BIOCHEMISTRY B.S.



ACADEMIC ADVISING

Partnering with students to successfully navigate college

Location: Main Hall 208 **Phone:** 719.255.3260

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Appointments: <u>www.uccs.edu/advising/current-students</u>

• Drop In Advising: Most Wednesdays, 1:00pm - 4:00pm Prospective Students: www.uccs.edu/admissions/contact

GENERAL ACADEMIC INFORMATION

Minimum Graduation Requirements

- 1. 120 credit hours
- 2. 45 upper-division credit hours (3000-4999 level)
- 3. 2.0 CU cumulative GPA
- Residency: Last 30 credit hours of degree must be completed while registered in the College of Letters, Arts, and Sciences at UCCS

Student Responsibilities

Students are required to know and follow:

- All academic policies set forth by the University, College, and academic department in the UCCS Catalog: <u>catalog.uccs.edu</u>
- All course prerequisites designated by the University. Failure to meet course prerequisites may result in an administrative drop of the course from a student's schedule. See degree audit for course prerequisites within the academic major.

MAJOR INFORMATION

Chemistry is the science about substances, their composition, structure, properties, and interactions. Chemistry helps explain the world and its workings and plays an important role in our lives. Chemists have contributed a great deal to technical advances of society and have made many important contributions to modern life. Everything is made from one or more chemical elements that occur in nature. Chemists use different kinds of chemical processes to make the elements found in nature more useful, and they create countless products that make our lives healthier, easier, and more enjoyable. There are as many specialties as there are areas of application of chemical principles. Biochemistry is the study of the structure, composition, and chemical reactions of substances in living systems.

| | Major Requirements | | | | | | | | |
|---|--|----------------|---|----|--|--|--|--|--|
| | Biochemistry Major | Course/Area | Course Title | | | | | | |
| | (58 hours) | CHEM 1401/1402 | General Chemistry I and Lab | 5 | | | | | |
| _ | | CHEM 1511/1513 | General Chemistry for Majors II and Lab | 5 | | | | | |
| | Requires a minimum of 58 credit hours of CHEM course work | CHEM 2201 | Introduction to Biochemical Principles | 3 | | | | | |
| ı | nours of Chelvi course work | CHEM 3101/3102 | Organic Chemistry I and Lab I | 4 | | | | | |
| • | Requires a minimum of 18 credit | CHEM 3111/3112 | Organic Chemistry II and Lab I | 4 | | | | | |
| | hours of upper-division (3000-4999 | CHEM 4001/4002 | Analytical Chemistry and Lab | 4 | | | | | |
| I | evel) CHEM course work. | CHEM 4221 | Biochemistry I | 3 | | | | | |
| | | CHEM 4222 | Biochemistry Laboratory | 3 | | | | | |
| | Must maintain a minimum 2.0 major GPA (all CHEM courses) to graduate. | CHEM 4231 | Biochemistry II | 3 | | | | | |
| (| | CHEM 4232 | Advanced Techniques in Biochemistry | | | | | | |
| | All auxiliary requirements must be completed in addition to the required | OR | OR | 3 | | | | | |
| | | CHEM 4502 | Bioanalytical Techniques | | | | | | |
| | | CHEM 4261 | Advanced Biochemistry | 3 | | | | | |
| 1 | major courses. | CHEM 4701 | Biophysical Chemistry (spring only) | 3 | | | | | |
| | | CHEM 4921 | Biochemistry Capstone | 3 | | | | | |
| | | Electives | Complete 12 hours of upper-division (3000+ level) Chemistry Electives. Up | 12 | | | | | |
| | | | to 6 hours may be from CHEM 4904/4905. | | | | | | |
| | | | Auxiliary Requirements | | | | | | |
| | | BIOL 1350 | General Biology II: Intro to the Cell | 3 | | | | | |
| | | MATH 1330 | Calculus for Life Sciences | 4 | | | | | |
| | | PES 1110/1160 | General Physics I and Lab | 5 | | | | | |
| | | PES 1120/2160 | General Physics II and Lab | 5 | | | | | |

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| General Education and Elective Requirements | | | | | | | |
|--|--|--|--|--|--|--|--|
| Composition (6 hours) | 1. ENGL 1310 2. ENGL 1410 | | | | | | |
| (e nours) | 3. PORT 3000 (0 Credits) – Writing Portfolio | | | | | | |
| Reasoning Skills | 1. MATH 1330 | | | | | | |
| (3 hours) | 2. CHEM 4001 | | | | | | |
| Area Requirements | Humanities – 9 credit hours of which 3 cred | dits must be HUM3990. | | | | | |
| (27 hours) | 2. Social Sciences – 9 credit hours | | | | | | |
| Maximum 2 courses from any one | 3. Natural Sciences – PES 1110, PES 1120, PES | 5 1160, PES 2160 | | | | | |
| discipline may be applied to the area | | | | | | | |
| requirements | NOTE: Cannot select courses from primary major courses for area requirements. | | | | | | |
| Courses may not be taken pass/fail | | | | | | | |
| Compass Curriculum | Component | Course | | | | | |
| (12 hours) | Gateway | GPS 1010 | | | | | |
| Explore and Navigate courses must be | Explore – Arts, Humanities and Cultures | See Degree Audit | | | | | |
| outside major and area requirements | Explore – Society, Behavior and Health | See Degree Audit | | | | | |
| Writing Intensive, Inclusiveness, and | Explore – Physical and Natural World | BIOL 1350 (included in auxiliary requirements) | | | | | |
| Sustainability courses can count | Navigate | HUM 3990 (included in LAS area requirements) | | | | | |
| towards other requirements within | Summit | CHEM 4921 (included in major requirements) | | | | | |
| · | Writing Intensive Courses (WIC) | HUM 3990 (included in LAS area requirements) | | | | | |
| degree | Two courses with one upper-division (3000+ level) | 2. CHEM 1513 (included in major requirements) | | | | | |
| | Inclusiveness | See Degree Audit | | | | | |
| | Sustainability | See Degree Audit | | | | | |
| General Electives (12 hours) | Complete additional courses to meet total and upper- | division requirements for your degree program. | | | | | |

Four-Year Degree Plan

| | Please note that this is an example degree program and your program may vary. Students are responsible for completing all course prerequisites. | | | | | | | | |
|----|---|----------------|-------|---|---|-------|--|--|--|
| | 1 | FALL | Hours | 1 | SPRING | Hours | | | |
| Je | | ENGL 1310 | 3 | | ENGL 1410 | 3 | | | |
| ō | | MATH 1330 | 4 | | CHEM 1511/1513 | 5 | | | |
| ä | | CHEM 1401/1402 | 5 | | BIOL 1350 | 3 | | | |
| Ye | | GPS 1010 | 3 | | Explore – Society, Behavior and Health Course | 3 | | | |
| | | TOTAL | 15 | | TOTAL | 14 | | | |

| | J | FALL | Hours | 1 | SPRING | Hours |
|------|---|--|-------|---|---------------------|-------|
| 8 | | CHEM 3101/3102 | 4 | | CHEM 3111/3112 | 4 |
| ≥ | | PES 1110/1160 | 5 | | PES 1120/2160 | 5 |
| Year | | Explore – Arts, Humanities & Cultures Course | 3 | | CHEM 2201 | 3 |
| | | Social Science Elective | 3 | | Humanities Elective | 3 |
| | | TOTAL | 15 | | TOTAL | 15 |

| بو | 1 | FALL | Hours | 1 | SPRING | Hours |
|-----|---|-----------------------------------|-------|---|---------------------|-------|
| | | CHEM 4001/4002 | 4 | | CHEM 4222 | 3 |
| ıre | | CHEM 4221 | 3 | | CHEM 4231 | 3 |
| ΙĒ | | HUM 3990 | 3 | | CHEM 4701 | 3 |
| ear | | UD (Upper-Division) CHEM Elective | 3 | | UD CHEM Elective | 3 |
| ۶ | | Social Science Elective | 3 | | Humanities Elective | 3 |
| | | TOTAL | 16 | | TOTAL | 15 |

| | J | FALL | Hours | 1 | SPRING | Hours |
|-------------|---|-------------------------|-------|---|------------------|-------|
| <u>_</u> | | CHEM 4232 or CHEM 4502 | 3 | | CHEM 4261 | 3 |
| no | | CHEM 4921 | 3 | | UD CHEM Elective | 3 |
| <u> </u> | | UD CHEM Elective | 3 | | General Elective | 3 |
| ea | | Social Science Elective | 3 | | General Elective | 3 |
| > | | General Elective | 3 | | General Elective | 3 |
| | | TOTAL | 15 | | TOTAL | 15 |