Minutes of the University Curriculum Committee
Meeting of 11 April 2002
Brewster B-104

In attendance: D. Knickerbocker, T. Huener, G. Lapicki, B. Markowski, R. Mitchelson, E. Smith, R. Taylor

Excused: D. Batie, S. Estes

I. The Chair convened the meeting at 2:00, making apologies for Batie and Estes, and thanked the latter for substituting for him during his recent illness.

II. Prof. Charles Singhas presented new course BIOL 4999 and change to catalogue description of BS degree. Mitchelson moved approval, Lapicki seconded. The motion passed unanimously.

III. Prof. David Lawrence presented the unbanking of GEOL 3200, changes to prerequisites of 3200, 3201, 3300, 3301 3201; Revision of BS degree requirements. Taylor moved approval, Markowski seconded. The motion was unanimously approved.

IV. Profs. Li and Sargent presented new courses CHEM 1021, 2301, 3301; revision of BS degree, change in catalogue description of BA; change in course description of 4505, 4506, 4507; and the banking of 3860 and 3561. Lapicki moved approval pending a letter of support by CTE for CHEM 2301 and 3301, Taylor seconded. The motion passed unanimously.

V. Prof. Anthony Laker presented revisions to the Interdisciplinary Human Studies concentration in Exercise and Sports Science. Huener moved approval, Markowski seconded. The motion passed unanimously.

VI. Profs. Felts and Denning presented new HLTH courses 2500, 3500, 3501 and 3502. Markowski moved approval, Taylor seconded. The motion was unanimously approved.

VII. Prof. Cheryl Estes presented catalogue changes to the MRFS degree, new course RCLS 4121, the unbanking of RCLS 3301 and 3302, and the unbanking and title change of 3202. Lapicki moved approval, Markowski seconded. The motion passed unanimously.

VIII. The annual report was discussed and approved with amendments.

IX. The meeting adjourned at 3:50.

These minutes were approved electronically on 4-12-02.

Respectfully submitted,
Dale Knickerbocker, Chair

University Curriculum Committee
Catalog Copy for April 11, 2002

Revision to 2/28/02 UCC catalog minutes:
P. 289. On March 19 the Faculty Senate struck GE:SC credit for EHST 2110 and EHST 2111.

2110. Introduction to Environmental Health Sciences (3) (F,S) Principles of environmental health practices. Emphasis on air quality, food supply, industrial hygiene, and solid and hazardous waste disposal.

2111. Introduction to Environmental Health Sciences Laboratory (1) (F,S) 3 lab hours per week. P/C: EHST 2110. Laboratory and field techniques in principles of environmental health science practices. Includes water and air quality; noise; food, radiation, and biological safety; and hazardous material.

Correction to 2/28/02 UCC catalog minutes:
P. 139. replace Degree changes for BA in Art and BFA in Art electives with the following text:

5. Art electives (to be taken outside the concentration) 12 s.h.

Electives may be in any Art prefix, including art history. Choose a minimum of 6 s.h. outside of the area of concentration; however, the 6 s.h. may not comprise two courses from the same area.
Choose at least 6 s.h. in art electives must be taken from each group listed below.

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**BFA IN ART**

4. Art electives (to be taken outside the concentration) 18 s.h.

Electives may be in any Art prefix, including art history. Choose a minimum of 6 s.h. outside of the area of concentration; however, the 6 s.h. may not comprise two courses from the same area.

Choose at least 6 s.h. in art electives must be taken from each group listed below.

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**College of Arts and Sciences**

**Department of Biology**

- **P. 262. Add new BIOL course**

4999. Senior Topics (1) (F)(S) 1 lecture hour per week. P: Senior biology major. A capstone course for biology majors summarizing the breadth of biological science, professional opportunities and assessment.

- **P. 84. Revise catalog description of B.S. degree in Biology**

**DEPARTMENT OF BIOLOGY**

Ronald J. Newton, Chairperson, BN-108 Howell Science Complex
Charles A. Singhas, Director of Undergraduate Studies, BN-108C Howell Science Complex

**ADMISSION REQUIREMENTS**

**In order to declare a major in biology or biochemistry, a student must satisfy General education as stated in the catalog for transfer to departments in the College of Arts and Sciences and must have a minimum cumulative GPA of 2.0 in all biology and chemistry courses below the 3000 level.**

**CORE CURRICULUM**

The core curriculum in biology is intended to give all biology majors a background in molecular biology, diversity, environmental biology, evolution, ecology and genetics. BIOL 1100, 1200, 2250, 2251, 2300 constitute the core curriculum. A maximum of 6 s.h. of credit in BIOL 2350, 4500, 4514, 4550-5995 may be counted for credit toward a BS in biology or a BSB in biochemistry. A choice of electives permits a student to pursue in depth an area or areas of particular interest. Lecture courses having laboratory components that carry independent credit may or may not be required as corequisites (See appropriate catalog descriptions). Laboratory components carrying no credit are corequisites. Minimum degree requirement is 126 s.h. of credit.

**BS IN BIOLOGY**

https://author.ecu.edu/cs-acad/fsonline/cu/cu4_021.cfm
1. General education (See Section 6, Undergraduate Studies, Requirements for Baccalaureate Degree Programs.), including those listed below. 42 s.h.
CHEM 1150, 1151. General Chemistry and Laboratory I (3,1) (F,S,SS) (GE:SC) (P: Chemistry placement test or passing grade in CHEM 0150; P/C: MATH 1065)
CHEM 1160, 1161. General Chemistry and Laboratory II (3,1) (F,S,SS) (GE:SC) (P: CHEM 1150, 1151; RC: MATH 1075 or 1085)
MATH 1065. College Algebra (3) (F,S,SS) (GE:MA) (P: Appropriate score on mathematics placement test)

2. Core. 45 16 s.h.
BIOL 1100, 1101. Principles of Biology I (4,0) (F,S,SS) (GE:SC)
BIOL 1200, 1201. Principles of Biology II (4,0) (F,S,SS) (GE:SC)
BIOL 2250. Ecology (3) (F,S,SS) (P: BIOL 1100, 1101, 1200, 1201)
BIOL 2251. Ecology Laboratory (1) (F,S,SS) (P: BIOL 1100, 1101, 1200, 1201; C: BIOL 2250)
BIOL 2300. Principles of Genetics (3) (F,S,SS) (P: 2 BIOL courses)
BIOL 4999. Senior Topics (1) (F, S) (P: Senior standing, biology major)

3. Recommended electives. 24 24 s.h.
The following elective areas are recommended to guide students in choosing biology electives consistent with their academic goals. Students may concentrate in one of the specified areas, below, or choose a more general course of study. (BIOL 3550, 4504, 4514, 4550, 5995 may be repeated only once. A maximum of 6 s.h. may be used toward biology electives.) A maximum of 6 s.h. of BIOL 3550, 4504, 4514, 4550, 5995 may be used toward biology electives without permission of Chair or Director of Undergraduate Studies.
Ecology/Environmental Biology:
Choose one from:
BIOL 3310, 3311. Cellular Physiology (4,0) (F,S,SS) (P: 1 organic CHEM or biochemistry course)
BIOL 3320. Principles of Animal Physiology (3) (F,S,SS) (P: 2000-level organic CHEM or biochemistry course)
BIOL 3321. Principles of Animal Physiology Laboratory (1) (C: BIOL 3320)

Choose one from:
BIOL 4200, 4201. Population and Community Ecology (4,0) (4200: WI) (S) (P: BIOL 2250, 2251, 2300; CHEM 1150, 1151; RP: CHEM 1160, 1161; MATH 2121 or one statistics course)
BIOL 4300, 4301. Ecosystem Ecology (4,0) (WI) (F) (P: BIOL 2250, 2251)

Choose one from:
BIOL 3070, 3071. Survey of Plants and Fungi (4,0) (P: 3 s.h. of science with a lab)
BIOL 3230, 3231. Field Botany (4,0) (F,S,SS) (P: 3 s.h. of general biology with a lab)
BIOL 5250, 5251. Phycology (4,0) (P: BIOL 1200, 1201)

Choose one from:
BIOL 3240, 3241. Field Zoology (4,0) (F) (P: BIOL 1060 or 2250)
BIOL 5070, 5071. Ornithology (4,0) (F) (P: 8 s.h. in BIOL)
BIOL 5150, 5151. Herpetology (4,0) (S) (P: 8 s.h. in BIOL)
BIOL 5200, 5201. Invertebrate Zoology (4,0) (F) (P: 6 s.h. in BIOL)
BIOL 5550, 5551. Ichthyology (4,0) (F)
BIOL 5640, 5641. Entomology (4,0) (F) (P: Twelve s.h. in BIOL)

Choose electives from:
BIOL 3660. Introduction to Marine Biology (3) (F,S,SS) (P/C: BIOL 2250, 2251)
BIOL 3661. Introduction to Marine Biology Laboratory (1) (F,S) (C: BIOL 3660)
BIOL 5220, 5221. Limnology (4,0) (S) (P: BIOL 2250, 2251; or consent of instructor)
BIOL 5260, 5261. Microbial Ecology (4,0) (S) (P: BIOL 2250, 2251, 3220, 3221; or consent of instructor)
BIOL 5270. Marine Community Ecology (3) (S) (P: BIOL 2250, 2251; or consent of instructor)
BIOL 5381. Biological Processes and the Chemistry of Natural Water (3) (S) (P: BIOL 2250, 2251; 2 CHEM courses; or consent of instructor)
BIOL 5720, 5731. Animal Physiological Ecology (4,0) (S) (P: BIOL 2250, 2251, 3310, 3311 or 3320, 3321 or 5800; or consent of instructor)

Choose from:
BIOL 3070, 3071. Survey of Plants and Fungi (4,0) (P: 3 s.h. of science with a lab)
BIOL 3230, 3231. Field Botany (4.0) (F,S,SS) (P: 3 s.h. of general biology with a lab)
BIOL 3240, 3241. Field Zoology (4.0) (F) (P: BIOL 1060 or 2250)
BIOL 3310, 3311. Cellular Physiology (4.0) (F,S,SS) (P: 1 organic CHEM or biochemistry course)
BIOL 3320. Principles of Animal Physiology (3) (F,S,SS) (P: 2000-level organic CHEM or biochemistry course)
BIOL 3321. Principles of Animal Physiology Laboratory (1) (C: BIOL 3320)
BIOL 3660. Introduction to Marine Biology (3) (F,S,SS) (P/C: BIOL 2250, 2251)
BIOL 3661. Introduction to Marine Biology Laboratory (1) (F,S) (C: BIOL 3660)
BIOL 4200, 4201. Population and Community Ecology (4.0) (4200: WI) (S) (P: BIOL 2250, 2251, 2300; CHEM 1150, 1151; RP: CHEM 1160, 1161; MATH 2121 or one statistics course)
BIOL 4300, 4301. Ecosystem Ecology (4.0) (WI) (F) (P: BIOL 2250, 2251)
BIOL 4504, 4514. Research Problems in Biology (2,2) (WI, WI) (F,S,SS) (P: Consent of instructor)
BIOL 5070, 5071. Ornithology (4.0) (F) (P: 8 s.h. in BIOL)
BIOL 5150, 5151. Herpetology (4.0) (S) (P: 8 s.h. in BIOL)
BIOL 5200, 5201. Vertebrate Zoology (4.0) (F) (P: 6 s.h. in BIOL)
BIOL 5220, 5221. Limnology (4.0) (S) (P: BIOL 2250, 2251; or consent of instructor)
BIOL 5250, 5251. Phylogeny (4.0) (P: BIOL 1200, 1201)
BIOL 5260, 5261. Microbial Ecology (4.0) (S) (P: BIOL 2250, 2251, 3220, 3221; or consent of instructor)

**BIOL 5270. Marine Community Ecology (3) (S) (P: BIOL 2250, 2251; or consent of instructor)**

**Marine Biology:**
BIOL 3660. Introduction to Marine Biology (3) (F,S,SS) (P/C: BIOL 2250, 2251)
BIOL 3661. Introduction to Marine Biology Laboratory (1) (F,S) (C: BIOL 3660)
BIOL 5200, 5201. Vertebrate Zoology (4.0) (F) (P: 6 s.h. in BIOL)
BIOL 5270. Marine Community Ecology (3) (S) (P: BIOL 2250, 2251; or consent of instructor)
BIOL 5550, 5551. Ichthyology (4.0) (F)
BIOL 5600, 5601. Fisheries Techniques (3.0) (F,S) (P: BIOL 2250, 2251; or equivalent)
BIOL 5680. Current Topics in Coastal Biology (2) (S) (P: Consent of instructor)
GEOL 1550. Oceanography (4) (S) (GE,SC)

Choose a minimum of 5 s.h. from:

**BIOL 5220, 5221. Limnology (4.0) (S) (P: BIOL 2250, 2251; or consent of instructor)**
BIOL 5250, 5251. Phylogeny (4.0) (P: BIOL 1200, 1201)
**BIOL 5351. Biological Processes and the Chemistry of Natural Water (2) (S) (P: BIOL 2250, 2251; 2 CHEM courses; or consent of instructor)**
**GEOL 5300. Geology of Coastal Processes and Environments (3) (S) (P: GEOL 1550, 4010, 4011; or consent of instructor)**

Choose from:

**BIOL 3660. Introduction to Marine Biology (3) (F,S,SS) (P/C: BIOL 2250, 2251)**
BIOL 3661. Introduction to Marine Biology Laboratory (1) (F,S) (C: BIOL 3660)
BIOL 4504, 4514. Research Problems in Biology (2,2) (WI, WI) (F,S,SS) (P: Consent of instructor)
BIOL 5200, 5201. Vertebrate Zoology (4.0) (F) (P: 6 s.h. in BIOL)
BIOL 5220, 5221. Limnology (4.0) (S) (P: BIOL 2250, 2251; or consent of instructor)
BIOL 5250, 5251. Phylogeny (4.0) (P: BIOL 1200, 1201)
**BIOL 5351. Biological Processes and the Chemistry of Natural Water (2) (S) (P: BIOL 2250, 2251; 2 CHEM courses; or consent of instructor)**
**BIOL 5270. Marine Community Ecology (3) (S) (P: BIOL 2250, 2251; or consent of instructor)**
**BIOL 5550, 5551. Ichthyology (4.0) (F)**
**BIOL 5600, 5601. Fisheries Techniques (3.0) (F,S) (P: BIOL 2250, 2251; or equivalent)**
**BIOL 5680. Current Topics in Coastal Biology (2) (S) (P: Consent of instructor)**
**GEOL 1550. Oceanography (4) (S) (GE,SC)**
**GEOL 5300. Geology of Coastal Processes and Environments (3) (S) (P: GEOL 1550, 4010, 4011; or consent of instructor)**
Microbiology:

BIOL 2250, 2251. Ecology and Ecology Laboratory (3,1) (F,SS) or BIOL 5260, 5261.

Microbial Ecology (4,0) (P: BIOL 2250, 2251, 3220, 3221; or consent of instructor).

BIOL 3100, 3101. Basic Laboratory Methods for Biotechnology (3,0) (F,SS) (P: BIOL 2300; CHEM 1160, 1161).

BIOL 3220, 3221. Microbiology (4,0) (P: BIOL 1200, 1201; 1 organic CHEM course).

BIOL 5190. Immunology (3) (F) (P: BIOL 2300, 3220, 3221).

BIOL 5810. Principles of Biochemistry I (3) (F,SS) (P: CHEM 2760, 2763) or BIOL 5810. Principles of Biochemistry II (3) (F,SS) (P: CHEM 2760, 2763).

BIOL 5821. Principles of Biochemistry Laboratory (1) (F,SS) (P: BIOL 5800 or 5810).

BIOL 5870. Molecular Genetics (3) (F) (P: BIOL 2300; RP: BIOL 3220, 3221, 5810).

Choose electives from:

BIOL 4504, 4514. Research Problems in Biology (2,2) (WI, WI) (F,SS) (P: Consent of instructor).

BIOL 5890. Virology (3, S,SS) (P: BIOL 3220, 3221; or consent of instructor).

Choose from:

BIOL 3100, 3101. Basic Laboratory Methods for Biotechnology (3,0) (F,SS) (P: BIOL 2300; CHEM 1160, 1161).

BIOL 3220, 3221. Microbiology (4,0) (F) (P: BIOL 1200, 1201; 1 organic CHEM course).

BIOL 3310, 3311. Cellular Physiology (4,0) (F,SS) (P: 1 organic CHEM or biochemistry course).

BIOL 4220. Microbes and Immunity (3) (SS) (P: BIOL 2110, 2111 or 3220, 3221).

BIOL 4504, 4514. Research Problems in Biology (2,2) (WI, WI) (F,SS) (P: Consent of instructor).

BIOL 5190. Immunology (3) (F) (P: BIOL 2300, 3220, 3221).

BIOL 5260, 5261. Microbial Ecology (4,0) (P: BIOL 2250, 2251, 3220, 3221; or consent of instructor).

BIOL 5800. Principles of Biochemistry I (3) (F,SS) (P: CHEM 2760, 2763, BIOL 3310, 3311) or BIOL 5810. Principles of Biochemistry II (3) (F,SS) (P: CHEM 2760, 2763, BIOL 3310, 3311).

BIOL 5821. Principles of Biochemistry Laboratory (1) (F,SS) (P: BIOL 5800 or 5810).

BIOL 5870. Molecular Genetics (3) (F) (P: BIOL 2300; RP: BIOL 3220, 3221, 5810).

BIOL 5890. Virology (3, SS) (P: BIOL 3220, 3221; or consent of instructor).

Molecular Biology and Biotechnology

BIOL 3100, 3101. Basic Laboratory Methods for Biotechnology (3,0) (F,SS) (P: BIOL 2300; CHEM 1160, 1161).

BIOL 3220, 3221. Microbiology (4,0) (F) (P: BIOL 1200, 1201; 1 organic CHEM course).

BIOL 5800, 5810. Principles of Biochemistry I, II (3,3) (F,SS) (P: CHEM 2760, 2763).

BIOL 5821. Principles of Biochemistry Laboratory (1) (F,SS) (P: CHEM 5800 or 5810). (BIOL 3310, 3311 may be substituted for BIOL 5800, 5810, 5821 by students who do not intend to seek advanced degrees.)

Choose electives from:

BIOL 4504, 4514. Research Problems in Biology (2,2) (WI, WI) (F,SS) (P: Consent of instructor).

BIOL 5190. Immunology (3) (F) (P: BIOL 2300, 3220, 3221).

BIOL 5260, 5261. Microbial Ecology (4,0) (P: BIOL 2250, 2251, 3220, 3221; or consent of instructor).

BIOL 5510, 5511. Transmission Electron Microscopy (4) (S) (P: Senior standing as a BIOL major or consent of instructor).

BIOL 5520, 5521. Scanning Electron Microscopy and X-Ray Analysis (2,0) (F,SS) (P: Senior standing as a BIOL major or consent of instructor).

BIOL 5870. Molecular Genetics (2) (F) (P: BIOL 2300; RP: BIOL 3220, 3221, 5810).

BIOL 5890. Virology (3, SS) (P: BIOL 3220, 3221; or consent of instructor).

BIOL 5900, 5901. Biotechniques and Laboratory (2,3) (S) (P: BIOL 3100, 3101, 5870; consent; RP: BIOL 5810).

BIOL 5930, 5931. Microcomputer Applications in Molecular Biology (2,0) (P: BIOL 3310, 3311, or 5810 or 5870).

Choose from:

BIOL 3100, 3101. Basic Laboratory Methods for Biotechnology (3,0) (F,SS) (P: BIOL 2300; CHEM 1160, 1161).

BIOL 3310, 3311. Cellular Physiology (4,0) (F, SS) (P: 1 organic CHEM or biochemistry course).
course)
  BIOL 3220, 3221. Microbiology (4.0) (F) (P: BIOL 1200, 1201; 1 organic CHEM course)
  BIOL 4504, 4514. Research Problems in Biology (2, 2) (WI, WI) (F/S, SS) (P: Consent of instructor)
  BIOL 5190. Immunology (3) (F) (P: BIOL 2300, 3220, 3221)
  BIOL 5260, 5261. Microbial Ecology (4.0) (S) (P: BIOL 2250, 2251, 3220, 3221; or consent of instructor)
  BIOL 5510, 5511. Transmission Electron Microscopy (4) (S) (P: Senior standing as a BIOL major or consent of instructor)
  BIOL 5520, 5521. Scanning Electron Microscopy and X-Ray Analysis (2.0) (F, SS) (P: Senior standing as a BIOL major or consent of instructor)
  BIOL 5800, 5810. Principles of Biochemistry I, II (3, 3) (F, S) (P: CHEM 2760, 2763, BIOL 3310, 3311)
  BIOL 5821, Principles of Biochemistry Laboratory (1) (F) (P: CHEM 5800 or 5810)
  BIOL 5870. Molecular Genetics (3) (F) (P: BIOL 2300; RP: BIOL 3220, 3221, 5810)
  BIOL 5890. Virology (3) (S, SS) (P: BIOL 3220, 3221; or consent of instructor)
  BIOL 5900, 5901. Biotechniques and Laboratory (2, 3) (S) (P: BIOL 3100, 3101, 5870; consent; RP: BIOL 5810)

Physiology, Anatomy, and Cell Biology:
Choose three from:
  BIOL 3220, 3221. Microbiology (4.0) (F) (P: BIOL 1200, 1201; 1 organic CHEM course)
  BIOL 4060, 4061. Embryology (4.0) (P: BIOL 2300)
  BIOL 5190. Immunology (3) (F) (P: BIOL 2300, 3220, 3221)
  BIOL 5450, 5451. Histology (4.0) (F) (P: 4 BIOL courses)
  BIOL 5480, 5481. Cytology (2, 2) (P: 12 s.h. in BIOL)
  BIOL 5870. Molecular Genetics (3) (F) (P: BIOL 2300; RP: BIOL 3220, 3221, 5810)

Choose a minimum of two from:
  BIOL 3310, 3311. Cellular Physiology (4.0) (F, SS) (P: 1 organic CHEM or biochemistry course)
  BIOL 3320. Principles of Animal Physiology (3) (F, SS) (P: 2000-level organic CHEM or biochemistry course)
  BIOL 3321. Principles of Animal Physiology Laboratory (1) (F, SS) (C: BIOL 3320)
  BIOL 4050, 4051. Comparative Anatomy (4.0) (F) (P: 6 s.h. in BIOL)

Biology electives
  Choose from:
    BIOL 3220, 3221. Microbiology (4.0) (F) (P: BIOL 1200, 1201; 1 organic CHEM course)
    BIOL 3310, 3311. Cellular Physiology (4.0) (F, SS) (P: 1 organic CHEM or biochemistry course)
    BIOL 3320. Principles of Animal Physiology (3) (F, SS) (P: 2000-level organic CHEM or biochemistry course)
    BIOL 3321. Principles of Animal Physiology Laboratory (1) (F, SS) (C: BIOL 3320)
    BIOL 4040. Human Genetics (3) (S) (P: BIOL 2300)
    BIOL 4050, 4051. Comparative Anatomy (4.0) (F) (P: 6 s.h. in BIOL)
    BIOL 4060, 4061. Embryology (4, 0) (P: BIOL 2300)
    BIOL 4480, 4481. Cytology (2, 2) (F) (Formerly BIOL 5480, 5481) P: BIOL 3310, 3311; P/C: BIOL 4480 for BIOL 4481
      BIOL 4504, 4514. Research Problems in Biology (2, 2) (WI, WI) (F/S, SS) (P: Consent of instructor)
    BIOL 5190. Immunology (3) (F) (P: BIOL 2300, 3220, 3221)
    BIOL 5450, 5451. Histology (4, 0) (F) (P: 4 BIOL courses)
    BIOL 5480, 5481. Cytology (2, 2) (P: 12 s.h. in BIOL)
    BIOL 5630, 5631. Comparative Animal Physiology (4, 0) (S) (P: 2 BIOL and 2 organic CHEM courses)
    BIOL 5870. Molecular Genetics (3) (F) (P: BIOL 2300; RP: BIOL 3220, 3221, 5810)

4. Cognates, 22 s.h.
  CHEM 2750. Organic Chemistry I (3) (F, SS) (P: CHEM 1160, 1161)
  CHEM 2753. Organic Chemistry Laboratory I (1) (F, SS) (C: CHEM 2750)
  CHEM 2760. Organic Chemistry II (3) (F, SS) (P: CHEM 2750; C: CHEM 2762 or 2763)
  CHEM 2763. Organic Chemistry Laboratory II (1) (F, SS) (P: CHEM 2750, 2753; C: CHEM 2760)
  MATH 2121. Calculus for the Life Sciences I (3) (F, SS) (GE:MA) (P: MATH 1065 or 1077 with a minimum grade of C)
5. Research skills (Choose one area.)

Students contemplating graduate school should consider admission requirements before selecting a research skills area.

a. Foreign language through level 1003.

b. Quantitative and Communication Skills (1 course each in scientific writing, statistics, and computer programming.) Recommended courses:

- ENGL 3820. Scientific Writing (3) (F, S) (P: ENGL 1200) or ITEC 3290. Technical Writing (3) (WI) (F, S) (P: ENGL 1200) or a course in scientific writing
- MATH 2228. Elementary Statistical Methods I (3) (F, S) (P: MATH 1065 or equivalent)
- DSCI 2223. Introduction to Computers (3) (F, S) or CSCI 2510. Introduction to Computer Science I (3) (F, S) (P: MATH 1065 or 1066) or ACCT 2401. Financial Accounting (3) (F, S) (P: MATH 1065 or 1066)

c. Relevant cognate area–courses chosen to meet this requirement must be planned through consultation with a faculty adviser and approved in advance by the dept chair and the dept director of undergraduate studies.

d. Recommended for microbiology and molecular biology/biotechnology:

- CHEM 2250, 2251. Quantitative and Instrumental Analysis (3, 2) (WI, WI) (F, S) (P: CHEM 1160, 1161; 1 organic CHEM course)
- DSCI 2223. Introduction to Computers (3) (F, S) or CSCI 2510. Introduction to Computer Science I (3) (F, S) (P: MATH 1065 or 1066) or ACCT 2401. Financial Accounting (3) (F, S) (P: MATH 1065 or 1066)

6. Electives

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Department of Chemistry

P. 268-269. Add new CHEM courses.

1021 General Descriptive Chemistry Laboratory (1) (F) (GE:SC) 3 laboratory hours per week. C/P: CHEM 1020. Chemistry laboratory for non-science majors. Laboratory experiences which illustrate fundamental chemical principles and the relevance of chemistry in the modern world. Topics include chemical measurements, acids, synthesis and purification of biochemical substances, DNA fingerprinting.

2301. Teaching Laboratory Chemistry (2.0) (F) P: CHEM 1160, 1161. Instruction and supervised experience in the methods and practice of teaching introductory chemistry laboratory.

3301. Practicum in Teaching (1) (F) P: CHEM 1160, 1161, 2301 and consent of instructor. Supervised practicum in teaching introductory chemistry laboratory. May be repeated for credit. May count maximum of 4 s.h. toward CHEM major.

P. 270.

Bank CHEM courses

3860, 3861. Introduction to Instrument-Computer Interfacing (2.1)

Chemistry course descriptions with some editorial changes:

CHEM: CHEMISTRY

0150. Preparation for College Chemistry (2) (F, S) 3 lectures per week. May not count toward general education science requirement. C: MATH 1065. Intensive review and study of basic chemical laws and mathematical tools needed for further study in general chemistry.
1020. General Descriptive Chemistry (4) (F,S) (GE:SC) May not count toward general education science requirement for science majors. General chemistry for nonscience majors.

1021. General Descriptive Chemistry Laboratory (1) (F,S) (GE:SC) 3 laboratory hours per week. C/P: CHEM 1020. Chemistry laboratory for nonscience majors. Laboratory experiences which illustrate fundamental chemical principles and the relevance of chemistry in the modern world. Topics include chemical measurements, acids, synthesis and purification of biochemical substances, DNA fingerprinting.

1120. Basic General, Organic, and Biochemistry I (4) (F,S,SS) (GE:SC) May not count toward general education science requirement for science majors. Study of general, organic, and biochemistry and chemical applications in health professions.

1121. Basic General, Organic, and Biochemistry Laboratory I (1) (F,S) (GE:SC) 3 lab hours per week. C: CHEM 1120. Introduction to lab techniques in general, organic, and biochemistry.


1131. Basic General, Organic, and Biochemistry Laboratory II (1) (F,S,SS) (GE:SC) 3 lab hours per week. C: CHEM 1130. Continuation of CHEM 1121.

1150, 1151. General Chemistry and Laboratory I (3,1) (F,S,SS) (GE:SC) For science majors. 3 lecture and 3 lab hours per week. P: Chemistry placement test or passing grade in CHEM 0150; P/C: MATH 1065; C for 1150: CHEM 1151; C for 1151: CHEM 1150. Basic principles and laws of chemistry. Topics include measurements, reactions and stoichiometry, thermochemistry, atomic structure, periodicity, bonding and molecular structure, and states of matter.

1160, 1161. General Chemistry and Laboratory II (3,1) (F,S,SS) (GE:SC) 3 lecture and 3 lab hours per week. P: CHEM 1150, 1151; C for 1160: CHEM 1161; C for 1161: CHEM 1160; RC: MATH 1075 or 1085. Continuation of CHEM 1150. Topics include solutions, kinetics, equilibrium, acid-base theory, thermodynamics, electrochemistry, and an introduction to organic, nuclear, and coordination chemistry.

2111. Applications of Molecular Modeling (1) (F,S) (GE:SC) P/C: CHEM 2750. Applications of molecular modeling will be utilized to explore relationships between molecular structure and molecular properties.

2250, 2251. Quantitative and Instrumental Analysis (3,2) (WI) (F,S) 3 lecture and 6 lab hours per week. P: CHEM 1160, 1161; 1 semester of organic CHEM; C for 2250: CHEM 2251; C for 2251: CHEM 2250. Theories and techniques of classical quantitative and modern instrumental analysis.

2301. Teaching Laboratory Chemistry (2.0) (F,S) 1 lecture and 3 lab hours per week. P: CHEM 1160, 1161. Instruction and supervised experience in the methods and practice of teaching introductory chemistry laboratory.

2650, 2651. Organic Chemistry for the Life Sciences (4,1) (F) 4 lecture and 3 lab hours per week. May not count toward CHEM major or minor. Not an acceptable prerequisite for CHEM 2760. P: CHEM 1160, 1161; C for 2650: CHEM 2651; C for 2651: CHEM 2650. Principles of organic chemistry. Emphasis on biologically important topics.

2750. Organic Chemistry I (3) (F,S,SS) P: CHEM 1160, 1161; RC: CHEM 2753. Classes of compounds and their typical reactions; mechanisms; stereochemistry; and instrumental methods in organic chemistry.

2753. Organic Chemistry Laboratory I (1) (F,S,SS) 3 lab hours per week C: CHEM 2750. Organic lab techniques.

2760. Organic Chemistry II (3) (F,S,SS) P: CHEM 2750; C: CHEM 2762 or 2763. Continuation of CHEM 2750.

2762. Organic Chemistry Laboratory (2) (F,S,SS) 6 lab hours per week P: CHEM 2750; C: CHEM 2760. Organic lab techniques. Equivalent to CHEM 2753 and 2763. (Will not be offered after fall 2001.)

2763. Organic Chemistry Laboratory II (1) (F,S,SS) 3 lab hours per week P: CHEM 2750, 2753; C: CHEM 2760. Continuation of CHEM 2753.

2771. Biological Chemistry Laboratory (1) (F,S) (GE:SC) 3 lab hours per week. C: CHEM 2770. Application of chemical lab techniques to study of proteins, carbohydrates, lipids, and nucleic acids.

3301. Practicum in Teaching (1) (F,S) 3 lab hours per week. P: CHEM 2301 and consent of instructor. Supervised practicum in teaching introductory chemistry laboratory. May be repeated for credit. May count maximum of 4 s.h. toward CHEM major.

3450, 3451. Elementary Inorganic Chemistry and Laboratory (3,1) (WI) (S) 3 lecture and 3 lab hours per week. P: CHEM 2250, 2251; C for 3450: CHEM 3451; C for 3451: CHEM 3450. Modern chemical principles, periodic properties, and reactions of elements.

3501, 3502, 3503. Special Topics in Chemistry (1,2,3) May be repeated for maximum of 6 s.h. with change of topic. May not count toward general education science credit. P: CHEM 1160; consent of instructor. Selected topics of contemporary interest.

3850, 3851. Introduction to Physical Chemistry (4,1) (WI) (F) 4 lecture and 3 lab hours per week. P: CHEM 1160, 1161; MATH 2122 or 2172; PHYS 1260, 1261; C for 3850: CHEM 3851; C for 3851: CHEM 3850. Physical chemistry for students with a limited mathematical background.

3860, 3861. Introduction to Instrument-Computer Interfacing (2,1) Same as PHYS 3860, 3861 2 lecture and 2 lab hours per week. P: PHYS 2360 and knowledge of a high-level computer language such as BASIC, FORTRAN, and COBOL; C for 3860: CHEM 3861; C for 3861: CHEM 3860. Introduction to interfacing and programming of scientific and industrial computers for data acquisition, data manipulation, and control of instruments and processes.

3950, 3951. Physical Chemistry and Laboratory I (4,1) (WI) (S) 4 lecture and 3 lab hours per week. P: PHYS 1261, 2360; MATH 2173; CHEM 2250, 2251; C for 3950: CHEM 3951; C for 3951: CHEM 3950. Theoretical and mathematical treatment of fundamental laws and theories underlying science of chemistry.

3960, 3961. Physical Chemistry and Laboratory II (4,1) (WI) (F) 4 lecture and 3 lab hours per week. P: CHEM 3950, 3951; C for 3960: CHEM 3961; C for 3961: CHEM 3960. Continuation of CHEM 3950, 3951.

4103. Seminar (1) (F,S) P: Junior or senior standing. Chemical literature, discussion of contemporary topics in chemistry, and submission of written and oral reports on approved topics. Attendance at selected departmental seminars required.

4505, 4506, 4507. Independent Study (1,2,3) (F,S,SS) May be repeated for credit. May count maximum of 3 s.h. toward CHEM major. P: Consent of instructor and dept chair. Individual study in selected area of chemistry under immediate direction of faculty member.

4515, 4516, 4517. Research Problems in Chemistry (1,2,3) (F,S,SS) May be repeated for credit. May count maximum of 6 s.h. toward CHEM major. P: Consent of instructor. Advanced problems in chemistry pursued under supervision of a faculty member.

5350, 5351. Instrumental Analysis (3,1) (WI) (S) 3 lecture and 3 lab hours per week. P: CHEM 3960; C for 5350: CHEM 5351; C for 5351: CHEM 5350. Theory and practical uses of modern instrumental methods of chemical analysis.

5525, 5526, 5527. Special Topics (1,2,3) May be repeated for credit with change of topic. P: Consent of instructor. Selected topics of current interest in areas of analytical, inorganic, organic, and physical chemistry.

5550. Advanced Inorganic Chemistry (3) P: CHEM 3450, 3950. Study of newer theories, developments, and procedures in inorganic chemistry.

5750. Advanced Organic Chemistry (3) P: CHEM 2760; P/C: CHEM 3960. Physical organic topics, including aromaticity, acid/base chemistry, reactive intermediates, mechanisms of common organic reactions, and relationship between structure and reactivity.

5760. Organic Structure Elucidation (3) P: Consent of instructor. Application of modern instrumental methods to elucidation of structures of organic compounds, with particular regard to elucidation of complex structures from combined application of spectral tools.

5993. Industrial Internship in Chemistry (3) 25-30 lab hours per week. May count maximum of 3 s.h. toward CHEM major. P: Selection by joint Department of Chemistry/industry screening committee; CHEM 2250, 2760, 3950. Professional experience in industrial application of chemistry.

CHEM BANKED COURSES

1163. Introduction to Computer Techniques in Experimental Chemistry (1)
3860, 3861. Introduction to Instrument-Computer Interfacing (2,1).

https://author.ecu.edu/cs-acad/fs/online/cu/cu4_021.cfm
5390. Bioanalytical Chemistry (2)
5450. Industrial Chemistry (3)
5970. Chemical Thermodynamics (2)

DEGREE PROGRAMS

SECTION 7

DEPARTMENT OF CHEMISTRY

Chia-yu Li, Chairperson, 205 Flanagan Building

ADMISSION REQUIREMENTS

Students enrolled at East Carolina University or transferring from other institutions who have a minimum 2.0 GPA and a minimum grade of C in CHEM 1150, 1151, 1160, 1161 and MATH 1065 may apply for admission as chemistry majors. Students who hold a baccalaureate degree qualify for admission to the Chemistry degree program if they have completed comparable courses as described above with a minimum grade of C as part of their first degree.

BA IN CHEMISTRY

The BA program provides a flexible major designed to provide the student with a broad education in chemistry appropriate for further study in a wide range of fields, such as business, medicine, pharmacy, and law as well as careers dependent on a basic knowledge in chemistry. The BA in Chemistry, in conjunction with two semesters of laboratory-based biology courses, satisfies the course requirements for application to most US medical schools. It is different than the BS degree in the required chemistry, math, and physics courses. Any of the required major courses or cognates, however, may be replaced by courses that cover the same topics at a more advanced level. For example, CHEM 3950, 3960 may be taken instead of CHEM 3850. It is the student's responsibility to ensure that the prerequisites for such courses have been met. Minimum degree requirement is 126 s.h. of credit as follows:

1. General education (See Section 6, Undergraduate Studies, Requirements for Baccalaureate Degree Programs.), including those listed below. 42 s.h.

   MATH 1065. College Algebra (3) (F,S,SS) (GE:MA) (P: Appropriate score on mathematics placement test)
   PHYS 1250, 1260. General Physics (3,3) (F,S,SS) (GE:SC) (P for 1250: MATH 1065 or 1066; P for 1260: PHYS 1250)
   PHYS 1251, 1261. General Physics Laboratory (1,1) (F,S,SS) (GE:SC) (C for 1251: PHYS 1250 or 2350; C for 1261: 1260 or 2260 2360) editorial

2. Foreign language through level 1004. 12 s.h.

3. Core. 30 s.h.

   CHEM 1150, 1151. General Chemistry and Laboratory I (3,1) (F,S,SS) (GE:SC) (P: Chemistry placement test or passing grade in CHEM 0150; P/C: MATH 1065)
   CHEM 1160, 1161. General Chemistry and Laboratory II (3,1) (F,S,SS) (GE:SC) (P: CHEM 1150, 1151; RC: MATH 1075 or 1085)
   CHEM 2250, 2251. Quantitative and Instrumental Analysis (3,2) (WI, WI) (F,S) (P: CHEM 1160, 1161; one organic CHEM course)

   CHEM 2750. Organic Chemistry I (3) (F,S,SS) (P: CHEM 1160, 1161)
   CHEM 2753. Organic Chemistry Laboratory I (1) (F,S,SS) (C: CHEM 2750) and CHEM 2763. Organic Chemistry Laboratory II (1) (F,S,SS) (P: CHEM 2750, 2753; C: CHEM 2760) or CHEM 2762. Organic Chemistry Laboratory (2) (F,S,SS) (P: CHEM 2750, C: CHEM 2760)

   CHEM 2760. Organic Chemistry II (3) (F,S,SS) (P: CHEM 2750; C: CHEM 2762 or 2763)
   CHEM 3450, 3451. Elementary Inorganic Chemistry and Laboratory (3,1) (WI, WI) (S) (P: CHEM 2250, 2251)
   CHEM 3850, 3851. Introduction to Physical Chemistry (4,1) (WI, WI) (F) (P: CHEM 1160, 1161; MATH 2122 or 2172; PHYS 1260, 1261)

4. Cognates. 6-13 s.h.

   MATH 2121. Calculus for the Life Sciences I (3) (F,S,SS) (GE:MA) (P: MATH 1065 or 1077 with a minimum grade of C) and MATH 2122. Calculus for the Life Sciences II (3) (F,S,SS) (P: MATH 2121) or MATH 1085. Pre-Calculus Mathematics (5) (F,S,SS) (GE:MA) (P: MATH 1065 with a minimum grade of C) and MATH 2171, 2172. Calculus I, II (4,4) (F,S,SS) (GE:MA) (P for 2171: MATH 1085 or 2122 with a minimum grade of C; P for 2172: MATH 2122 with a minimum grade of C or MATH 2171)
5. Electives to complete requirements for graduation.

**BS IN CHEMISTRY**

The BS degree in chemistry is the appropriate program for students considering advanced degree programs in chemistry, biochemistry, and other related fields or a professional career in chemistry. Graduates of this program meet certification requirements of the American Chemical Society. Students are strongly encouraged to pursue undergraduate research with a faculty member. Up to six s.h. of undergraduate research may be applied toward degree requirements. Information regarding undergraduate research may be obtained from the director of Undergraduate Studies. Students completing the BS degree are encouraged to consider some of the following courses as electives: SPCH 2520 or SPCH 2510; ITEC 3290 or ENGL 3820; MATH 2228, 3256, 4331; CHEM 4515, 4516, 4517; advanced 5000- level courses in chemistry; and BIOL 5800 or 5810. Minimum degree requirement is 126 s.h. of credit as follows:

1. General education (See Section 6, Undergraduate Studies, Requirements for Baccalaureate Degree Programs.), including those listed below. 44 s.h.
   MATH 1065. College Algebra (3) (F,S,SS) (GE:MA) (P: Appropriate score on mathematics placement test)
   PHYS 1251, 1261. General Physics Laboratory (1,1) (F,S,SS) (GE:SC) (C for 1251: PHYS 1250 or 2350; C for 1261: 1260 or 2260 2360) editorial
   PHYS 2350, 2360. University Physics (4,4) (F,S,SS) (GE:SC) (C for 2350: C: MATH 2121 or 2171; P for 2360: PHYS 2350) editorial

2. Core. 46 s.h.
   CHEM 1150, 1151. General Chemistry and Laboratory I (3,1) (F,S,SS) (GE:SC) (P: Chemistry placement test or passing grade in CHEM 0150; P/C: MATH 1065)
   CHEM 1160, 1161. General Chemistry and Laboratory II (3,1) (F,S,SS) (GE:SC) (P: CHEM 1150, 1151; RC: MATH 1075 or 1085)
   CHEM 2250, 2251. Quantitative and Instrumental Analysis (3,2) (WI, WI) (F,S) (P: CHEM 1160, 1161; one organic CHEM course)
   CHEM 2750. Organic Chemistry I (3) (F,S,SS) (P: CHEM 1160, 1161)
   CHEM 2753. Organic Chemistry Laboratory I (1) (F,S,SS) (C: CHEM 2750) and CHEM 2763. Organic Chemistry Laboratory II (1) (F,S,SS) (P: CHEM 2750, 2753; C: CHEM 2760) or CHEM 2762. Organic Chemistry Laboratory (2) (F,S,SS) (P: CHEM 2750; C: CHEM 2760) editorial
   CHEM 2760. Organic Chemistry II (3) (F,S,SS) (P: CHEM 2750; C: CHEM 2762 or 2763)
   CHEM 2770. Biological Chemistry (3) (F,S) (GE:SC) (P: CHEM 2650 or 2750)
   CHEM 3450, 3451. Elementary Inorganic Chemistry and Laboratory (3,1) (WI, WI) (S) (P: CHEM 2250, 2251)
   CHEM 3950, 3951. Physical Chemistry and Laboratory I (4,1) (WI, WI) (S) (P: PHYS 1261, 2360; MATH 2173; CHEM 2250, 2251)
   CHEM 3960, 3961. Physical Chemistry and Laboratory II (4,1) (WI, WI) (F) (P: CHEM 3950, 3951)
   CHEM 4103. Seminar (1) (F,S) (P: Junior or senior standing)
   CHEM 5350, 5351. Instrumental Analysis (3,1) (WI, WI) (S) (P: CHEM 3960)
   CHEM 5550. Advanced Inorganic Chemistry (3) (F) (P: CHEM 3450, 3950)

3. Elective labs. Choose a minimum of 2 s.h. from: 2 s.h.
   **BIOL 5821. Principles of Biochemistry Laboratory (1) (F,S) (P/C: BIOL 5800 or 5810)**
   CHEM 2111. Applications of Molecular Modeling (1) (F,S) (GE:SC) (P/C: CHEM 2750)
   CHEM 2301. Teaching Laboratory Chemistry (2,0) (F,S) (P: CHEM 1160, 1161) 1 s.h. lab credit
   CHEM 2771. Biological Chemistry Laboratory (1) (F,S) (GE:SC) (C: CHEM 2770)
   CHEM 3301. Practicum in Teaching (1) (F,S) (P: CHEM 2301 and consent of instructor)
   CHEM 4515, 4516, 4517. Research Problems in Chemistry (1,2,3) (F,S,SS) (P: Consent of instructor)
   CHEM 5993. Industrial Internship in Chemistry (3) (P: Selection by joint Department of Chemistry/industry screening committee; CHEM 2250, 2760, 3950).

4. Cognates 17 s.h.
   **MATH 1085. Pre-Calculus Mathematics (5) (F,S,SS) (GE:MA) (P: MATH 1065 with a minimum grade of C)**
   MATH 2171, 2172, 2173. Calculus I, II, III (4,4,4) (F,S,SS) (GE:MA) (P for 2171: MATH 1085 or 2122 with a minimum grade of C; P for 2172: MATH 2122 with a minimum grade of C or MATH 2171; P for 2173: MATH 2172)

5. Electives to complete requirements for graduation.
CHEMISTRY MINOR

Minimum requirement for the chemistry minor is 25-26 s.h. of credit as follows:

Core. 25-26 s.h.
CHEM 1150, 1151. General Chemistry and Laboratory I (3,1) (F,S,SS) (GE:SC) (P: Chemistry placement test or passing grade in CHEM 0150; P: C: MATH 1065)
CHEM 1160, 1161. General Chemistry and Laboratory II (3,1) (F,S,SS) (GE:SC) (P: CHEM 1150, 1151; RC: MATH 1075 or 1085)
CHEM 2250, 2251. Quantitative and Instrumental Analysis (3,2) (WI, WI) (F,S) (P: CHEM 1160, 1161; 1 organic CHEM course)
CHEM 2750. Organic Chemistry I (3) (F,S,SS) (P: CHEM 1160, 1161)
CHEM 2753. Organic Chemistry Laboratory I (1) (F,S,SS) (C: CHEM 2750) and CHEM 2763. Organic Chemistry Laboratory II (1) (F,S,SS) (P: CHEM 2750, 2753; C: CHEM 2760) or CHEM 2762. Organic Chemistry Laboratory (2) (F,S,SS) (P: CHEM 2750; C: CHEM 2760)
editorial
CHEM 2760. Organic Chemistry II (3) (F,S,SS) (P: CHEM 2750; C: CHEM 2762 or 2763)
CHEM 3450, 3451. Elementary Inorganic Chemistry and Laboratory (3,1) (WI, WI) (S) (P: CHEM 2250, 2251) or CHEM 3850, 3851. Introduction to Physical Chemistry (4,1) (WI, WI) (F) (P: CHEM 1160, 1161; MATH 2122 or 2172; PHYS 1260, 1261)

CHEMISTRY HONORS PROGRAM

The Department of Chemistry Honors Program provides an opportunity for outstanding chemistry majors to do intensive study and research in areas of special interest. A student desiring to enter the honors program must be a junior or senior majoring in chemistry and possess a minimum GPA of 3.2 in all courses taken at East Carolina University as well as in all chemistry and cognate courses. Before participating in the honors program, students must notify the director of undergraduate studies in chemistry and select a project supervisor from the chemistry faculty. Program participants are expected to select a topic of mutual interest to both the student and project supervisor, research the topic through the scientific literature, and then conduct independent research on the topic. Upon completion of the research, the student must submit a detailed written research report and make an oral presentation on the honors project. Course requirements: CHEM 4103; a minimum of 5 s.h. research and/or independent study from: CHEM 4505, 4506, 4507, 4515, 4516, 4517.

BACHELOR OF SCIENCE AND ACCELERATED MS IN CHEMISTRY

Students working toward a BS degree in chemistry have the opportunity to earn an MS degree in two or three additional semesters of study. These students are encouraged to begin research projects as undergraduates and take advanced classes that can be used to waive some MS course requirements. As seniors they may be granted early admission to the MS program and would be eligible to receive paid teaching assistantships. To be enrolled in the MS program as a senior, students must be within 6 s.h. credit of completing all undergraduate degree requirements. Applications to the MS program should be submitted during the first semester of the senior year and must include GRE scores.

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Department of Geology

P. 318. Unbank GEOL courses and remove GEOL 1601 as a prerequisite.
3200, 3201. Introduction to Field Methods (2,0) (S): P: GEOL 1600, 1601.1 lecture and 1 3-hour lab per week. Introduction to the standard scientific methods of solving geologic field problems. Techniques include description, sampling, and measurement of geologic processes and sections; and principles of field mapping utilizing the Brunton compass, aerial photographs, and the plane table and alidade.

P. 317. Change prerequisites of GEOL 3300, 3301 by adding GEOL 3200, 3201.
3300, 3301. Structural Geology (4,0) (F): 3 lectures and 1 3-hour lab per week. P: GEOL 1600, 3200, 3201. Study of structures resulting from tectonic formation of earth's crust and intrusion of molten magma.

P. 105. Change BS(P) degree requirements by
adding to 2. Core, GEOL 3200, 3201 thus changing the semester hours to 39;
changing 3. Concentration areas to 7 s.h. as follows:
  Coastal and Marine Geology (Choose 7 s.h. from the following.),
  Environmental Geology (Choose 7 s.h. from the following.), and
  General Geology: Choose 7 s.h. from any combination of GEOL courses

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DEPARTMENT OF GEOLOGY

Stephen J. Culver, Chairperson, 101 Graham Building

BS IN GEOLOGY

Geology majors have the opportunity to specialize in one of three concentration areas: coastal and marine, environmental, or general geology. Minimum degree requirement is 126 s.h. of credit as follows:

1. General education (See Section 6, Undergraduate Studies, Requirements for Baccalaureate Degree Programs.). 42 s.h.

2. Core. 37 s.h. 39 s.h.
   - GEOL 1500. Dynamic Earth (3) (F,S,SS) (GE:SC) and GEOL 1501. Dynamic Earth Laboratory (1) (F,S,SS) (GE:SC); or GEOL 1550 Oceanography (4) (F,S) (GE:SC); or GEOL 1700. Environmental Geology (4) (F,S) (GE:SC)
   - GEOL 1600. Earth and Life Through Time (4) (F,S) (GE:SC)
   - GEOL 3000, 3001. Mineralogy (4,0) (F: A 1000-level GEOL course; P:C: CHEM 1150, 1151)
   - GEOL 3100, 3101. Petrology (4,0) (S: P: GEOL 3000, 3001)
   - GEOL 3200, 3201. Introduction to Field Methods (2,0) (S: P: GEOL 1600)
   - GEOL 3300, 3301. Structural Geology (4,0) (F: P: GEOL 1600, 3200, 3201)
   - GEOL 4000. Summer Field Course in Geology (6) (SS: P: GEOL 3100, 3101, 3300, 3301)
   - GEOL 4010, 4011. Sedimentology (4,0) (WI) (F: P: GEOL 1600, 3100, 3101)
   - GEOL 4020, 4021. Stratigraphy (3,0) (WI) (S: P: GEOL 1600)
   - GEOL 4200, 4201. Paleontology (4,0) (4200:WI) (S: P: GEOL 1600)

3. Concentration areas (Choose one.). 9-6 s.h. 7 s.h.
   - Coastal and Marine Geology (Choose 7 s.h. from the following.):
     - GEOL 1550. Oceanography (4) (F,S) (GE:SC)
     - GEOL 3500. Geology of Coastal Processes and Environments (3) (F: P: GEOL 1550, 4010, 4011; or consent of instructor)
     - GEOL 3550. Marine Geology (3) (F: P: GEOL 1550, 4010, 4011; or consent of instructor)
   - Environmental Geology (Choose 9-7 s.h. from the following.):
     - GEOL 1700. Environmental Geology (4) (F,S) (GE:SC)
     - GEOL 5150. The Geologic Component of Environmental Science (3) (S: P: Introductory GEOL course or consent of instructor)
     - GEOL 5450. Introduction to Aqueous Geochemistry (3) (S: P: CHEM 1150, 1151, 1160, 1161)
     - GEOL 5710, 5711. Ground-Water Hydrology (3,0) (F: P: GEOL 1500, 1501; or consent of instructor.

General Geology:
Choose 9-7 s.h. from any combination of GEOL courses

4. Cognates. 28 s.h.
   - CHEM 1150, 1151. General Chemistry and Laboratory I (3,1) (F,S,SS) (GE: SC) (P: Chemistry placement test or passing grade in CHEM 0150; P:C: MATH 1065)
   - CHEM 1160, 1161. General Chemistry and Laboratory II (3,1) (F,S,SS) (GE: SC) (P: CHEM 1150, 1151; RC: MATH 1075 or 1085)
   - MATH 1065. College Algebra (3) (F,S,SS) (GE:MA) (P: Appropriate score on mathematics placement test)
   - Choose 9 s.h. of approved courses in calculus, statistics, and/or computer applications.
   - Choose 8 s.h. of approved BIOL, CHEM, and/or PHYS courses.

5. Electives to complete requirements for graduation.

NOTE: Students who plan to pursue graduate degrees in geology should complete a year of physics and a year of calculus.

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School of Education
Academic Concentrations

P. 162. Add EXSS 3301 to Section 1 of Interdisciplinary Human Studies concentration.
Interdisciplinary Human Studies (24 s.h.)

1. Psychosocial Perspectives of Human Studies (12 s.h. from this area)
   - PSYC 1000 Introductory Psychology (3) (F, S, SS) (GE:SO)
   - PSYC 4350 Psychology of Sexual Behavior (3) (F, S)
   - SOCI 1025 Courtship and Marriage (3) (F, S)
   - SOCI 3325 Sociology of Human Sexuality (3) (F, S, SS) (GE:SO)
   - REHB 2003 Alcohol and Drug Abuse: Health and Social Problems (3) (F, S)
   - EXSS 3300 Applied Sports Psychology (3) (F)
   - EXSS 3301 Physical Education and Sport in Modern Society (3) (F, SS)
   - HLTH 3030 Health Behavior Theory (3) (WI) (S)
   - HLTH 5310 Education for Human Sexuality (3) (S)
   - HLTH 5900 Stress Management (3) (S)

2. Physical Perspectives of Human Studies (12 s.h. from this area)
   - NUHM 1000 Contemporary Nutrition (3) (F, S, SS) or NUHM 2105 Nutrition (3) (F, S, SS)
   - HLTH 2125/2126 First Aid and CPR (3,0) (F, S, SS)
   - HLTH 3010 Health Problems I (3) (F)
   - BIOL 2130 Human Anatomy and Physiology (4) (F, S, SS) (GE:SC)
   - EHST 2110 Introduction to Environmental Health Science (3) (F, S)
   - EXSS 3805 Exercise Physiology (3) (F, S, SS)
   - EXSS 4806 Exercise Evaluation and Prescription (4) (WI) (F, S, SS)
   - EXSS 5020 Exercise Adherence (3) (F, S, SS)

School of Health and Human Performance
Department of Health Education and Promotion


2500. **Peer Health 1: Training** (2) (F,S) P: HLTH 1000. Planning, implementing, and evaluating health education activities for the ECU community.

3500. **Peer Health 2: Practical Experience** (1) (F, S) P: HLTH 1000. Peer education experiences/opportunities to apply skills and knowledge learned in HLTH 2500.

3501. **Peer Health 2: Practical Experience** (2) (F, S) P: HLTH 1000, HLTH 2500. Peer education experiences/opportunities to apply skills and knowledge learned in HLTH 2500.

3502. **Peer Health 2: Practical Experience** (3) (F, S) P: HLTH 1000, HLTH 2500. Peer education experiences/opportunities to apply skills and knowledge learned in HLTH 2500.

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**Department of Recreation and Leisure Studies**


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**DEPARTMENT OF RECREATION AND LEISURE STUDIES**

**Thomas K. Skalko, Chairperson, 175 Minges Coliseum**

**BS IN MANAGEMENT OF RECREATION FACILITIES AND SERVICES**

Any student wishing to declare a major in management of recreation facilities and services must, at the time of entrance into the curriculum, possess a minimum 2.0 GPA; have no more than 10 s.h. of general education remaining; have completed the following courses with a minimum grade of C: ENGL 1100, 1200; MATH 1065 or 1066; PSYC 1000; SOCI 2110; have completed a written application; have a personal interview with a faculty member; and have completed a sequencing form (timetable) in consultation with the RCLS adviser. RCLS courses at the 3000 level and above cannot be taken before admission to the major. Any student majoring in management of recreation facilities and services must maintain a minimum cumulative 2.0 GPA and a minimum cumulative 2.0 GPA in all core and cognate courses to remain in good standing. Majors must earn a minimum grade of C in all required RCLS courses. A student wishing to appeal should contact the RCLS department chair within two weeks of notification of academic deficiency. Students
graduating from this program are eligible to sit for the examination to become a certified park and recreation professional and thereby acquire this valuable credential for professional advancement.

Minimum degree requirement is 126 s.h. of credit as follows:

1. General education requirements (See Section 6, Undergraduate Studies, Requirements for Baccalaureate Degree Programs.) including those listed below 42 s.h.

BIOI 1060. Environmental Biology (4) (F,S,SS) (GE:SC) or BIOI 1050, 1051 (3.1) (F,S,SS) (GE:SC) or BIOI 1100, 1101 (4.0) (F,S,SS) (GE:SC) or BIOI 1200, 1201 (4.0) (GE:SC)

ECON 2113. Principles of Microeconomics (3) (F,S,SS) (GE:SO)

MATH 1065. College Algebra (3) (F,S,SS) (GE:MA) (P: Appropriate score on mathematics placement test) or MATH 1066. Applied Mathematics for Decision Making (3) (F,S,SS) (GE:MA) (P: Appropriate score on mathematics placement test or approval of dept chair)

PHIL 2274. Business Ethics (3) (WI*) (F,S,SS) (GE:HU) or PHIL 2275. Professional Ethics (3) (WI*) (F,S,SS) (GE:HU) or PHIL 1110

Introduction to Philosophy (3) (WI*) (F,S,SS) (GE:HU)

PSYC 1000. Introductory Psychology (3) (F,S,SS) (GE:SO)

SOCI 2110. Introduction to Sociology (3) (F,S,SS) (GE:SO)

2. Common Core. 45 s.h. 57

RCLS 2000. Introduction to Leisure Services (3) (F,S,SS) (P: RCLS major or consent of instructor)

RCLS 3003, 3004. Leisure Programming and Laboratory (3.1) (F,S) (P: Declared RCLS RT major, or MRFS major or minor; RCLS 2000)

RCLS 3104. Public and Non-Profit Recreation (3) (F) (P: Declared MRFS major or minor; RCLS 2000)

RCLS 3120. Commercial Recreation and Tourism (3) (S) (P: Declared RCLS MRFS major or minor; RCLS 2000; or consent of instructor)

RCLS 3131. Special Recreation (3) (F) (P: Declared RCLS MRFS major or minor; RCLS 2000)

RCLS 3180. Work Experience Pre-Placement Seminar (1) (S) (P: Declared MRFS major or minor; RCLS 2000)

RCLS 3190. Work Experience Through Community/Commercial Recreation Agencies (2) (SS) (P: Declared MRFS major or minor; RCLS 3003, 3004; RCLS 3180; consent of adviser; minimum 2.0 GPA)

RCLS 3300. Outdoor Programming (3) (S) (P: Declared RCLS MRFS major or minor; RCLS 2000; RCLS 3003, 3004)

RCLS 4000. Research Methods and Techniques (3) (F,S) (P: Declared RCLS RT major, or MRFS major or minor; MATH 1065 or 1066; RCLS 3003, 3004)

RCLS 4002. Administration of Leisure Services (3) (F,S) (P: Declared RCLS MRFS major or minor; MATH 1065 or 1066; RCLS 3003, 3004)

RCLS 4004. Philosophical and Current Issues in Leisure (3) (F,S) (WI) (P: Declared RCLS RT major, or MRFS major or minor; RCLS 3003, 3004)

RCLS 4111. Design of Parks and Recreation Facilities (3) (S) (P: Declared MRFS major or minor; RCLS 3003, 3004; RCLS 3104)

RCLS 4120. Leisure Services Marketing (3) (S) (P: Declared RCLS MRFS major or minor; RCLS 3003, 3004; RCLS 3104)

RCLS 4122. Case Studies Leisure Management (3) (F) (P: Declared RCLS MRFS major or minor; RCLS 3003, 3004; RCLS 3120)

RCLS 4902. Internship Pre-Placement Seminar (2) (F,S) (P: Declared RCLS RT or MRFS major; minimum cumulative 2.0 GPA; consent of RCLS adviser)

RCLS 4990. Recreation Internship (12) (WI) (F,S,SS) (P: Declared RCLS RT or MRFS major or minor; RCLS 4902; senior standing; minimum cumulative 2.0 GPA; minimum grade of C in all RCLS courses; successful completion of all other degree requirements and current certification in first aid and CPR)

RCLS 5111. Recreational Facility Management (3) (S) (P: RCLS 3003, 3004; RCLS 3120; or consent of the instructor)

3. Concentration Area (Choose one.) 33 s.h.

Commerical Recreation and Tourism

Cognates (21 s.h.)

RCLS 3120. Commercial Recreation and Tourism (3) (S) (P: Declared MRFS major or minor; RCLS 2000 or consent of instructor)

RCLS 4121. Tourism Planning and Development (3) (P: RCLS 3120)

MGMT 3202. Fundamentals of Management (3) (F,S,SS) (P: ECON 1000 or 2113)

DSCI 2223. Introduction to Computers (3) (F,S,SS)

ACCT 2401. Financial Accounting (3) (F,S,SS) (P: MATH 1065 or 1066)

ITEC 3290. Technical Writing (3) (WI) (F,S,SS) (P: ENGL 1200)

FINA 2244. Legal Environment of Business (3) (F,S,SS)

Choose 12 s.h. from:

RCLS 2400. Facilitation and Leadership of Adventure-Based Programs (3) (F,S)
RCLS 2601. Leisure in Society (3) (F, SS)
RCLS 3104. Public and Non-Profit Recreation (3) (F). (P: Declared MRFS major or minor; RCLS 3003, 3004.)
RCLS 4111. Design of Parks and Recreation Facilities (3) (S). (P: Declared MRFS major or minor; RCLS 3003, 3004, 3104).
RCLS 5100. Aquatics Facilities Management (3)
RCLS 5101. Waterfront Facilities Operation (3)
HLTH 2125. 2126. Safety Education and First Aid (3) (F, SS) (P: HLTH 1000 C for 2125; HLTH 2126. C for 2126; HLTH 2125)
ECON 2113. Principles of Microeconomics (3) (F, SS) (GE:SO)
GEOG 2019. Geography of Recreation (3) (F) (GE:SO)
GEOG 4335. Geography of Tourism (3) (GE:SO)
MATH 2283. Statistics for Business (3) (F, SS) (P: MATH 1065 or 1066 or equivalent)
ACCT 2251. Managerial Accounting (3) (F, SS) (P: ACT 2401; DSCI 2223)
FINA 3724. Financial Management (3) (F, SS) (P: ECON 2113; MATH 2283; P: ACCT 2521)
MKTG 3832. Marketing Management (3) (F, SS) (P: ECON 2113)
MGMT 4262. Small Business Management (3) (WI) (F) (P: FINA 3724; MGMT 3202; MKTG 3852)
NUHM 1350. Introduction to Food Service and Lodging Management (3) (WI) (F, SS)
NUHM 3200. Dimensions of Tourism (3) (F) (P: NUHM 1350)
NUHM 4200. Travel and Tourism Management (3) (S) (P: NUHM 3200)

Recreation Management

Cognates (18 s.h.)
RCLS 3104. Public and Non-Profit Recreation (3) (F). (P: Declared MRFS major or minor; RCLS 3003, 3004.)
RCLS 3300. Outdoor Programming (3) (S) (P: Declared MRFS major or minor; RCLS 2000, 3003, 3004; or consent of instructor).
RCLS 4111. Design of Parks and Recreation Facilities (3) (S) (P: Declared MRFS major or minor; RCLS 3003, 3004, 2104)
ACCT 2401. Financial Accounting (3) (F, SS) (P: MATH 1065 or 1066)
ITEC 3290. Technical Writing (3) (WI) (F, SS) (P: ENGL 1200)
MGMT 3202. Fundamentals of Management (3) (F, SS) (P: ECON 1000 GE: SO or 2113 GE: SO)

Choose 15 s.h. from:
RCLS 2400. Facilitation and Leadership of Adventure-Based Programs (3) (F, S)
RCLS 2601. Leisure in Society (3) (F, SS)
RCLS 3120. Commercial Recreation and Tourism (3) (S) (P: Declared MRFS major or minor; RCLS 2000 or consent of instructor)
RCLS 4121. Tourism Planning and Development (3) (P: RCLS 3120)
RCLS 3301. Recreational Interpretation of Cultural and Natural Resources (3)
RCLS 3303. Wild Land Recreation Management (3)
RCLS 5100. Aquatics Facilities Management (3)
RCLS 5101. Waterfront Facilities Operation (3)
HLTH 2125. 2126. Safety Education and First Aid (3) (F, SS) (P: HLTH 1000 C for 2125; HLTH 2126; C for 2126; HLTH 2125)
Business Administration Minor courses (ECON 2113 may count toward general education SO requirement)
Exercise and Sport Science Minor courses (BIOL 1050, 1051, BIOL 2130, 2131 may count toward general education SC requirement)
Public Administration Minor courses (POLS 2000, POLS 3252 may count toward general education SO requirement)

Outdoor Recreation

Cognates (21 s.h.)
RCLS 2400. Facilitation and Leadership of Adventure-Based Programs (3) (F, S)
RCLS 3104. Public and Non-Profit Recreation (3) (F). (P: Declared MRFS major or minor; RCLS 3003, 3004.)
RCLS 3300. Outdoor Programming (3) (S) (P: Declared MRFS major or minor; RCLS 2000, 3003, 3004; or consent of instructor).
RCLS 3301. Recreational Interpretation of Cultural and Natural Resources (3)
RCLS 3303. Wild Land Recreation Management (3)
ACCT 2401. Financial Accounting (3) (F, SS) (P: MATH 1065 or 1066)
ITEC 3290. Technical Writing (3) (WI) (F, SS) (P: ENGL 1200)

Choose 12 s.h. from:
RCLS 2601. Leisure in Society (3) (F, SS)
RCLS 3120. Commercial Recreation and Tourism (3) (S) (P: Declared MRFS major or minor; RCLS 2000 or consent of instructor)
RCLS 4118. Tourism Planning and Development (3) (P: RCLS 3120)
RCLS 5100. Aquatics Facilities Management (3)
RCLS 5101. Waterfront Facilities Operation (3)
HLTH 2125, 2126. Safety Education and First Aid (3) (F,S,SS) (P: HLTH 1000 C for 2125; HLTH 2126; C for 2126; HLTH 2125)
Biol 3230/3231. Field Botany (4.0) (F, S, SS) (P: 3 hours of general BIOL with a lab.)
Biol 3240/3241. Field Zoology (4.0) (F, P: BIOL 1060 or 2250.)
Biol 5400. Wetland Ecology & Management (3) (S) (P: BIOL 2250, 2251 or consent of instructor.)
Coas 2025. Survey of Coastal and Marine Resources (3) (F)
Geol 1500/1. Dynamic Earth & Lab. (3, 1) (F, S, SS) (GE:SC),
Geol 1550. Oceanography (4) (F, S) (GE: SC),
Geol 1700. Environmental Geology (4) (F, S) (GE: SC),
Hist 3100. North Carolina History (3) (F, S) (GE: SO),
Libs 3200. The Art of Story Telling (3) (S)
Plan 3020. Environmental Planning (3) (F)

Cognate:
Acct 2401. Financial Accounting (3) (F, S, SS) (P: MATH 1065 or 1066)
Dsci 2223. Introduction to Computers (3) (F, S, SS)
FinA 2244. Legal Environment of Business (3) (F, S, SS)
Itec 3290. Technical Writing (3) (WI) (F, S, SS) (P: ENGL-1200)
Mgmt 3202. Fundamentals of Management (3) (F, S, SS) (P: ECON-1000 or 2113)

Choose 6 s.h. from:
Acct 2521. Managerial Accounting (3) (F, S, SS) (P: DSCI 2223)
Cdfr 4306. Directing Behavior and Development of Children (3) (F, S, SS)
Exss 2600. Children’s Movement Patterns (2) (F, S, SS) (P: EXSS-1000)
GerO 2400. Introduction to Gerontology (3) (GE: SO)
Plan 3021. Environmental Planning (3) (F)
PolS 3252. Public Administration (3) (F) (GE: SO)
Psyc 3206. Developmental Psychology (3) (WI, F, S, SS) (GE: SO) (P: PSYC-1000 or 1060)
Psyc 3221. Social Psychology (3) (F, S, SS) (GE: SO)
Psyc 3241. Personnel and Industrial Psychology (3) (F, S, SS) (GE: SO)
RCLS 2400. Facilitation and Leadership of Adventure Based Programs (3)
Soci 3289. Community Organization (3) (S) (GE: SO) (P: SORI 2110)
SPCH 2520. Business and Professional Communication (3) (F, S, SS) (GE: FA)

Other courses as approved by management of recreation facilities and services degree program coordinator

4. Electives to complete requirements for graduation. 6 s.h.

P 382.
Add new RCLS course.

4121 Tourism Planning and Development (3), F. P: RCLS 3120 or consent of instructor. Course focuses on strategies for planning and developing tourism as an industry within communities and regions, with special emphasis on appropriateness and sustainability of tourism development projects.

Unbank RCLS courses.

3301. Recreational Interpretation of Cultural and Natural Resources (3) P: Declared MRFS major or minor; RCLS 2000; or consent of instructor. Theory and practice in communication and education in parks and other recreation settings

3303. Wildland Recreation (3) P: Declared MRFS major or minor; RCLS 2000; or consent of instructor. An introduction to the concept of wildland management from historical, socio-cultural, management and individual perspectives.

Unbank and change title of RCLS course.
3202. Outdoor Programming for Individuals with Disabilities (formerly Camping for Special Populations) (2) (SS) P: permission of instructor. A study of the application of camping and outdoor adventure programming interventions for individuals with disabilities. Lab and/or field experience under the supervision of field supervisor and university instructor required.