors of the environment and their effect on life and distribution of plants and animals. Environmental and biological interrelationships of organisms will be discussed. Field and laboratory investigations into topics of physical habitat, populations, communities, pollution, etc. Weekend field trips may be taken. PREREQ: BT 130 and Z 230 or PERM/INST.

**B 498, 499 BIOLOGY SEMINAR (1-0-1)(F/S)**

A review of pertinent literature on selected topics. Restricted to senior Biology majors.

**Graduate Courses**

See Graduate College Catalog for course descriptions.
BT BOTANY

Lower Division

BT 130 GENERAL BOTANY (3-3-4)(F/S)(Area III). An introduction to plant biology, which includes the study of cells, genetics, whole plant physiology and functions, ecology, classification and economic importance. Prior enrollment in high school Chemistry or prior or concurrent enrollment in college Chemistry is recommended.

Upper Division

BT 320 PLANT ANATOMY (3-3-4)(S). A study of the structure and development of vascular plant tissues, regions and organs. Emphasis will be placed on the Angiosperms. PREREQ: BT 130 and B 301 or PERM/INST.

BT 305 SYSTEMATIC BOTANY (2-6-4)(S). Fundamental problems of taxonomy. Discussion of historical development of classification systems and comparison of recent systems. Instruction on use of keys and manuals. PREREQ: BT 130 or PERM/INST.

BT 311 PLANT MORPHOLOGY (3-3-4)(F). A comparative study of the structure, function, reproduction and development of major plant groups. Phylogeny, paleobotany and economic importance of various plant groups will be considered. PREREQ: BT 130 or PERM/INST.

BT 330-330G MYCOLOGY (3-3-4)(F). A study of the biology of fungi with emphasis on their classification, morphology and development, identification, ecology and economic significance. Laboratory work will include projects and field trips. PREREQ: BT 130 or PERM/INST.

BT 401 PLANT PHYSIOLOGY (3-3-4)(F). Emphasis placed on physical and chemical processes of plant body functions. Includes coverage of cell, tissue and organ functions; mineral requirements, metabolism, water uptake, photosynthesis; soil chemistry and the alkaloids and glucosides synthesized by plants. BT 302 and PH 101, 102 recommended. Offered odd-numbered years. PREREQ: BT 130 and C 317 or PERM/INST.

FS FORESTRY

Lower Division


Z ZOOLOGY

Lower Division

Z 107 CONCEPTS OF HUMAN ANATOMY AND PHYSIOLOGY (3-2-4)(S). Survey of human structure and function with emphasis on regulatory mechanisms of the body. This is a terminal course and does not satisfy allied health program requirements.

Z 111, 112 HUMAN ANATOMY AND PHYSIOLOGY (3-3-4)(Area III). A two-semester sequence for students whose career objectives require a thorough study of human anatomy and physiology. Z 107 cannot be substituted for either semester of this sequence. One semester of this sequence cannot be substituted for Z 107. Prior or concurrent enrollment in C 107 is recommended.


Upper Division

Z 301 COMPARATIVE VERTEBRATE ANATOMY (2-6-4)(F). The evolutionary development of vertebrate anatomy, fishes through mammals. Dissection of the shark, salamander and cat plus demonstrations of other vertebrate types. PREREQ: Z 230 or PERM/INST.

Z 305-305G ENTOMOLOGY (2-6-4)(F). Biology of insects with emphasis on identification and life cycles for students who have completed one year of college level biology. Laboratory includes field trips to collect and identify local species. Insect collection required. Students should meet with instructor the spring or summer before enrolling. PREREQ: PERM/INST.

Z 307 INVERTEBRATE ZOOLOGY (2-6-4)(S). Morphology, taxonomy and natural history of the marine invertebrate animals and terrestrial arthropods exclusive of the insects. Offered in alternate years. PREREQ: Z 230 or PERM/INST.

Z 341-341G ORNITHOLOGY (2-3-3)(S). Birds as examples of biological principles: classification, identification, ecology, behavior, life histories, distribution and adaptations of birds. Two weekend field trips. Offered odd-numbered years. PREREQ: Z 230 and PERM/INST.

Z 351 VERTEBRATE EMBRYOLOGY (2-6-4)(S). Germ cell development, comparative patterns of cleavage and gastrulation, neurulation and induction and development of human organ systems. Laboratory studies of frog, chick and pig development. PREREQ: Z 230 or PERM/INST.

Z 355 VERTEBRATE NATURAL HISTORY (2-6-4)(F). Classification, identification, evolution, ecological relationships, behavior and life histories of fish, amphibians, reptiles, birds and mammals. Two weekend field trips. PREREQ: Z 230 and PERM/INST.

Z 361 MICROTECHNIQUE (1-4-3)(S). Theory and practical application of procedures involving fixation, staining, preparation of paraffin sections and whole mounts and histochemical techniques. Offered alternate years. PREREQ: Z 230 or PERM/INST.

Z 400 VERTEBRATE HISTOLOGY (2-6-4)(F). Microscopic anatomy of cells, tissues and organ systems of vertebrates. Major emphasis will be on mammalian systems. Z 301 or Z 351 are recommended prior to enrollment. PREREQ: Z 230 or PERM/INST.

Z 401 HUMAN PHYSIOLOGY (3-3-4)(S). Functional aspects of human tissue and organ systems with emphasis on regulatory and homeostatic mechanisms. PREREQ: one year of college biology and C 317 or PERM/INST.

Z 409-409G GENERAL AND COMPARATIVE PHYSIOLOGY (3-3-4)(S). Physiological principles common to all forms of animal life are discussed. Physiological adaptations required to live in a variety of environments are presented. PREREQ: Z 230 and C 317 or PERM/INST.

Z 421-421G MAMMALOLOGY (2-3-3)(S). Mammals as examples of biological principles: classification, identification, distribution, ecology, life histories and adaptations of mammals. Two weekend field trips. Offered even-numbered years. PREREQ: Z 355 or PERM/INST.
Department of Chemistry

Science-Nursing Building, Room 315
Telephone (208) 385-3983

Chair and Professor: Richard Banks; Professors: Carter, Dalton, Ellis, Matjeke, Mercer, Stark; Assistant Professors: Bammel, LeMaster, Schimpf.

Degrees Offered
- B.S. in Chemistry
- B.S. in Chemistry, Secondary Education

Department Statement
The Chemistry Department's goal is to provide degree candidates with a thorough understanding of the fundamentals of chemistry, interwoven with training in up-to-date procedures and state-of-the-art instrumentation.

By choosing from a variety of courses, a BSU graduate with a major in chemistry will be prepared to enter graduate school, medical or other professional school, teach in high school, or work as a chemist in a variety of careers.

The Chemistry curriculum of Boise State University offers an education based upon employment requirements of industry, educational institutions and government agencies, while emphasizing the individual needs and capabilities of each student. The faculty of the Chemistry Department recognized that students are most successful if their training has prepared them for a specific career field, but also recognizes that a broad background affords the best opportunity for a future career selection.

Boise State University offers three Bachelor of Science degrees in Chemistry. The General Emphasis degree prepares the student for employment as a chemist or for admission to medical school. The Professional Emphasis degree, which is certified by the American Chemical Society, includes additional requirements that better prepare the student for a graduate program in chemistry, including linear algebra, differential equations and two additional credits of independent study. The Biochemistry Emphasis degree prepares students for admission to medical or dental school, or for employment in technical fields requiring a strong background in chemistry with knowledge of theories and techniques in microbiology, genetics and molecular biology. In addition to a chemistry core of general, analytical, organic, inorganic and physical chemistry, requirements of the Biochemistry Emphasis degree include zoology, cell biology, microbiology and genetics. All three Chemistry degrees require a full sequence of calculus and one year of physics.

Degree Requirements

CHEMISTRY MAJOR
Bachelor of Science
General Emphasis
1. General University & Baccalaureate Degree Requirements (128 credits total).

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<td>Physics PH 211,212,213,214</td>
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2. Recommended Electives:
- Foreign Language
- Upper Division Mathematics
- Upper Division Chemistry
- Advanced Topics in Chemistry
- Life Science Courses

CHEMISTRY MAJOR
Bachelor of Science
Professional Emphasis
1. General University & Baccalaureate Degree Requirements (128 credits total).

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2. Recommended Electives:
- Foreign Language
- Upper Division Mathematics
- Upper Division Chemistry
- Advanced Topics in Chemistry
- Life Science Courses

CHEMISTRY MAJOR
Bachelor of Science
Biochemistry Emphasis
1. General University & Baccalaureate Degree Requirements (128 credits total).

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<th>Course</th>
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Chemical Literature C 280
Organic Chemistry C 317, 318, 319, 320
Physical Chemistry C 321, 322, 323, 324
Advanced Inorganic Chemistry C 401
Instrumental Analysis C 411
Spectrometric Identification C 440
Advanced Chemical Preparations Laboratory C 443
Independent Study C 496
Chemistry Seminar C 498
Mathematics M 204,205,206
Physics PH 211,212,213,214
Recommended Programs

**CHEMISTRY MAJOR**
Bachelor of Science

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*Related electives to complement the student's chosen emphasis.

**CHEMISTRY MAJOR**
Bachelor of Science

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</table>

*Related electives to complement the student's chosen emphasis.

This degree program prepares the student to teach Chemistry in secondary schools.

1. General University & Baccalaureate Degree Requirements (128 credits total).
   - General Requirements: 27-28
     - English Composition E 101-102: 6
     - Area I Core: 12
     - Area II Core: 9
     - Electives, Lower and Upper Division: 0-1
   - Major Endorsement Requirements: 30-34
     - College Chemistry C 131, 132, 133, 134: 9
     - Quantitative Analysis C 211, 212: 4
     - Chemical Literature C 280: 2
     - Organic Chemistry C 317, 316, 319, 320: 10
     - Physical Chemistry C 321, 322, 323, 324: 10
     - Chemistry Seminar C 498: 1
     - Additional Upper Division Chemistry Courses: 3-4
   - Mathematics Requirements: 13
     - Completion of Mathematics through M 206
     - Physics Requirements (PH 211-212, 213-214): 10
     - Biology Requirements (BT 130 & Z 230): 9
   - Idaho Certification Requirements: 29
     - Intro Secondary Teach: Classroom Observation TE 172: 1
     - Foundations of Education TE 201: 3
     - Educational Technology TE 366: 2
     - Reading in Content Subjects TE 407: 3
     - Education of Exceptional Secondary Students TE 333: 3
     - Educational Psychology TE 225: 3
     - Secondary School Science Methods TE 394: 3
     - Secondary School Methods TE 381: 3
     - Senior High School Student Teaching TE 483: 10

**CHEMISTRY MAJOR, SECONDARY EDUCATION OPTION**
Bachelor of Science Degree

NOTE: Completion of all requirements for graduation with a secondary education option may require more than 128 credit hours. See Department of Teacher Education listing for more information.

**CHEMISTRY MINOR**
College Chemistry C 131, 132, 133, 134: 9
Organic Chemistry C 317, 316, 319: 8
Quantitative Analysis C 211, 212: 4

*Math prerequisite.

Total: 21 credits
SENIOR YEAR
Advanced Inorganic Chemistry C 401 ........................................ 3 -
Instrumental Analysis C 411 .................................................... 4 -
Advanced Chemical Preparations C 443 .................................. 2 -
Independent Study C 496 ......................................................... 2 -
Chemistry Seminar C 498 ....................................................... 1 -
Upper Division Chemistry Elective ........................................ 3 -
Area I & II Electives .................................................................. 3 -
General Electives* ....................................................................... 6 -
Total 15 14

Related electives to complement the students chosen emphasis.

CHEMISTRY MAJOR
Bachelor of Science
Biochemistry Emphasis

FRESHMAN YEAR
1st SEM 2nd SEM
English Composition E 101-102 .............................................. 3 3
College Chemistry C 131, 132-133, 134 ........................... 4 5
Mathematics M 204, 205......................................................... 5 4
Botany/Zoology BT 130 or Z 230 ........................................... 4-5 4-5
Area I & II Electives ............................................................... 3 -
Total 15 16-17

SOPHOMORE YEAR
Organic Chemistry C 317, 319, 318, 320 .............................. 5 5
Calculus & Analytic Geometry M 206 ................................. 4 -
Physics I & II PH 211-212, 213-214 .................................. 5 5
Quantitative Analysis C 211-212 .......................................... 4 4
Area I & II Electives ............................................................... 3 3
Total 17 17

JUNIOR YEAR
Physical Chemistry C 261, 322 ............................................. 3 3
Biochemistry Lecture C 498 .................................................. 3 -
Cell Biology B 301 ................................................................. 3 -
Chemistry Literature C 280 .................................................. 2 -
Area I or II Electives ............................................................. 9 9
Total 15 15

SENIOR YEAR
Spectroscopic Identification C 440 ...................................... 3 -
Genetics B 343 ........................................................................ 3 -
Bacteriology B 303 ................................................................. 5 -
Advanced Biology ................................................................. 4 -
Independent Study C 496 ....................................................... 1 1
Seminar C 498 ........................................................................ 1 -
Area I & II Electives ............................................................... 3 or 4 8
General Electives* ................................................................. 3 -
Total 15 or 16 17

Related electives to complement the students chosen emphasis.

CHEMISTRY MAJOR, SECONDARY EDUCATION OPTION
Bachelor of Science Degree

FRESHMAN YEAR
1st SEM 2nd SEM
English Composition E 101-102 .............................................. 3 3
College Chemistry C 131, 132-133, 134 ........................... 4 5
Mathematics M 204 ............................................................... 5 -
General Zoology Z 230 .......................................................... 5 -
General Botany BT 130 ......................................................... 4 -
Area I or II Electives ............................................................. 6 -
Total 17 18

SOPHOMORE YEAR
Organic Chemistry C 317, 319, 318, 320 .............................. 5 5
Mathematics M 205-206 ......................................................... 4 4
Physics I PH 211, 212-213, 214 .......................................... 5 5

Intro Seceding Teaching: Classroom Observation TE 172 ....... 1 -
Foundations of Education TE 201 ........................................ 3 -
Total 15 17

JUNIOR YEAR
Chemical Literature C 280 .................................................. 5 5
Physical Chemistry C 321, 322, 323, 324 .......................... 5 5
Quantitative Analysis C 211, 212 ........................................ 4 -
Educational Psychology TE 225 .......................................... 3 -
Reading in Content Subjects TE 407 ................................. 3 -
Area I or II Electives ............................................................. 6 3
General Electives ................................................................. 0-1 9
Total 14-15 17

SENIOR YEAR
Upper Division Chemistry Course ...................................... 3-4 -
Chemistry Seminar C 498 .................................................. 1 -
Educational Technology TE 369 .......................................... 2 -
Secondary School Methods TE 381 .................................. 3 -
Secondary School Science Methods TE 384 ..................... 3 -
Educating Except Second Students TE 333 ....................... 1 -
Senior High School Student Teaching TE 483 ................. 10 -
Area I or II Electives ............................................................. 6 -
Total 15-16 14

Students who do not have a Chemistry degree may be certified to teach Chemistry in secondary schools. Refer to the Department of Teacher Education section where minor certification endorsements for teaching areas are listed.

Course Offerings
See page 4 for definition of course numbering system

C CHEMISTRY

CHEMISTRY LABORATORY FEE: A $10 laboratory fee per course is charged to all students enrolling in a chemistry laboratory.

Lower Division

C 100 CONCEPTS OF CHEMISTRY (3-3-4)(Area III). A descriptive nonmathematical course designed to acquaint students with the science of Chemistry and the relationship of Chemistry to other fields of study and to modern life. This course cannot serve as a prerequisite to any other Chemistry course, nor will it serve as part of a Chemistry sequence. Students who have received credit for C 109 or C 133 may not receive credit for C 100.

C 107 ESSENTIALS OF CHEMISTRY (3-3-3)(Area III). The first semester of a sequence course for nonscience majors who require only one year of Chemistry. Basic concepts of inorganic and organic Chemistry. PREREQ: Satisfactory score on Mathematics Placement Exam "BA" and/or satisfactory completion of Math 020 is required. COREQ: Concurrent enrollment in C 107 is required.

C 108 LABORATORY FOR ESSENTIALS OF CHEMISTRY (0-3-1)(Area III). The laboratory to accompany C 107. COREQ: Concurrent enrollment in C 107 is required.

C 109 ESSENTIALS OF CHEMISTRY (3-3-3)(S/SU)(Area III). A continuation of C 107 to include basic concepts of Biochemistry. PREREQ: C 107 and 108. COREQ: Concurrent enrollment in C 110 is required.

C 110 LABORATORY FOR ESSENTIALS OF CHEMISTRY (1-3-2)(S/SU)(Area III). The laboratory to accompany C 109. One three-hour laboratory and one-hour recitation. The recitation will include discussion of both lecture and laboratory material. COREQ: C 109.

C 131 COLLEGE CHEMISTRY (3-0-3)(Area III). The first semester of a one-year sequence course. A thorough study of the fundamentals of Chemistry including atomic and molecular structure, stoichiometry, physical states and solutions. PREREQ: M 111 or successful completion of the C 131 Math exam. COREQ: Concurrent enrollment in C 132 is required.
C 132 LABORATORY FOR COLLEGE CHEMISTRY (0-3-1)(FSU)(Area III). Laboratory work to accompany C 131. COREQ: Concurrent enrollment in C 131 is required.

C 133 COLLEGE CHEMISTRY (3-0-3)(S/SU)(Area III). A continuation of C 131 to include equilibrium, redox and complex ions. PREREQ: C 131, 132.

C 134 LABORATORY FOR COLLEGE CHEMISTRY (1-3-2)(S/SU)(Area III). Laboratory work to accompany C 133. To include qualitative analysis. One hour of recitation and one three-hour laboratory per week. PREREQ: C 131, 132. COREQ: C 133.

C 211 QUANTITATIVE ANALYSIS (3-0-3)(F). Study of the equilibrium relationships and methods used in gravimetric, volumetric and some instrumental analysis. PREREQ: C 131, 132, 133, 134.

C 212 QUANTITATIVE LABORATORY TECHNIQUE (0-3-1)(S). Practical application of quantitative analytical techniques through the analysis of unknown samples using gravimetric, volumetric methods. An introduction to statistics is included. PREREQ: C 211 or concurrent enrollment.

C 280 CHEMICAL LITERATURE (2-0-2)(S). An introduction to the chemical literature including the use of Chemical Abstracts, computer searching and writing reports in accepted format. PREREQ: C 133 or PERM/INST.

C 285/386 DIRECTED READING IN CHEMISTRY (VARIABLE CREDIT). An individual study of a topic in chemistry arranged by the student in conjunction with a supervising member of the chemistry faculty.

C 299/399 RESEARCH IN CHEMISTRY (VARIABLE CREDIT). An individual laboratory research project in chemistry arranged by the student in conjunction with a supervising member of the chemistry faculty.

Upper Division

C 317 ORGANIC CHEMISTRY LECTURE (3-0-3)(F). An overview of Organic Chemistry covering the fundamental principles of nomenclature, reactions, synthesis, mechanisms, stereochemistry, proteins and carbohydrates. Will fulfill the requirements for an elementary organic course and partially fulfill the requirements for a more rigorous course. PREREQ: C 131, 132-133, 134. COREQ: Concurrent credit enrollment in C 319 is required.


C 319 ORGANIC CHEMISTRY LABORATORY (1-3-2)(F). Basic organic laboratory techniques and simple organic syntheses. One three-hour laboratory and one hour of recitation per week. COREQ: Concurrent enrollment in C 317 is required.

C 320 ORGANIC CHEMISTRY LABORATORY (1-3-2)(S). More advanced organic laboratory techniques, syntheses, classical organic qualitative analysis and an introduction to spectrophotometric methods. Three hours of laboratory and one hour of recitation per week. PREREQ: C 319. COREQ: Concurrent enrollment in C 318 is required.

C 321, 322 PHYSICAL CHEMISTRY LECTURE (3-0-3)(FSU). The fall semester will cover gases laws, thermodynamics and equilibria, introductory quantum theory and atomic and molecular structure. The spring semester will cover symmetry, spectroscopy, introductory statistical mechanics and kinetics. PREREQ: PH 102 or PH 213 and 214, M 206 or equivalent, C 134. A year's sequence (fall and spring).

C 323, 324 PHYSICAL CHEMISTRY LABORATORY (0-6-2)(FSU). Methods of physicochemical measurement, introduction to computerized data analysis and technical report writing. This course illustrates the topics covered in C 321 and 322. The fall semester to include gases, thermodynamics, phase equilibria and electrochemistry. The spring semester to include kinetics and spectroscopy. PREREQ: C 211 and 212 or PERM/INST. PREREQ/COREQ: C 321, 322 or concurrent enrollment. A year's sequence (fall and spring).

C 341, 342 GLASSBLOWING (0-3-1). C 341 acquaints students with the basics of scientific glassblowing. C 342 gives students practice in techniques and in construction of more complex apparatus. PREREQ: Junior standing. Offered on demand.

C 401-401G ADVANCED INORGANIC CHEMISTRY (3-0-3)(F). Atomic structure, molecular structure using valence bond and molecular orbital theories, elementary group theory, transition metal coordination chemistry, acid-base theory. PREREQ: C 322 or PERM/INST.

C 411-411G INSTRUMENTAL ANALYSIS (2-6-4)(S). Theory and implementation of modern chemical instrumentation. Topics include chromatography, atomic and molecular spectroscopy, mass spectrometry, error analysis and signal processing. PREREQ: C 211 and C 322.

C 422 ADVANCED TOPICS IN CHEMISTRY (3-0-3). Selected advanced topics from Chemistry such as mass spectrometry, nuclear magnetic resonance spectroscopy, radiochemistry, environmental chemistry and polymer chemistry. Students seeking graduate credit will be assigned additional work, including one or more term papers. PREREQ: C 322 or PERM/INST. Offered on demand.

C 431-431G BIOCHEMISTRY I (3-0-3)(F). A study of the chemistry of biologically important compounds and an introduction to metabolism. PREREQ: C 317.

C 432-432G BIOCHEMISTRY LABORATORY (3-0-3)(FSU). Identification, isolation and reactions of biologically important compounds. PREREQ: C 431.

C 433-433G BIOCHEMISTRY II (3-0-3)(S). The function of biological compounds, including intermediary metabolism and synthesis of proteins. Cellular control mechanisms of these processes are integrated into the material. PREREQ: C 431.

C 440-440G SPECTROMETRIC IDENTIFICATION (2-3-3)(S). Identification of compounds using modern spectrometric techniques. Two lectures and one three-hour laboratory per week. PREREQ: C 316 and C 321.

C 443-443G ADVANCED CHEMICAL PREPARATION LABORATORY (1-3-2)(S). Advanced techniques in the preparation, isolation and characterization of chemical compounds with emphasis on inorganic compounds. One three-hour laboratory and one hour of recitation per week. PREREQ: C 401 or PERM/INST.

C 496 INDEPENDENT STUDY IN CHEMISTRY (Variable credit). An individual laboratory research project in chemistry selected by the student in conjunction with a supervising member of the chemistry faculty. An appropriate amount of library research and written reports are also required. PREREQ: C 280, C 318 and C 322.

C 498 SEMINAR (1-0-1)(S). Group discussions of individual reports on selected topics in the various fields of Chemistry. PREREQ: C 280, Chemistry major and senior standing.

Graduate

The department offers certain graduate courses. See the Graduate College Catalog for course descriptions.
Department of Communication

Communication Building, Room 100
Telephone (208) 385-3320

Chair and Professor: Robert R. Boren; Professors: Cox, McCorkle, McLuskie, Mills, Parker; Associate Professors: Craner, Pitman, Rayborn, Rudd, Wollheim; Assistant Professors: Lutze, Morris, Most, Rohlfing.

Degrees Offered
- B.A. in Communication
- B.A. in Mass Communication/Journalism emphasis
- B.A. in Communication Training and Development emphasis
- B.A. in Communication, Secondary Education
- B.A. in Communication/English, Journalism emphasis
- B.A. in Communication/English, Humanities/Rhetoric emphasis
- M.A. in Communication (See Graduate College Catalog for details)

Department Statement
The Department of Communication provides a broad-based program which offers students an opportunity to develop an understanding of the basic processes involved when humans attempt to communicate with one another. We believe that all majors in communication should understand the basic principles and theories about human communication before they specialize in any particular area of communication. It is also our belief that after having gained the basic knowledge, students should be allowed to create programs which are best suited to meet their particular career and life plans. Therefore, the number of required courses is as limited as possible, and the student, working with an advisor, selects sufficient additional courses to complete the requirements for a major.

A B.A. in Communication includes a common core of courses required of all Communication majors. Beyond the basic core, students may choose a combined major in Communication-English, or a communication emphasis area. Communication study is enriched through communication laboratory, the campus newspaper, BSU Radio, University Television Productions, forensic activities and on-the-job opportunities afforded through internships and practice.

Degree Requirements
COMMUNICATION MAJOR
Bachelor of Arts Program
1. Completion of general university requirements for B.A. degree.
2. All majors in the Department of Communication, regardless of their specific emphasis, shall complete the following courses:
   - Introduction to Communication Study CM 115
   - Perspectives of Inquiry CM 201
   - Research Methods CM 302
3. Perspectives on Communication CM 421
   - Communication Seminar CM 496
   - Communication Lab CM 316
   - Courses for Area of Emphasis
4. Communication Electives
5. Other Electives

Total

Mass Communication/Journalism Emphasis
1. General University Requirements
2. Departmental Core Requirements
3. Mass Communication Requirements
   - Mass Media and Society CM 171
   - Mass Communication & Social Change CM 261
   - Mass Media and Cultural Form CM 282
   - Mass Communication Concepts & Perspectives CM 465
4. At least 3 courses from the following:
   - Audio Production CM 263
   - Broadcast Writing CM 264
   - Video Production CM 267
   - Reporting & News Writing CM 273
   - Copy Editing CM 275
   - Photo Communication CM 277
   - Broadcast Management & Programming CM 365
   - Media Research CM 366
   - Advanced Media Production CM 367
   - Reporting Public Affairs CM 373
   - Communication Graphics CM 379
   - Feature Writing CM 473
   - Critical Writing CM 474
   - Studies in Journalistic Communication CM 480
   - Studies in Mass Communication CM 482
5. Media Ethics CM 460 or Mass Comm Law CM 462
6. Political Communication CM 463 or New Comm Tech CM 464
7. Other Electives from Communication

Total

Communication, Secondary Education Emphasis
1. General University Requirements
2. Education Requirements
3. Departmental Requirements
   A. Departmental Core Requirements
   B. Required Emphasis Area Courses:
      - Communication Activities CM 114/314
      - Reasoned Discourse CM 112
      - Interpersonal Communication CM 221
      - Public Speaking CM 231
      - Nonverbal Communication CM 341 or Communication in the Small Group CM 251
      - Methods of Teaching Communication CM 401
      - Internship in Directing Forensics CM 493
   C. An additional twelve credits chosen from the following:
      - Listening CM 131
      - Voice and Diction CM 121
      - Mass Media and Society CM 171
      - Oral Interpretation CM 321
      - Rhetorical Theories CM 321
      - Message Analysis and Criticism CM 331
      - Nonverbal Communication CM 341
      - Intercultural Communication CM 351
      - Conflict Management CM 390
      - Persuasion CM 412
      - Small Group Process CM 412

Total

NOTE: Students are encouraged to participate in practical communication applications such as internships and/or practica. Six internship credits may count toward departmental major requirements and four practicum credits may count toward general education electives. Additional internship and practicum credits may count toward general education electives.
Communication Training and Development Emphasis

1. General University Requirements 51
   English Composition E 101-102 ...........................................6
   Area I ...........................................................................12
   Literature .......................................................................3
   Humanities ......................................................................3
   Philosophy .......................................................................3
   Area I-Any Field ..............................................................6
   Area II ...........................................................................12
   History ...........................................................................3
   Principles of Macroeconomics EC 206 .................................3
   P 101 or SO 101 ..................................................................3
   Area II-Any Field ..............................................................3
   Area III ...........................................................................12
   Math for Business Decisions M 105-106 ..............................8
   Area III-Any Field ..............................................................8
   Additional 9 credits chosen from: ......................................9
   AN 102, P 295, P 441, SO 210, SO 310, TE 208, TE 336 .........9

2. Department Requirements ..................................................45
   Departmental Core Requirements ......................................16
   Intro Communication Training & Development CM 255 ........3
   Developing Communication Training CM 355 ....................3
   Methods of Teaching Communication CM 401 ...................3
   Additional Department Requirements ...............................17
   At least one course chosen from each of the following:
   1. CM 231, 241, 311, 312
   2. CM 131, 221, 307, 341, 390
   3. CM 251, 361, 431
   4. CM 321, 351, 412
   5. CM 273, 263, 267
   6. CM 493 Internship

3. Additional Communication Electives ..................................3
   Students choosing the Communication Training and Development
   Emphasis must also complete an APPROVED MINOR in a related field,
   e.g., Art, Biology, Business, Economics, Multi-Ethnics Studies, Political
   Science. (See page 3 for list of approved minors).

COMBINED MAJOR
Communication - English

Journalism Emphasis

Department requirements:

COMMUNICATION .................................................................26
   Intro to Communication Studies CM 115 ............................1
   Perspectives of Inquiry CM 201 ...........................................3
   Communication Laboratory CM 216, 316 ..........................3
   Reporting & Newswriting CM 273 .......................................3
   Research Methods CM 302 ................................................3
   Perspectives on Communication CM 421 ............................3
   Media Ethics/ Mass Comm Law CM 460/462 .......................3
   Mass Communication Concepts & Perspectives CM 465 .........3
   Upper Division Mass Communication or Journalism elective 4

ENGLISH .................................................................27
   Intro to Language Study LI 305 ...........................................3
   Upper Division Literature elective (3 hrs in courses before 1800) ..12
   Senior Seminar - (Either CM 498 - 3 hours or E 498 - 3 hours).
   Total hours: 56 (26 and 27 and 3).

Humanities/Rhetoric Emphasis

Department requirements:

COMMUNICATION .............................................................26
   Intro to Communication Studies CM 115 ............................1
   Perspectives of Inquiry CM 201 ...........................................3
   Interpersonal Communication CM 221 ...............................3
   Communication Laboratory CM 216/316 ............................3
   Public Speaking/Oral Interpretation CM 231/241 .................3
   Research Methods CM 302 ................................................3
   Rhetorical Theories/Message Analysis & Criticism CM 321/331 ..3
   Perspectives on Communication CM 421 ............................3
   Upper Division Communication electives ...........................4

ENGLISH .................................................................27
   British or American Literature survey ................................6
   Humanities HU 207, 208 ....................................................3
   Advanced Writing and Linguistics ......................................9
   To be chosen from Nonfiction Writing (E 201), the Creative
   Writing sequence or Technical Writing.
   Upper Division electives ...................................................9

Senior Seminar - (Either CM 498 - 3 hours or E 498 - 3 hours).
   Total hours: 56 (26 and 27 and 3).

In Reference to electives:
1. If students do not elect another Humanities course (either HU 207 or
   208), then they should take nine additional upper division credits in
   each Department.
2. If students elect the extra three hours in Humanities (either HU 207 or
   208), then they would take six upper division hours in Communication or
   English and nine upper division hours in the other Department.

COMMUNICATION MINOR

Students majoring in another department may select a 25 hour communica-
....t... 5. If the students do not elect another Humanities course (either HU 207 or 208), then they should take nine additional upper division credits in each Department.
6. If students elect the extra three hours in Humanities (either HU 207 or 208), then they would take six upper division hours in Communication or English and nine upper division hours in the other Department.

COMBINED MAJOR

Students majoring in another department may select a 25 hour communica-
...minor. At least 10 hours of the minor must be upper division credit.
7. No more than 3 hours may be selected from CM 216 or CM 316. No more than a total of 3 hours may be selected from CM 114, 293, 314, 451, or 493.

Course offerings

See page 4 for definition of course numbering system

CM COMMUNICATION

Lower Division

CM 111 FUNDAMENTALS OF SPEECH COMMUNICATION (3-0-3)(Area II).
Fundamental principles of effectively preparing, presenting and critically consum-
...s, issues, arguments, evidence, fallacies of arguments and various systems of
reasoning. Preparation for and participation in activities designed to apply the
principles of logical reasoning in the public forum.

CM 112 REASONED DISCOURSE (3-0-3)(Area II)/(S).
Introduction to logical reasoning and the role of the advocate in a free society. Analysis of propositions, issues, arguments, evidence, fallacies of arguments and various systems of reasoning. Preparation for and participation in activities designed to apply the principles of logical reasoning in the public forum.

CM 114/CM 314 COMMUNICATION ACTIVITIES (1-0-1)(F/S).
Preparation for and participation in communication activities: Competitive forensics and community speaking, University Television Productions, or other co-curricular communication activities. PREREQ: Permission of the instructor. CM 114 and CM 314 may be repeated for up to four credits each. Not more than four credits total of CM 114, CM 214, CM 314 or CM 414 may be applied toward the degree in communication.
CM 115 INTRODUCTION TO COMMUNICATION STUDIES (1-Q-1)(F/S). Dimensions of human communication, historical and contemporary concepts, communication degree programs and career opportunities. (PASS/FAIL).

CM 116 COMMUNICATION LABORATORY (1-1-2)(F/S). An experimental probe into human communication through participation in practical applications of concepts, communication requirements and technologies.


CM 122 INTRODUCTION TO SIGN LANGUAGE (3-0-3)(F/S). An introduction to sign language using American Sign Language (ASL). Emphasis is placed on initial skills and the history of sign language.

CM 131 LISTENING (3-0-3)(F/S). Theory and practice of our most-used communication skill. Analysis of variables as they promote or impede the process of listening.

CM 171 MASS MEDIA AND SOCIETY (3-0-3)(F/S). An examination of the role of mass media in contemporary society. Emphasis on the inter-relationships between media and other social and political institutions, and on critical analysis of current media issues.

CM 201 PERSPECTIVES OF INQUIRY (3-0-3)(F/S). The nature, sources and tests of knowledge: various views of theories, theory building, models and the nature of inquiry. PREREQ: E 102, CM 115 or PERM/INST.

CM 214/CM 414 INTERCOLLEGIATE DEBATE (1-0-1)(F). Preparation for and participation in intercollegiate tournament debate, including and intensive study of the current CEDA National Collegiate Debate Topic. COREQ: CM 114 or 314. PREREQ: PERM/INST, CM 214 and 414 may be repeated for up to four credits each. Not more than four credits total of CM 114, 214, 314, or 414 may be applied toward the degree in communication.

CM 216 COMMUNICATION LABORATORY (3-0-3)(F/S). Participation in a community in which students form their own economy, government, and produce and consume communication products and services. Development of and participation in workshops and short courses. PREREQ: CM 115. May not be taken concurrently with CM 216.

CM 221 INTERPERSONAL COMMUNICATION (3-0-3)(F/S). An examination of the nature of human communication. Focuses, through experiential learning, on awareness of self, communicative relationships and context.


CM 241 ORAL INTERPRETATION (3-0-3)(F/S). Practice in reading prose, poetry and drama to help the student determine a logical and emotional meaning for a selection, and project that meaning to listeners.

CM 251 COMMUNICATION IN THE SMALL GROUP (3-0-3)(F/S). A study of human interaction in small groups. Emphasis on actual experience in working in small groups. Includes concepts in planning, preparing and participating in group discussion and decision making.

CM 255 INTRODUCTION TO COMMUNICATION TRAINING AND DEVELOPMENT (3-0-3)(F/S). Designed primarily for students interested in communication-based training and development careers. A survey of theories and techniques of communication training and development in human organizations.

CM 261 MASS COMMUNICATION AND SOCIAL CHANGE (3-0-3)(F). The history and evolution of communication and mass communication technologies, focusing on their role in the development of mass society. Traces social-cultural evolution from oral through written to electronic media. PREREQ: CM 171.

CM 262 MASS MEDIA AND CULTURAL FORM (3-0-3)(S). An examination of the form and cultural values of mass media programs, the relationship between audiences and media products, and approaches to critical analysis of media products. PREREQ: CM 171.


CM 273 REPORTING AND NEWS WRITING (3-0-3)(F/S). Fundamentals of reporting, from techniques of interviewing and fact-gathering through the construction of the news story. Emphasis on accuracy, conciseness and clarity in writing. Study of newspaper styles, usage, grammar, punctuation, capitalization and the use of copy editing symbols. PREREQ: E 102 and ability to use typewriter or PERM/INST.

CM 277 PHOTO COMMUNICATION (2-3-0)(F). Photography as a means of communication. Includes the planning and production of photographs for publication and broadcast. PREREQ: AR 251 or PERM/INST.

CM 278 COPY EDITING (3-0-3)(ALTERNATE YEARS). Theory and practice in editing local and wire news, headline writing, picture editing, evaluating news, layout and design, video display terminal operation. Examination of Associated Press style, refinement of grammar. PREREQ: E 102 and ability to use typewriter or PERM/INST.

CM 300 COMMUNICATION ISSUES, INDUSTRIES AND INQUIRY IN CANADA (3-0-3)(S). Describes Canadian communication industries, issues and inquiry, especially the question of cultural identity for Canada. Discusses governmental communication policy as a tool for preserving national, regional and tribal identity. Examination of Canadian scholars of communication. Cross listed as CN 300 for credit in the Canadian Studies Minor.

CM 302 RESEARCH METHODS (3-0-3)(F/S). Historical, critical, descriptive and experimental research methods and tools in communication. Students design, conduct, report, and evaluate research projects. PREREQ: CM 201 with a grade of C or better or PERM/INST.


CM 311 SPEECH-COMMUNICATION FOR TEACHERS (3-0-3)(F/S). Designed to improve the prospective teacher's awareness of communicative processes related to effective teaching; emphasis on various communication situations confronted by teachers and strategies for achieving good student-teacher relationships. PREREQ: CM 255 or admission to Teacher Education Program.

CM 312 APPLIED COMMUNICATION (3-0-3)(F/S). An application of basic principles of communication to real-life situations involving current community problems and issues. PREREQ: CM 111.

CM 314 COMMUNICATION ACTIVITIES (1-0-1)(F). Preparation for and participation in communication activities: interscholastic debate competition, individual speaking or community speaking activities. PREREQ: PERM/INST, CM 114 and CM 314 may be repeated for a total of eight credits, not more than four of which may be applied toward the degree in communication.

CM 316 COMMUNICATION LABORATORY (3-0-3)(F/S). Participation in a community in which students form their own economy, government, and produce and consume communication products and services. Development of and participation in workshops and short courses. PREREQ: CM 115. May not be taken concurrently with CM 216.

CM 321 RHETORICAL THEORIES (3-0-3)(F/S). An examination of theories concerning the complexity of interaction among ideas, messages and people, including analysis of various message strategies.

CM 322 INTERMEDIATE SIGN LANGUAGE (3-0-3)(F/S). A continuation in building skills, vocabulary and techniques in American Sign Language (ASL). Refining of abilities in communication will be stressed. Techniques for using a total communication with the deaf will be expanded to cover various educational and social situations. PREREQ: CM 122.


CM 332 CONTEMPORARY PUBLIC COMMUNICATION (3-0-3)(F/S). The nature, function and influence of public communication in contemporary society. An examination of major events and issues in an attempt to identify particular characteristics of public dialogue which reflect, reinforce and alter public opinion.
CM 411 NONVERBAL COMMUNICATION (3-0-3)(F/S). An examination of the function of non-verbal behavior codes in communication.

CM 351 INTERCULTURAL COMMUNICATION (3-0-3). An analysis of societal and cultural influences on interpersonal communication. A critical examination of communication within and among subcultures as well as across cultural boundaries.


CM 361 ORGANIZATIONAL COMMUNICATION (3-0-3)(F). The application of communication theory and methodology to the study of communication within the formal organization. Theories and problems of human communication within and between organizations.

CM 365 BROADCAST MANAGEMENT AND PROGRAMMING (3-0-3)(F). Examines the workings of both commercial and public radio and television stations, including personnel, program formats, legal and public responsibilities.

CM 366 MEDIA RESEARCH (3-0-3)(S). Development, interpretation and use of audience surveys, rating research and program development and testing techniques.


CM 373 REPORTING PUBLIC AFFAIRS (3-0-3)(F). Theory and practice of covering governmental and community affairs. Examination of the best system and developing sources. PREREQ: CM 273 or PERM/INST.

CM 379 COMMUNICATION GRAPHICS (3-0-3) Alternate Years (F/S). Theory and practice of graphic design and production of mass media products. An exploration of the communication effects of typefaces, paper, design, layout, printed and electronic images. PREREQ: AR 101, CM 273 or PERM/INST.

CM 390 CONFLICT MANAGEMENT (3-0-3)(S). Examination of the causes of conflict, conflict management theory and conflict management techniques applied in interpersonal, intergroup, organizational and community settings. Discussion and skill development through experiential learning will focus on such conflict management techniques as interpersonal management, mediation, arbitration, negotiation and reconciliation. Students may not receive credit for both SO 390 and CM 390. PREREQ: SO 290 or CM 111, Upper division standing.


CM 412 PERSUASION (3-0-3)(F). Emphasis on theories of persuasion. Examination of variables and message strategies relevant to the persuasive process. Application of theory through the analysis and construction of persuasive messages.

CM 416 COMMUNICATION LABORATORY (2-0-2)(F/S). Involvement in a community to practice and refine communication skills, e.g., leadership, organization, advisory, research and evaluation.

CM 421 PERSPECTIVES ON COMMUNICATION (3-0-3)(F). A survey of contemporary theories and theorists of communication. PREREQ: CM 201.

CM 431 SMALL GROUP PROCESS (3-0-3)(F). An advanced study of variables and theories affecting the communicative interaction of small groups.

CM 451 COMMUNICATION PRACTICUM (Variable 1 to 4)(F/S). Directed study emphasizing the practical application of skills and theory relevant to human communication. An opportunity to focus on areas of special interest to the student. May be repeated for a total of four credits.

CM 460 MEDIA ETHICS (3-0-3)(F). Examination of ethical issues in contemporary mass media. Particular emphasis is placed on the ethical dilemmas of contemporary media norms and practices in both entertainment and journalism.


CM 463 POLITICAL COMMUNICATION (3-0-3)(F). A study of the uses of communication media in the political process, within and beyond the electoral context. Communication theory and strategy underlying attempts to influence public opinion, with attention to the role of symbols in political communication.

CM 464 NEW COMMUNICATION TECHNOLOGIES (3-0-3)(S). Examination of new technologies, such as videotex, satellite, interactive computer networks and discussion of issues related to the impact of these technologies on the social, political and cultural environment.


CM 473 FEATURE WRITING (3-0-3)(F/S). Non-fiction writing of features for newspapers or magazines. Includes analysis of publication markets and procedures for submitting articles. Alternate years.

CM 474 CRITICAL WRITING (3-0-3)(F/S). Writing opinion for the mass media with emphasis on editorials, personal columns and reviews of the arts. Alternate years.


NOTE: The next five courses below cover a variety of technical and theoretical subjects in human communication. They involve a variety of approaches and activities. These courses are scheduled as necessary to meet student and community needs. Consult the current semester time schedule for specific courses and content offerings. Each general course is repeatable, but the specific topic of study within the course is not repeatable.

CM 480 STUDIES IN JOURNALISTIC COMMUNICATION (3-0-3)(F/S). Advanced instruction in theories about, history of and preparation of nonfiction content for the mass media. Content varies from semester to semester. Subjects may include: Public Affairs Reporting, Journalism History, Documentary Script Writing, etc. PREREQ: Upper division standing and PERM/INST.

CM 481 STUDIES IN INTERPERSONAL COMMUNICATION (3-0-3)(F/S). The examination of issues, contexts and particulars of interpersonal communication. Content varies from semester to semester. Subjects may include: Conflict Management, General Semantics, Male-Female Communication, etc. PREREQ: PERM/INST.

CM 482 STUDIES IN MASS COMMUNICATION (3-0-3)(F/S). Instruction in theories about, history of and preparation of content for mediated public communication. Content varies from semester to semester. Subjects may include: History of Mass Communication, International Communication, Small Format Video, etc. PREREQ: PERM/INST.

CM 483 STUDIES IN ORGANIZATIONAL COMMUNICATION (3-0-3)(F/S). The study of basic communication principles as applied to or affected by the organizational setting. Content varies from semester to semester. Subjects may include: Communication Theories of Organizational Management, Negotiation, Human Relations Training, etc. PREREQ: PERM/INST.

CM 484 STUDIES IN RHETORIC AND PUBLIC PRESENTATION (3-0-3)(F/S). Historical, theoretical and practical study in various forms of communication presentation. Content varies from semester to semester. Subjects may include: Advanced Public Speaking, Group Interpretation, Theory of Debate, etc. PREREQ: PERM/INST.

CM 485 STUDIES IN THE INTERRELATIONSHIP BETWEEN GENDER AND COMMUNICATION (3-0-3)(F/S). Instruction in gender as a variable in communicative behaviors. Content varies semester to semester. Subjects may include: Gender Issues in Interpersonal and Organizational Communication, Power, Gender and Nonverbal Communication, Feminist Rhetoric.

CM 489 COMMUNICATION SEMINAR (3-0-3)(F/S). A multi-theoretical approach to the analysis of communication problems and issues culminating in the presentation and defense of student-generated projects. PREREQ: CM 421 and Senior standing.

Graduate

See Graduate College Catalog for course descriptions.
Department of Computer Information Systems & Production Management

Business Building, Room 308
Telephone (208) 385-1181

Chair and Professor: Susan I. Brender; Professors: Clark, Green, Groebner, LaCava, Shannon; Associate Professors: Gallup, Maxson, Minch, Warberg, G. Wojtkowski, W. Wojtkowski; Assistant Professors: Anson, Fry.

Degrees Offered
- B.B.A., B.A. and B.S. in Computer Information Systems
- B.B.A., B.A. and B.S. in Production and Operations Management

Department Statement

Career opportunities for graduates of our Computer Information Systems (CIS) majors and Production and Operations Management (POM) majors are excellent. There is a great demand by industry and government for individuals who have a solid, educational background of the kind provided by our programs. Our students are assured of receiving a high quality education because:

We have highly qualified and dedicated faculty. All full-time faculty in the department hold doctoral degrees and are engaged in state-of-the-field scholarly work. The faculty is dedicated to the teaching profession and utilizes a variety of innovative teaching methods and technologies. Our faculty is genuinely interested in the education and well being of our students.

The curriculum is at the forefront of developments in each field and is regularly updated to reflect the many changes that have occurred. Students will be challenged with the most current thinking in their discipline.

There is a great deal of involvement with local organizations. Our department has advisory boards of business leaders who work with the department to enhance our educational mission. A number of internships are offered and students are encouraged to take advantage of such an opportunity.

A state-of-the-art teaching environment is maintained in the College of Business through the implementation of the micron electronic classroom, a room with full multimedia capability; and the Electronic Meeting Room allowing for teaching and research in group decision support and electronic meetings and team building.

Student organizations provide leadership opportunities as well as educational programs. The student chapter of the Data Processing Management Association (DPMIA) has had a tradition of serving the education, social and professional needs of our CIS majors. Similar advantages are offered to Production and Operations Management students through the Association of Production and Inventory Control Systems (APICS) student chapter.

After graduation, our students will join a distinguished group of alumni, many of whom hold key positions at some of our nation's best organizations. Many of our alumni are actively involved in supporting our programs.

Technology, global competition, and the demand for greater productivity are changing the nature of business. Graduates of our CIS and POM programs will receive an education to help prepare for exciting and challenging leadership career positions to bring about change.

Recommended Programs

COMPUTER INFORMATION SYSTEMS MAJOR
Bachelor of Business Administration Degree

Computer Information Systems (CIS) is a field of study merging several different disciplines such as organizational behavior, management, accounting, management science and computing technology. The central focus of CIS is the development and maintenance of information technology to support organizational business processing and decision making activities. The basic purpose of the program is to prepare students for careers in providing information technology services. For example, a CIS major would have a number of career tracks to consider including end-user computing, database administration, application programming, systems analysis and development, information center service, operations, communications specialist and information resource management. The CIS program provides thorough education in computing and general business, along with a broad background in the arts and sciences. The CIS program emphasizes a balance between technological, human and organizational considerations involving the application of information technology.

FRESHMAN YEAR

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<td>Mathematics M 105-106 or M 111-204</td>
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SOPHOMORE YEAR

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<td>Intro to Financial Accounting AC 206</td>
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JUNIOR

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<td>Management &amp; Organizational Theory MG 301</td>
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<td>Database Management Systems IS 317</td>
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<td>Principles of Marketing MK 301</td>
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<td>Business Communications AS 328</td>
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<td>Systems Analysis and Design IS 320</td>
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<td>Principles of Finance FI 303</td>
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SENIOR YEAR

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<td>Upper division Production Management Elective*</td>
<td>3</td>
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<tr>
<td>Information Resource Management IS 490</td>
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<tr>
<td>Business Policies GB 450</td>
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<td>*International Business Elective</td>
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The Production and Operations Management (POM) major is dedicated to the study of how to achieve productivity and competitiveness in today's global economy. To accomplish this objective, the POM major integrates fundamentals from most of the functional areas of business such as information management, finance, economics, accounting and marketing with the analytical techniques and objective, the POM major integrates fundamentals from most of the functional areas of business such as information management, finance, economics, accounting and marketing with the analytical techniques and skills necessary for competent decision making. Classes emphasize quality and productivity through real applications and interaction with practitioners from local businesses and government. Students are encouraged to add depth to their study through internships and directed independent study.

Graduates should be especially well prepared for advancement to decision making positions in either the private or public sector.

### Course Offerings

**IS COMPUTER INFORMATION SYSTEMS**

#### Lower Division

**IS 101 COMPUTER APPLICATIONS (3-0-3)(F,S).** Application of computing for both microcomputers and mainframe are discussed. Particular attention is devoted to problem solving with computers through hands-on experience. Students will learn to use some of the most commonly used software for word processing, spreadsheets, database systems, communications and graphics. This course is appropriate for members of the community and for students from any discipline wishing to gain familiarity with computers.

#### Upper Division

**IS 310 INTRODUCTION TO MANAGEMENT INFORMATION SYSTEMS (3-0-3)(F,S).** An introduction to the fundamental concepts of management information systems in business organizations. Management Information is the framework tying together business decision makers in an organization. This course includes information systems concepts and planning; end-user computing; hardware, software, database systems; systems analysis, design, implementation; computer-human interface; data communications and networks; international, social, political, legal, behavioral and ethical issues of MIS. **Prerequisite:** Upper division business standing. Not required for CIS majors.

**IS 317 DATABASE MANAGEMENT SYSTEMS (3-0-3)(F,S).** Database organization, manipulation and administration in business environments. Topics include: data structures and related algorithms; file and database organization; modeling relational hierarchical and network; data dictionary systems; languages for data definition, manipulation and retrieval; and administrative considerations in multi-user
and distributed environments. PREREQ: Upper division business standing and IS 217.

**IS 320 SYSTEMS ANALYSIS AND DESIGN (3-0-3)(F,S)**. Utilization of methods for working with users to analyze and develop business applications. The life cycle of development, project management, process of interface with users, documentation, database interface and productivity tools will be discussed. PREREQ: Upper division business standing, IS 217 and IS 221.

**IS 361 BUSINESS APPLICATIONS PROGRAMMING (COBOL)(3-0-3)(S)**. Processing techniques and development of programs and systems for batch and interactive environments using features including sequential files, random access files, input editing and advanced topics. PREREQ: Upper division business standing and IS 221.

**IS 380 TELECOMMUNICATIONS (3-0-3)(F)**. Discussion of telecommunications technology and managerial issues in a business environment. Topics include basic concepts of data communication, related hardware and software technology, standards and protocols, local and wide area networks, network management, common carrier services and emerging trends. Emphasis is on basic concepts, applications and telecommunications management rather than details of hardware and software technology. PREREQ: Upper division business standing.

**IS 430 ADVANCED SYSTEMS DEVELOPMENT (3-0-3)(S)**. Use of computer-aided software development techniques including CASE, fourth generation languages and other development tools to facilitate systems development and implementation. PREREQ: Upper division business standing and IS 320.

**IS 455 DECISION SUPPORT SYSTEMS (3-0-3)(F)**. Topics will include the decision-making process, fundamentals of decision support systems technology and related systems. Students will be expected to develop an application that supports managerial decision makers. PREREQ: Upper division business standing and IS 320.

**IS 490 INFORMATION RESOURCE MANAGEMENT (3-0-3)(S)**. A capstone course covering the management of the information systems function. Topics include the technical, operational, developmental and support functions, acquisitions and management of resources, organizational structure, human resource issues, end-user computing, ethical and legal considerations and managing emerging technologies. PREREQ: Upper division business standing and IS 320.

**IS 493 INTERNSHIP (Variable Credit)(F,S)**. Field learning in an MIS environment under supervision of both a manager and professor. PREREQ: Upper division business standing and IS 320 (or concurrent enrollment).

**PR PRODUCTION AND OPERATIONS MANAGEMENT**

**Lower Division**

**PR 207 STATISTICAL TECHNIQUES FOR DECISION MAKING I (3-0-3)(F,S)**. Designed to provide an understanding and working knowledge of the concepts and techniques pertaining to basic descriptive and inferential statistics. Business applications of such statistical concepts as the Binomial and normal distributions, interval estimates and hypothesis testing are covered. PREREQ: M 108 or equivalent.

**PR 208 STATISTICAL TECHNIQUES FOR DECISION MAKING II (3-0-3)(F,S)**. This course provides extensions to basic statistical inference with an emphasis on using the techniques for business decision making. Typical topics covered include analysis of variance, simple and multiple linear regression, forecasting and nonparametric statistics. Established computer software is used, when appropriate, to assist in the learning process. PREREQ: PR 207.

**Upper Division**

**PR 345 PRINCIPLES OF PRODUCTION MANAGEMENT (3-0-3)(F,S)**. Management of the production function: analysis, design, planning and control of production processes, plant location, design and layout, scheduling, time and motion study, quality control, material acquisition and systems theory. Quantitative techniques are considered. PREREQ: PR 207 and Upper division business standing.

**PR 366 MANAGEMENT SCIENCE MODELS (3-0-3)(F,S)**. Management science/operations research tools are presented with an emphasis on applications and how the tools assist a decision maker. Typical topics covered include linear programming, network planning models, basic inventory control, waiting line management and decision making under uncertainty. PREREQ: MG 301, PR 345 and Upper division business standing.

**PR 380 THE TOOLS OF QUALITY (3-0-3)(S)**. This course will introduce the basic tools of quality and the quality planning tools which are widely used by organizations in the U.S. and around the world. Emphasis will be placed on understanding how the tools are implemented to aid in quality improvement. Examples of successful and unsuccessful applications will be presented. PREREQ: PR 345, Upper division business standing and PERM/INST.

**PR 381 QUALITY MANAGEMENT IMPLEMENTATION (3-0-3)(F)**. This course focuses on planning, assuring, controlling and managing the quality efforts within a manufacturing or service organization. The critical elements of implementing a successful quality management program are discussed. Among the topics addressed in this course are current quality thought, Kaizen techniques, benchmarking, quality maturity analysis, supplier/customer partnering, value-adding management and quality leadership issues. The course will draw heavily from the experiences of successful organizations from throughout the world. Case studies will be utilized. PREREQ: PR 345, Upper division business standing or PERM/INST.

**PR 408 MANUFACTURING SYSTEMS (3-0-3)(F)**. This course extends the topics offered in the survey Principles of Production course. Course will further develop the concepts and theory behind manufacturing resource management, including the master schedule, bill of materials and inventory records system. Other major topics include Just-in-Time manufacturing, computer-aided manufacturing, flexible manufacturing systems and techniques used by international competitors. PREREQ: MG 301, PR 345 and Upper division business standing.

**PR 409 MANAGEMENT OF SERVICE OPERATIONS (3-0-3)(S)**. The course applies the principles of production management to service operations. The problems associated with service operations will be considered and contrasted to those of production systems. Special demands for organization and control will be reviewed as well as the identification of elements of success. The case method will be used extensively. PREREQ: MG 301, PR 345 and Upper division business standing.

**PR 416 PURCHASING AND DISTRIBUTION SYSTEMS (3-0-3)(F)**. This course introduces concepts associated with purchasing and distribution in manufacturing and service systems. Typical purchasing topics will include supplier selection, legal and ethical considerations, order size and timing. Typical distribution topics will include transportation modeling, carrier selection, materials handling and flow analysis. PREREQ: MG 301, PR 345 and Upper division business standing.

**PR 493 INTERNSHIP (Variable Credit)(F,S)**. Field learning in a Production and Operations Management environment under supervision of both a manager and a professor. PREREQ: Upper division business standing.
Department of Construction Management and Engineering

Technology Building, Room 240
Telephone (208) 385-3764

Chair and Professor: Marvin Gabart; Professors: Affleck, Parks; Associate Professors: Guarino, Haefer; Assistant Professors: Gains, Kuhr, Mason.

Degrees Offered

- B.S. in Construction Management
- Lower Division Engineering for Civil, Mechanical, Chemical, Manufacturing and other Engineering disciplines.
- B.S. degrees in Electrical Engineering and Computer Engineering are available on the Boise State University campus from the University of Idaho.

Degree Requirements

CONSTRUCTION MANAGEMENT PROGRAM
Bachelor of Science Degree
Accredited by the American Council for Construction Education (ACCE).

The objective of the Construction Management program is to provide an education of the highest possible quality, given current constraints, in an accredited program with studies in engineering, business, communications, mathematics, physics, liberal arts and construction management so that the constructor can intelligently relate to and coordinate the efforts of owners, engineers, architects, craftsmen, contractors and other professionals to provide society with construction services of skill, responsibility and integrity.

FRESHMAN

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<td>Materials &amp; Methods of Architecture AR 290</td>
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<td>Engineering Fund &amp; Computer Programming EN 107</td>
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<td>Intro to Management of Construction CO 240</td>
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SOPHOMORE

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<td>Engineering Measurements EN 216</td>
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<td>Intro to Financial Accounting AC 205</td>
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<td>The Legal Environment of Business GB 202</td>
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<td>Principles of Microeconomics EC 205</td>
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<tr>
<td>Construction Blue Print Communications CO 235</td>
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<td>Contracts and Specifications CO 246</td>
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<td>Intro to Mechanics EN 205</td>
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<td>Intro to Managerial Accounting AC 206</td>
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<td>Principles of Macroeconomics EC 206</td>
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JUNIOR

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<td>Mechanical installations CO 351</td>
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<td>Cost Estimating and Bidding CO 370</td>
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<td>Statistical Techniques for Decision Making I PR 207</td>
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<td>Finance: FI 303 or EN 382</td>
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<td>Mechanics of Materials EN 306</td>
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<td>Soil Mechanics and Foundation Construction CO 330</td>
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<td>Soil Mechanics Lab GO 305</td>
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<td>Electrical Installations CO 352</td>
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<td>Construction Operations &amp; Improvement CO 374</td>
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<td>Concrete &amp; Formwork Construction CO 410</td>
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<td>Project Scheduling &amp; Control CO 417</td>
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<td>Fund of Speech Communication CM 111</td>
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<td>Project Management CO 475</td>
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<td>Project Controls CO 460</td>
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<td>Organizational Behavior MG 401</td>
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<tr>
<td>General electives</td>
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Total 19

1. All construction management majors must complete at least 57 credits and have a cumulative grade point average of 2.40 or better before being admitted to any upper division (number 300 and above) business or construction management classes.
2. All construction management classes take several field trips during the semester (scheduled on Friday afternoons).
3. No more than 32 credits may be taken from the College of Business.

CONSTRUCTION MANAGEMENT MINOR

Engineering Graphics EN 108          | 2       |
Construction Blue Print Communication CO 235 | 2       |
Intro Management of Construction CO 240 | 3       |
Contracts & Specifications CO 246   | 3       |
Cost Estimating & Bidding CO 370    | 3       |
Construction Operations & Improvements CO 374 | 2   |
Project Scheduling CO 417           | 3       |

Total 19

Recommended Engineering Programs

LOWER DIVISION ENGINEERING MAJOR

All of the following courses will transfer to either the University of Idaho or Idaho State University as well as to most other engineering colleges. BSU offers at least 50 of the 130 or more credits required for an engineering degree in nearly all of the engineering branches. Therefore, it is possible to complete a degree in approximately three semesters after transferring from Boise State University. Bachelor of Science (B.S.) degrees in electrical engineering and computer engineering are available on the Boise State University campus through the University of Idaho. Contact your BSU academic engineering advisor or the University of Idaho director of engineering education for details. The upper division (junior & senior) classes offered through the University of Idaho are listed in this section of the catalog immediately following BSU's lower division listing.

FRESHMAN YEAR

*English Composition E 102.......................... 3
**Engineering Fund & Computer Programming EN 107... 3
**Calculus & Analytical Geometry M 204-205 ......... 9
College Chemistry & Lab C 131-132 .................. 4
Humanistic Social electives (see advisor) ........ 3-6

Total 22-28

* Depending on English Placement exam or ACT/SAT score, may have to take E 101.
** Computer Engineering majors take Intro to Computer Science CS 125 or EN 107.
*** Depending on Math Placement exam or ACT/SAT score, may have to take M 101.
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<tr>
<td>Mechanics, Waves &amp; Heat Ph 211</td>
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<tr>
<td>Materials &amp; Energy Balances CH 223 UI@BOI</td>
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<tr>
<td>Thermodynamics &amp; Heat Transfer EN 320</td>
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<td>Differential Equations M 331</td>
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<tr>
<td>Electricity, Magnetism &amp; Optics PH 213</td>
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<td>Humanistic-Social elective (see advisor)</td>
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<td>Prin Macroeconomics EC 206 (Hum-Soc elective)</td>
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<tr>
<td>Electrical Engineering Circuits EN 227</td>
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<td>Fluid Mechanics EN 301</td>
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<td>Physical Chemistry &amp; Labs C 321, 323</td>
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**Remaining upper division course requirements, see University of Idaho Engineering in Boise Program in this catalog.

Civil Engineering

**FRESHMAN**

Common year...........................................22-28
Engineering Graphics EN 108........................................2
College Chemistry C 133-134........................................4
Mechanics, Waves & Heat PH 211....................................4
Total..............................................32-38

**SOPHOMORE**

Calculus & Analytic Geometry M 206................................4
Electrical Engineering Circuits EN 227..................................3
Mechanics/Statics EN 205...........................................3
Engineering Measurements EN 216.......................................3
Biological Science elective...........................................3
Total..............................................**89-96**

**Remaining upper division course requirements, see University of Idaho Engineering in Boise Program in this catalog.

Chemical Engineering

**FRESHMAN**

Common year...........................................22-28
Engineering Graphics EN 108........................................2
College Chemistry & Lab C 133-134....................................4
Total..............................................28-34

**SOPHOMORE**

Organic Chemistry & Labe C 317-320....................................5
Mechanics/Statics EN 205...........................................3
Total..............................................19 13-15

**Remaining upper division course requirements, see University of Idaho Engineering in Boise Program in this catalog.

Computer Engineering

**FRESHMAN**

Common year...........................................22-28
Discrete & Foundational Mathematics M 156..................................4
Intro to Computer Science II CS 127....................................4
Total..............................................30-36

**SOPHOMORE**

Differential Equations M 331...........................................3
Mechanics, Waves & Heat + Lab PH 211, 212..................................3
Systems & Circuits I & II EN 221, 223....................................5
Low-Level Programming CS 223...........................................3
Linear Algebra M 301..............................................4
Electricity, Magnetism & Optics Lab PH 213-214............................5
Data Structures & Algorithms CS 242....................................4
Programming in "C" in the Unix Environment CS 227............................4
Total..............................................19 18
### Additional available courses:

- **Humanistic-Social electives (see advisor)**
- **Programming Languages CS 354**
- **Technical Writing E 202**
- **Fund of Statistics M 361**
- **Operating Systems CS 353**

**Total 86-92**

**Remaining upper division course requirements, see University of Idaho Engineering in Boise program in this catalog.**

### Electrical Engineering

#### FRESHMAN

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**Total 24-30**

#### SOPHOMORE

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**Total 82-88**

**Remaining upper division course requirements, see University of Idaho Engineering in Boise program in this catalog.**

### Geological Engineering

#### FRESHMAN

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**Total 24-30**

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**Total 81-87**

**Remaining upper division course requirements, see University of Idaho Engineering in Boise program in this catalog.**

### Manufacturing Engineering

#### FRESHMAN

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**Total 24-30**

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<td>Mechanics, Waves &amp; Heat &amp; Lab PH 211-212</td>
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**Total 84-90**

**Remaining upper division course requirements, see University of Idaho Engineering in Boise program in this catalog.**

### Mechanical Engineering

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**Total 29-35**

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**Total 84-90**

**Remaining upper division course requirements, see University of Idaho Engineering in Boise program in this catalog.**

### Metallurgical Engineering

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<tr>
<td>Differential Equations M 331</td>
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<tr>
<td>Mechanics/Statics EN 205</td>
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<tr>
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<tr>
<td>Calculus &amp; Analytic Geometry M 206</td>
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<tr>
<td>Mechanics of Materials EN 306</td>
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<tr>
<td>Fluid Mechanics EN 301</td>
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Additional available courses:
- Humanistic-Social electives (see advisor) .................................................. 9
- Technical Writing E 202                                                ........................................... 3
- Physical Chemistry & Lab C 321-324                                   ........................................... 6
- Math elective                                                          ........................................... 3
- Total                                                                 82-88

### MINEING ENGINEERING

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Additional available courses:
- Humanistic-Social electives (see advisor) .................................................. 9
- Technical Writing E 202                                                ........................................... 3
- Physical Chemistry & Lab C 321-324                                   ........................................... 6
- Math elective                                                          ........................................... 3
- Total                                                                 78-84

### GENERAL ENGINEERING (IDAH0 STATE)

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</table>
CO 374 CONSTRUCTION OPERATIONS AND IMPROVEMENTS (3-0-2)(S). The use of statistical sampling, time and motion studies, time-lapse photography, crew balance analysis, flow and process charts to improve methods, labor efficiency, equipment and materials usage, safety and employee motivation. Field trips are required. PREREQ: CO 240.

CO 381 BUILDING PROJECT ESTIMATING (1-3-2)(S). The estimating and bidding of complete Building projects; including quantity takeoffs, categorizing costs, pricing, and markups; use of computers as an estimating tool, conceptual and range estimating; engineering, fast-track, target and equity sharing project estimates. PREREQ: CO 367.

CO 382 HEAVY AND HIGHWAY PROJECT ESTIMATING & BIDDING (1-3-2)(S). The estimating and bidding of complete heavy or highway projects; including quantity takeoffs, categorizing costs, pricing, and markups; use of computers as an estimating tool, conceptual and range estimating; engineering, fast-track, target and equity sharing project estimates. PREREQ: CO 367.


CO 420 REINFORCED CONCRETE AND STEEL CONSTRUCTION (3-0-3)(F/S). The structural analysis and construction of reinforced concrete and structural steel systems; including vertical and horizontal loads on beams and columns; bending, shears, compressive and tensile stresses and deflection analysis and construction methods. PREREQ: EN 306.

CO 441 CONSTRUCTION SAFETY AND SUPERVISION (1-3-2)(F/S). The class provides a field opportunity for senior students to plan, provide safety procedures, quality control, supervision, monitoring and inspection of construction operations. Emphasis is placed on the safety plan and safety procedures. PREREQ: CO 141.

CO 460 PROJECT COST CONTROLS (3-0-3)(S). Theory of cost accounting and cost control, emphasis on cost determination as a tool of management and project cost control. Includes bidding, budgeting and developing project cost record keeping system for managing cash, receivable, payroll and subcontractors. PREREQ: AC 206 and CO 370.

CO 475 PROJECT MANAGEMENT (3-0-3)(S). Application of professional construction management techniques such as site investigation, contractor and subcontractor qualifications, conceptual estimating and budgeting, value engineering, quality assurance, business development, risk management and ethics as applied to the management of construction projects. PREREQ: CO 240 and CO 246.

CO 493 INTERNSHIP. Cooperative education/internship in construction management provides practical, on-the-job experience in blueprint reading, material takeoffs, estimating, equipment management and project planning.

EN ENGINEERING

EN 100 ENERGY FOR SOCIETY (3-2-4)(AREA III). A general interest course having no prerequisite. A basic understanding of energy and how it has been put to use is developed to promote a better understanding of our present technological society with its energy, environmental, social, and political problems. Alternative as well as conventional energy solutions will be studied.

EN 101 TECHNICAL DRAWING (2-2-2)(F/S). A basic course in technical drawing covering sketching, orthographic projection, sectioning, dimensioning, pictorial drawing and introduction to microcomputer drafting systems.

EN 102 COMPUTER FUNDAMENTALS FOR TECHNOLOGY (3-0-3)(F/S). Introductory course in use and applications of the computer in technology. Topics covered include DOS, word processing, simple programming, spreadsheets and problem solving with PC Solve. Also general orientation to careers in technology. COREQ: M 108 or higher level mathematics.

EN 104 (CS 124) DIGITAL COMPUTER PROGRAMMING (2-0-2)(F/S). An introduction to FORTRAN programming principles and logic including input-output, flow charting, handling arrays and subprograms, all applied to problem solving. PREREQ: M 106 or M 108.

EN 107 ENGINEERING FUNDAMENTALS AND COMPUTER PROGRAMMING (3-0-3)(F/S). Overview of the engineering profession. Introduction to engineering analysis and problem solving using Pascal and Fortran languages plus spreadsheets. PREREQ: M 111 or equivalent.

EN 108 ENGINEERING GRAPHICS (2-2-2)(F/S). Engineering graphical analysis and graphic transmission of information including use of micro computer design and drafting systems. PREREQ: M 106 or equivalent mathematics background.

EN 205 MECHANICS/STATICS (3-0-3). Covers basic statics including equilibrium, analysis of trusses, frames and machines, centroids, static friction and moments of inertia. PREREQ: M 204 or PERM/INST.

EN 206 MECHANICS/DYNAMICS (3-0-3)(S). Kinematics and kinetics of both particles and rigid bodies using the concepts of force, mass acceleration, work and energy plus impulse and momentum for general plane motion. PREREQ: EN 205.

EN 215 BASIC SURVEYING (1-3-2)(F). A basic course in surveying for non-engineering majors. Course covers use of transit, level, plane table and computations related to evaluation, traverse and stadia surveys. PREREQ: M 111 or equivalent.

EN 216 ENGINEERING MEASUREMENTS (2-3-3)(S). Theory and practice; manipulation of units for horizontal and vertical distance measurements and angle measurements; types and distribution of errors; route and land surveying; construction surveying introduction to photogrammetry. PREREQ: M 111 or equivalent.

EN 221 SYSTEMS AND CIRCUITS I (3-3-4)(F). The fundamental course in electrical engineering which provides an introduction to electrical circuits and basic network analysis. Topics covered are simple resistive, capacitive and inductive circuits, network theorems and circuit analysis methods. There is one three-hour laboratory per week. COREQ: M 331.

EN 223 SYSTEMS AND CIRCUITS II (4-3-5)(S). A continuation of EN 221 extending into second order circuits, the use of phasors, AC steady-state analysis and frequency-domain analysis, polyphase circuits, transformers, filters and Fourier analysis. PREREQ: EN 221 and M 205.

EN 227 ELECTRICAL ENGINEERING CIRCUITS (3-0-3)(F). A survey course in circuit analysis for engineering majors other than electrical. Topics covered include D.C. and A.C. circuit analysis using the basic network theorems and analysis methods. PREREQ: M 204.

EN 230 DIGITAL CIRCUITS I (3-0-4)(F). An introduction to number systems, Boolean algebra, logic gates, Karnaugh mapping, combinational circuits, registers and arithmetic operations. PREREQ: Math equivalent to M 106, 106, 111; offered every odd numbered year.

EN 293 INTERNSHIP (Variable Credits). Cooperative education/internship in engineering. Provides on-the-job engineering experience.
Counseling Department
Education Building, 6th Floor
Phone (208) 385-1661

Chair and Associate Professor: Jim Nicholson; Associate Professor: Downs.

The counseling department houses both academic and applied counseling programs. On the academic side, it offers a variety of undergraduate classes as well as a Master of Arts program in school counseling. The latter is a sixty semester hour program with a 700 hour practicum/intern sequence designed to prepare counselors for both elementary and secondary schools.

The counseling and testing center is an accredited unit that offers a comprehensive program of counseling services. These services range from crisis intervention and brief counseling for personal and career concerns to a variety of outreach workshops and groups that address a range of adjustment issues. The center also administers a broad range of standardized tests (i.e. NTE, GRE, MCAT, CLEP and others). Any student enrolled for six or more credit hours is eligible for the services offered through this center.

Department of Criminal Justice Administration
Library Building, Room 218
Telephone (208) 385-3406

Chair and Associate Professor: Robert Marsh; Professor: Walsh; Associate Professors: Foraker-Thompson, Hopfenbeck; Assistant Professor: Stohr.

Degrees Offered
- AS, BA and BS in Criminal Justice Administration

Department Statement
The department is central to the mandate by the State Board of Education that Boise State be the lead institution in Social Sciences and Public Affairs. Our central role in this mandate is reflected in the dedication of the faculty to the creation of an intellectual environment crucial to the development of skills for critical analysis, problem solving and full participation in public affairs. The department offers a bachelor's and an associate degree in Criminal Justice Administration, participates in the Canadian Studies program and graduate courses under the MA or MS in Interdisciplinary Studies.

Upper Division Admission
Administrator: Dr. Robert Marsh
Library Building, Room 220-D, Telephone (208) 385-3407

The Department of Criminal Justice Administration requires admission to upper division standing by application of all Criminal Justice Administration majors. To be admitted as a major to upper division, a student must meet the following criteria prior to enrolling in 300 level Criminal Justice Administration courses. Criminal Justice majors enrolling in upper division Criminal Justice courses without approved upper division standing will be withdrawn administratively from the courses. Upper division nonmajors will be permitted to enroll in specific courses with a documented showing of special need and permission of the instructor.

Minimum Criteria for Upper Division Admission
1. Admission to Boise State University.
2. Successful completion of a minimum of 32 credits of the lower division university core including English E 101 and E 102, Sociology - SO 101, Psychology - P 101, Political Science - PO 101, Communications - CM 111, three credits of History and eight credits of Area III Science and/or Mathematics.
3. All required lower division Criminal Justice courses must be completed with no less than a 'C' average.
4. Cumulative GPA of 2.5 or higher at the time of application.
5. Completion of at least 58 credits - including course work in progress at the time of application.
6. Selection of a degree emphasis area.
7. Submission of a completed application and current transcript at least two weeks prior to the preregistration period in which upper division course work will be requested.
8. Attainment of a passing score on the departmental qualifying examination covering material in CR 101 - Introduction to Law and Justice, CR 201 - Introduction to Criminal Justice Administration and CR 215 - Police in the United States and CR 260 - Victims of Crime. This examination will be administered each semester prior to the preregistration period.
Transfer Students: Students transferring into the Boise State University Criminal Justice program from other institutions will be evaluated by the departmental chair on an individual basis. Failure to meet the above minimum requirements will result in a delayed entrance into upper division courses until the deficiencies have been addressed.

Degree Requirements

CRIMINAL JUSTICE ADMINISTRATION
Bachelor of Arts Degree
Bachelor of Science Degree

The Bachelor of Arts/Science degree in Criminal Justice Administration offers a choice of four professional areas of emphasis: Law Enforcement, Courts-Law, Corrections-Counseling and Research.

A student major is required to complete the core courses plus the courses within a desired area of specialization.

UNIVERSITY CORE: Credits
English Composition E 101-E 102 ........................................ 6
Arts & Humanities (Area I) ............................................. 12
(B.A. must complete three credits of Area I Core Literature and Area II History.)
Fundamentals of Speech Comm CM 111 (Area II) .......................... 3
General Psychology P 101 (Area II) .................................... 3
Intro Sociology SO 101 (Area II) ....................................... 3
American National Government PO 101 ............................... 3
Science or Mathematics (Area III) .................................... 12

CRIMINAL JUSTICE CORE:
Computer Applications in Social Science SO 210 .......................... 4
Introduction to Law & Justice CR 101 ................................... 3
Introduction to Criminal Justice Administration CR 201 .................. 3
Police in the United States CR 215 ..................................... 3
Victims of Crime CR 280 ................................................ 3
Administration of Justice CR 301 ...................................... 3
Public Policy & Criminal Behavior CR 315 .............................. 3
The Juvenile Justice System CR 317 ................................... 3
Criminal Law CR 321 .................................................... 3
Contemporary Correctional Theory & Practice CR 362 ................. 3
Criminal Justice Management CR 363 ................................ 3
Research Statistics CR 426 .............................................. 3
Senior Tutorial CR 489 .................................................. 3
Senior Seminar in Criminal Justice CR 498 .......................... 3

SPECIALTY AREA COURSES
1. LAW ENFORCEMENT
Law of Criminal Evidence CR 275 .................................... 3
Law of Arrest, Search & Seizure CR 276 ............................ 3
Comparative Criminal Justice Administration CR 451 .......... 3
or
Comparative Canadian Justice CR 452 ............................. 3
Contemporary Issues in American Policing CR 461 ............... 3
Field Practicum CR 490 ................................................ 6
Electives to total 128 ................................................. 22*
(Including 3 credits of upper division)

2. COURTS/LAW
Law of Criminal Evidence CR 275 .................................... 3
Law of Arrest, Search & Seizure CR 276 ............................ 3
Methods of Legal Research CR 350 .................................. 3
Judicial Administration & Court Management CR 381 .......... 3
Comparative Criminal Justice Administration CR 451 .......... 3
or
Comparative Canadian Justice CR 452 ............................. 3
Constitutional Law PO 351 ........................................... 3
Field Practicum CR 490 ................................................ 6
Electives to total 128 ................................................. 16*

3. CORRECTIONS/COUNSELING
Corrections in the Community CR 331 ................................ 3
Interviewing & Counseling in Criminal Justice CR 340 ........... 4
Advanced Interview & Counsel in Criminal Justice CR 341 ...... 4
Upper division Criminal Justice Elective .............................. 3
Field Practicum CR 490 ................................................ 6
Electives to total 128 ................................................. 20*

4. RESEARCH
Methods of Legal Research CR 350 ................................. 3
Advanced Methods Criminal Justice Research CR 428 .......... 3
Comparative Criminal Justice Administration CR 451 .......... 3
or
Comparative Canadian Justice CR 452 ............................. 3
Upper division Criminal Justice Electives .......................... 3
Field Practicum CR 490 ................................................ 6
Electives to total 128 ................................................. 22*

*Three of these elective credits must be chosen from the disciplines of:
Anthropology** Geography** Music Social Work**
Art Geology** Philosophy Sociology**
Biology** History** Physical Science** Theatre Arts
Chemistry** Humanities Physics**
Communication** Literature Political Science**
Economics** Mathematics** Psychology**

NOTE: BACHELOR OF ARTS DEGREE may choose the three credits from any of the above disciplines except mathematics/natural sciences (Area III courses). BACHELOR OF SCIENCE DEGREE MAJORS may choose the three credits only from those disciplines marked with a double asterisk (**).

CRIMINAL JUSTICE
ASSOCIATE OF SCIENCE PROGRAM (TWO YEAR)

FRESHMAN

<table>
<thead>
<tr>
<th>Course Offerings</th>
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<tbody>
<tr>
<td>CR 101 INTRODUCTION TO LAW AND JUSTICE (3-0-3)(S). Study of basic issues of law as a means of social control including broader issues of social justice such as poverty, racism, sexism, alienation. Provides foundation for examining relevant critical issues in American Society.</td>
</tr>
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</table>

Sophomore Year

CR CRIMINAL JUSTICE ADMINISTRATION

Course Offerings

See page 4 for definition of course numbering system
CR 201 INTRODUCTION TO CRIMINAL JUSTICE ADMINISTRATION (3-0-3)(F). Philosophy, history, objectives and functions of the criminal justice system as a social institution. The relationship of this system to society; general overview of the administration of justice.

CR 215 POLICE IN THE UNITED STATES (3-0-3)(F). A study of police behavior in urban and rural areas with an emphasis on the police response to community change, attitudes, special interest groups and minority relations. PREREQ: CR 201.

CR 275 LAW OF CRIMINAL EVIDENCE (3-0-3)(F). Presentation of the laws and rules of evidence, burden of proof, exclusionary rule, presumption, opinion evidence and leading court cases involving the presentation and acceptability of evidence. Witness examination procedures and related legal problems are presented. PREREQ: CR 201.

CR 280 VICTIMS OF CRIME (3-0-3)(S). Study of the role of victims of crime in the justice system and their treatment by different criminal justice agencies, national and state data on victimization by types of crime, psychological trauma suffered by victims of violent crimes and paths to recovery, programs available to victims and victim-related legislation.

CR 290 (SO 290) SOCIAL CONFLICT AND PEACEMAKING (3-0-3)(F). (Cross listed as SO 290.) An introductory survey course covering broadly the kinds of conflict that occur between person, groups, organizations and societies, with attention to why these conflicts arise, a range of peaceful solutions to conflicts using nonviolent, nonadversarial methods. The course ranges from inner personal conflict and ends with the international arms race. This course may be taken for either CR or SO credit but not both.

Upper Division

CR 301 ADMINISTRATION OF JUSTICE (3-0-3)(F). The administration of criminal justice from arrest to sentencing. Federal and state rules of criminal procedure and laws of evidence as they apply and affect constitutional due process. PREREQ: CR 201.

CR 315 PUBLIC POLICY AND CRIMINAL BEHAVIOR (3-0-3)(F). Explores the biological, psychological and sociological theories of crime and criminality. Explores the policy options for the criminal justice system and society. PREREQ: Upper division Criminal Justice Administration standing.

CR 317 THE JUVENILE JUSTICE SYSTEM (3-0-3)(S). Study of the philosophy and function of the juvenile court, court procedures and laws, theories of causation and intervention strategies for juveniles. Includes an evaluation and analysis of law, institutions, policies and practices of the court since inception. PREREQ: Upper division Criminal Justice Administration standing.


CR 331 CORRECTIONS IN THE COMMUNITY (3-0-3)(S). Development, organization, operation and results of post-conviction release programs. Traditional court and institutional supervised probation and parole, work release, halfway houses, diversion, furlough concept and various community/social agency rehabilitative programs of both traditional and innovative nature. PREREQ: CR 201 or SO 101.

CR 340 INTERVIEWING AND COUNSELING IN CRIMINAL JUSTICE (3-2-4)(F). Theory and skills involved in effective communication, interviewing and counseling for criminal justice personnel. Basic communication skills and process of problem solving with criminal justice clients emphasized. PREREQ: Upper division Criminal Justice Administration standing.


CR 350 METHODS OF LEGAL RESEARCH (3-0-3)(F). An introduction to methods of legal research with emphasis on the utilization of law library resources, private and government organizations as courses of legal information and on the formulation of briefs, memoranda and other documents appropriate to legal practice. PREREQ: Upper division Criminal Justice Administration standing.

CR 362 (SO 362) CONTEMPORARY CORRECTIONAL THEORY AND PRACTICE (3-0-3)(F). (Cross listed SO 362). The historical development, processes and methods of operating the adult correctional system. Detailed study of the philosophy and development of treatment strategies in local, state and federal correctional institutions. This course may be taken for CR or SO credit but not both. PREREQ: Upper division Criminal Justice Administration standing.

CR 363 CRIMINAL JUSTICE MANAGEMENT (3-0-3)(F). An overview of organizational theory and administrative behavior in criminal justice agencies. Effects of leadership, technology, information systems, decision-making, court cases, personnel policies, budgeting and planning on the justice system are analyzed. PREREQ: Upper division Criminal Justice Administration standing.

CR 381 JUDICIAL ADMINISTRATION AND COURT MANAGEMENT (3-0-3)(S). Study of practices and trends in court management and judicial administration; court personnel, selection, training and evaluation. Examination of modern technology in the management of judicial administration. PREREQ: CR 301, Upper division Criminal Justice Administration standing.


CR 428 ADVANCED METHODS OF CRIMINAL JUSTICE RESEARCH (3-0-3)(S). Advanced methods of research and analysis in criminal justice with emphasis on designing and managing research projects. Student will design and conduct their own research project. PREREQ: CR 426.

CR 451 COMPARATIVE CRIMINAL JUSTICE ADMINISTRATION (3-0-3)(S). An analysis and comparison of law enforcement systems at the federal, state and local levels and international systems. PREREQ: CR 301.

CR 452 COMPARATIVE CANADIAN JUSTICE (1-6-3)(S). An analysis and comparison of U.S.-Canadian criminal justice systems at all levels and of the U.S. Constitution versus the Canadian Charter of Rights and Freedom. Requires classroom attendance at the final six weeks of CR 451 and residence at the University of British Columbia during the two weeks following final examination week. Either CR 451 or CR 452 satisfy applicable graduation requirements in Criminal Justice. PREREQ: CR 301 and CR 362, or PERM/INST. Even numbered years only.

CR 461 CONTEMPORARY ISSUES IN AMERICAN POLICING (3-0-3)(S). Study and discussion of the major contemporary issues facing the modern police organization. Utilization of knowledge gained in CR 362 to address specific areas of enforcement at the local, state and federal levels of government. Major areas of enforcement concerns involving drugs, street gangs and increased use of firearms. PREREQ: Upper division Criminal Justice Administration standing, CR 363.

CR 489 SENIOR TUTORIAL (3-0-3)(F,S). Directed research in relevant contemporary issues in Criminal Justice and Criminology. Research proposal will be submitted to and approved by Criminal Justice faculty prior to the initiation of the project. The culmination of the course will be the submission and presentation of an appropriate written project paper. PREREQ: Senior standing in Criminal Justice Administration.

CR 490 FIELD PRACTICUM (V-V-6). Student placement in selected criminal justice agencies with assigned duties of regular personnel. Relevant research project required. Weekly seminar meetings with instructor to review research and agency progress. Required of all BA/BS students without one year of full time criminal justice experience. PREREQ: Upper division Criminal Justice Administration standing.

CR 498 SENIOR SEMINAR IN CONTEMPORARY CRIMINAL JUSTICE PROBLEMS (3-0-3)(S). Exploration of current and anticipated critical issues and problems in the criminal justice system. PREREQ: CR 201, senior Criminal Justice Administration standing or PERM/INST.

Graduate

See Graduate College Catalog for course descriptions.