

propagating tissues in the research lab. Topics include sterile techniques, nutrition, media preparation, establishment and maintenance of primary and secondary cultures, enumeration, and analysis. Weekly: 2 lectures and 1 lab. Prerequisite: BIOL166. Pre- or corequisite: CHEM231. *Spring*

**BIOL475** \$ ? (3)***Biology of Bacteria***

Study of the properties of bacteria that illustrate their function and relationship to other living systems. Topics include structure and function, classification, and interaction with the environment. Weekly: 2 lectures and two 2-hour labs. Prerequisites: BIOL166. Organic Chemistry background recommended. *Fall*

**ZOOL425** \$ ? (3)***Parasitology***

Emphasis on better known parasites of humans and animals. Attention given to ecological factors concerned with host-parasite contact, pathogenicity and pathology, and treatment and effect on parasitized populations. Weekly: 2 lectures and 1 lab. Prerequisites: BIOL166. *Fall*

**ZOOL475** \$ ? (3)***Neurobiology***

The neural basis of behavior, with some emphasis on the human nervous system, including cellular and molecular approaches to neuron function, development of neurons and circuits, and neuroendocrine mechanisms. Labs develop skills in electrophysiology and neuroanatomy. Weekly: 2 lectures and 1 lab. Prerequisite: BIOL166. *Fall*

## RESEARCH AND SPECIALIZED STUDIES

**BIOL405** (1-4)***Topics in \_\_\_\_\_***

Investigates various specialties of biology. Repeatable in different areas. *Fall, Spring, Summer*

**BIOL495** (1-4)***Independent Readings/Research***

Independent readings or research in biology under the direction of the instructor. Consent of instructor required. *Fall, Spring, Summer*

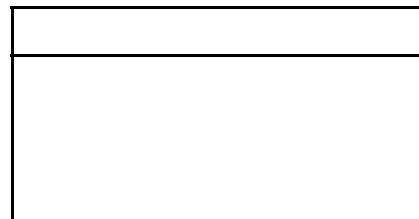
## GRADUATE

**BIOL516** (4)***Behavior of Marine Organisms*  
(offered only at Marine Station)**

Study of inter- and intra-specific behavior of marine animals and their behavioral response to the physical environment. Involves lab experience, field observation, and a research project. Instructor's permission required. *Summer*

**BIOL550** (3)***Issues in Origins and Speciation***

A comparative survey of the assumptions, attitudes, methods, and conclusions of science and religion in the handling of data. Attention is given to current scientific data and their relationship to



# Undergraduate Programs

**Core Courses—30**

CHEM131, 132, 200, 231, 232, 241, 242, 311, 312, 411, 412, 431, 441, BCHM421

**BS: Chemistry—38**

**Major Requirements:** Core plus CHEM415, 440.

**Research/Cooperative Experience:** An on-campus or off-campus research or cooperative educational experience. The student may satisfy this requirement by matriculating in CHEM495, HONS497, 498 or IDSC380.

**Cognate Courses:** CPTR125 or CPTR161; MATH141, 142; PHYS241, 242, 271, 272.

**BS: Chemistry—44**

(American Chemical Society approved)

**Major Requirements:** Core plus CHEM440, 415, 432, 442; and one course selected from the following: CHEM470, 474, or 475.

**Research/Cooperative Experience:** An on-campus or off-campus research or cooperative educational experience. The student may satisfy this requirement by matriculating in CHEM495, HONS497, 498 or IDSC380.

**Cognate Courses:** MATH141, 142, 286;

- CHEM312** (5) phase changes, solutions, molecular transport, chemical dynamics, and electrochemistry.  
**Seminar in Chemistry**  
 Continuation of CHEM311. This course is required of and open only to junior chemistry and biochemistry majors; freshmen and sophomore are encouraged to attend. Grading is on S/U basis. Weekly: 1 seminar. Prerequisite: CHEM311. *Spring*
- CHEM340** \$ (4) chemical bonding, atomic and molecular spectroscopies, and applications to chemical dynamics and statistical thermodynamics. Weekly: 3 lectures. Prerequisites: CHEM431, MATH286; MATH240 strongly recommended. *Spring*  
**(was CHEM341, 342)**  
**Environmental Chemistry**  
 A survey of environmental and energy-related problems. Topics include air and water pollution, energy and other resources, solid wastes and recycling, and toxic chemicals. Weekly: 3 lectures and a 4-hour lab. Not applicable towards a major in chemistry or biochemistry. Prerequisites: CHEM132; CHEM232 or CHEM200 strongly recommended. *Fall*
- CHEM410** \$ ? (2) Theory and practice of analytical separations and chemical analyses by chromatographic, optical  
**Forensic Chemistry**  
 Principles of chemistry as applied to the methods of analysis and identification of drugs. Rules of evidence as they apply to testimony in court. Observation of drug-related court procedures. Weekly: 1 lecture and 2 3-hour labs. Participation must be arranged with the instructor at least 2 months prior to beginning of course. Prerequisites: CHEM200, 232. *Spring Semester*
- CHEM411** (.5) **Instrumental Analysis**  
**(was CHEM401, 402)**  
**Seminar in Chemistry**  
 First half of semester consists of two meetings per week: one is an introduction to chemical literature and computer searching of Chemical Abstracts and chemical databases, the other meeting is the regular seminar series presented by students, faculty, and invited speakers. During the semester, each student prepares and presents a seminar. This course is required of and open only to senior chemistry and biochemistry majors, and attendance for both semesters is required for one credit. A deferred grade (DG) is assigned Fall Semester and is removed upon successful completion of CHEM412. Weekly: Two meetings during first half of semester, one meeting remainder of semester. Prerequisite: CHEM312. *Fall*
- CHEM412** (.5) **Physical Chemistry II**  
**(was CHEM402, 403)**  
**Seminar in Chemistry**  
 Continuation of CHEM411. During the semester, each student prepares and presents a seminar. This course is required of and open only to seniors. Prerequisite: CHEM411. *Spring*
- CHEM415** ? (4) **Advanced Inorganic Chemistry**  
**(was CHEM320, 420)**  
 Atomic and molecular structure, symmetry, group theory, solid state, acids and bases; structure, bonding, spectra, and reaction mechanisms of d-metal complexes, systematic chemistry of non-metals; organometallic chemistry and catalysis. Weekly: 4 lectures. Prerequisites: CHEM232, 431. *Spring*
- CHEM431** ? (3) **Physical Chemistry I**  
**(was CHEM421, 422)**  
 Fundamental concepts in chemical thermodynamics, free energy, chemical equilibria,