



UNIVERSITY OF COLORADO
AT COLORADO SPRINGS

COLLEGE OF LETTERS, ARTS
AND SCIENCES

Department of Biology

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Department of Chemistry

Department Chair: Dr. Ron Ruminski, Professor
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Department Website: <http://web.uccs.edu/chemistry/>

Objectives:

- ◆ Biologists seek to answer questions concerning all aspects of all living things. Biologists create new knowledge in diverse areas such as population dynamics, gene structure and function, health and disease, and increased yields of food products.
- ◆ Chemistry is concerned with the properties of matter, the interactions between substances, chemical reactions and the energy changes that accompany chemical reactions.
- ◆ Get more involved on campus! Join Beta Beta Beta, Gamma Sigma Epsilon, SAACS, the Forensic Club, the Homebrew Club, the Pre-Med Society or Students for Environmental Awareness and Sustainability (SEAS) to meet other students also interested in this field. Contact the ROAR office at roar@uccs.edu or 262-3470 for more information.

Biology/Chemistry Double Major - 40 Biology credits, 36 Chemistry credits	Credits
(Grade of 'C' or higher must be attained in <i>all</i> required courses.)	
BIOL 120 (<i>formerly 115/116</i>) General Biology I + Lab	4
BIOL 121 (<i>formerly 110/111</i>) General Biology II + Lab	4
BIOL 300 Biology Statistics	3
BIOL 302 Cell Biology	3
BIOL 321 Human Physiology	4
BIOL 383 Genetics	3
BIOL 401 Seminar in Biology	1
BIOL 425 Evolution	3
BIOL 481 Biochemistry I	3
CHEM 103/106 General Chemistry + Lab I/II	10
CHEM 331/333, 332/334 Organic Chemistry + Lab	10
CHEM 417 Analytical Chemistry I	4
CHEM 450 Biophysical Chemistry	3
CHEM 482 Biochemistry II	3
Complete FOUR Biology Elective courses from:	12-16
BIOL 205 Nutrition for Health Sciences	BIOL 430 Advanced Nutrition
BIOL 310 Microbiology: Bacteriology/Mycology	BIOL 435 Human Anatomy
BIOL 314 Microbiology: Virology	BIOL 455 Biomechanics/Kinesiology
BIOL 330 Exercise Physiology	BIOL 460 Biomechanics of Musculoskeletal Injury
BIOL 360 Histology	BIOL 477 Human Metabolism
BIOL 361 Vertebrate Embryology/Dev. Anat.	BIOL 479 Methods in Ex Physiology
BIOL 391 Immunology	BIOL 480 Adv. Exercise Physiology
BIOL 422 Epidemiology	BIOL 490 Pathobiology
One additional 400-500 level Approved Chemistry Courses from:	
CHEM 401, 402, 405 (<i>w/departmental approval</i>), 418, 420, 484, 486, 517, 531 or 532	3
<u>Auxiliary Requirements</u>	
PES 101, 102, 115, 215 Physics of Life Sciences + Labs I & II OR	
PES 111, 112, 116, 216 General Physics + Labs I & II	10
MATH 135 Calculus I	4
<u>General Education Requirements**</u>	
**Students are required as part of their general education requirements to complete courses in Oral Communication, Cultural Diversity, and Global Awareness. These courses are identified in the LAS section of the schedule of courses and in the bulletin.	
Composition Requirement	6
Oral Communication Requirement	3
Humanities Area Requirement	
General	9
Core	3
Social Science Area Requirement	+ 12
Total Credits- 45 upper division (300-400) level	120

MODEL DEGREE PROGRAM

BIOLOGY (BIOL) and CHEMISTRY (CHEM)

The following four-year plan lists all the specific course requirements for the Bachelor of Arts in Biology and Chemistry degree. The order in which these courses are taken may vary with course availability. **Students are responsible for completing all course prerequisites.** Please note that this is a *suggested* degree program; your program may vary.

Suggested First Year

FALL

- _____ ENGL 131 Rhetoric & Writing I
(Prer. of ENGL 099 or ACT 19+ or SAT 450+)*
- _____ BIOL 120 Gen. Biology I + Lab-4 cr (FALL ONLY)
(Prer. high school chemistry or coreq. CHEM 103)
- _____ General Humanities Elective or ID 101 Freshman Seminar
- _____ CHEM 103 General Chemistry I-5 cr
(Prer. 1 yr high school chemistry and 2 years high school math)

TOTAL=15 credits

SPRING

- _____ ENGL 141 Rhetoric & Writing II
(Prer. of ENGL 131 or ACT 29+ or SAT 650+)*
- _____ BIOL 121 Gen. Biology II + Lab-4 cr (SPRING ONLY) (Prer. BIOL 120)
- _____ MATH 135 Calculus I-4 cr (Prer. MATH105 or score of 10+ on Calc. Readiness Exam)
- _____ CHEM 106 General Chemistry II-5 cr
(Prer. CHEM 103 with grade of 'C' or higher)

TOTAL=16 credits

Suggested Second Year

FALL

- _____ BIOL 302 Cell Biology (Prer. BIOL 121 and CHEM 106)
- _____ PES 101/115 Physics for Life Science I + Lab-5 cr
(Prer. Two years high school algebra)
- _____ CHEM 331/333 Organic Chem. + Lab-5 cr
(Prer. CHEM 106 with grade of 'C' or higher)
- _____ BIOL 300 Biology Statistics (FALL ONLY)
(Prer. MATH 135)

TOTAL=16 credits

SPRING

- _____ BIOL 383 Genetics (SPRING ONLY) (Prer. BIOL 302)
- _____ PES 102/215 Physics for Life Science II + Lab-5 cr (Prer. PES 101/115)
- _____ General Humanities Elective
- _____ CHEM 332/334 Organic Chem. + lab - 5 cr
(Prer. CHEM 331/333 or 337 with grade of "C" or higher)

TOTAL=16 credits

Suggested Third Year

FALL

- _____ Approved BIOL course (Prer. May apply)
- _____ Oral Communication requirement
- _____ BIOL 481 Biochemistry (Prer. Bio 302, Chem 332)
- _____ CHEM 417 Analytical Chemistry I-4 cr. (FALL ONLY)
(prer. CHEM 106 with grade "C" or higher)
- _____ Social Science Elective

TOTAL=16 credits

SPRING

- _____ BIOL 321 Human Physiology (Prer. Biol 115/116)-4 cr
- _____ Approved BIOL course (Prer. may apply)
- _____ Social Science Elective (G)
- _____ CHEM 482 Biochemistry II (Prer. Biol 481)

TOTAL=14 credits

Suggested Fourth Year

FALL

- _____ CHEM 450 Biophysical Chemistry (FALL ONLY)
(prer. BIOL 120, CHEM 332/334, MATH 135, PES 102 or 112)
- _____ Approved BIOL course (Prer. may apply)
- _____ HUM 399 Core Humanities (Prer. of junior status)
- _____ Approved CHEM Elective (Prer. May apply)
- _____ Social Science Elective (C)

TOTAL=15 credits

SPRING

- _____ BIOL 401 Seminar in Biology-1 cr
(Prer. Senior status)
- _____ BIOL 425 Evolution (SPRING ONLY, ODD YRS)
- _____ Social Science Elective
- _____ Approved BIOL course (Prer. May apply)
- _____ General Humanities Elective

TOTAL=13 credits

All courses are 3 credits unless otherwise stated.

*ACT/SAT placement scores are based on the English section of the exam only.

Courses fulfilling General Humanities and Social Sciences, as well as the Global Awareness (G), Cultural Diversity (D) and Oral Communication (O) requirements, may be found in the Bulletin or in the current schedule.

Electives may be used toward a minor, a 2nd major, prerequisites, additional courses in Biology or Chemistry (up to 54 credits maximum) or just for fun!