

BIOTECHNOLOGY UNDERGRADUATE CERTIFICATE

Introduction

Please click here (<http://catalog.ucdenver.edu/cu-denver/undergraduate/schools-colleges-departments/college-liberal-arts-sciences/integrative-biology/>) to see Integrative Biology department information.

Biotechnology is a rapidly growing field in Colorado and nationally that encompasses many disciplines. Agriculture, biofuels, biomedical biotechnology, pharmaceuticals, microbiology, and medical device development are all well-represented areas of biotechnology in Colorado. The Department of Integrative Biology offers a Certificate program in Biotechnology that allows students to acquire foundational knowledge and specialized skills relevant to these research areas. The certificate is designed to provide a strong background in biochemistry and molecular biology, with an emphasis on applied training via lab work and research experiences. Upon completion of the requirements, students obtain recognition in the form of a Certificate and official designation on their transcript.

Program Delivery

- This is an on-campus program.

Declaring This Certificate

Students may earn the certificate while working on their Bachelors Degree# or, the courses may be taken through non#degree admission. All admissions questions should be directed to the Admission's office. All questions regarding tuition and fees should be directed to the Bursar's office.

Students interested in completing the Biotechnology certificate should contact the Department of Integrative Biology. (https://clas.ucdenver.edu/integrative-biology/academics/certificates/#biotechnology_certificate-93) A certificate will be issued and noted on your transcript upon proof of satisfactory completion of the course work. You must contact the Biotechnology Certificate faculty advisor no later than the start of the semester of graduation in order for the certificate recognition to appear on your transcripts.

These program requirements are subject to periodic revision by the academic department, and the College of Liberal Arts and Sciences reserves the right to make exceptions and substitutions as judged necessary in individual cases. Therefore, the College strongly urges students to consult regularly with their Biotechnology advisor to confirm the best plans of study before finalizing them.

General Requirements

Students must satisfy all requirements as outlined below and by the department offering the certificate.

- Click here (<http://catalog.ucdenver.edu/cu-denver/undergraduate/academic-policies-procedures/>) for information about Academic Policies.

Program Requirements

1. Students must complete a minimum of 17 credits from approved courses.
2. Students must complete a minimum of 17 upper division (3000-level and above) credit hours from approved courses.
3. Students must earn a minimum grade of C (2.0) in all courses that apply to the certificate and must achieve a minimum cumulative certificate GPA of 2.0. All graded attempts in required and elective courses are calculated in the certificate GPA. Courses taken using P +/P/F or S/U grading cannot apply to certificate requirements.
4. All courses used to satisfy the requirements for the Certificate must be completed at CU Denver.

Program Restrictions, Allowances and Recommendations

1. Individual courses used to earn the Biotechnology Certificate carry prerequisites that must be met before enrolling.
2. All courses used to satisfy the requirements for the Certificate must be completed within a five-year period.
3. You must contact the Biotechnology Certificate faculty advisor (Dr. Chris Miller (chris.miller@ucdenver.edu)) no later than the start of the semester of graduation in order for the certificate recognition to appear on your transcripts.

Code	Title	Hours
<i>Complete all of the following required courses:</i>		15
BIOL 3124	Introduction to Molecular Biology	
BIOL 4024	Introduction to Biotechnology	
BIOL 4125	Molecular Biology Laboratory	
BIOL 3939	Internship	
	or BIOL 4880 Directed Research	
CHEM 3810	Biochemistry	
	or CHEM 482 General Biochemistry II	
<i>Complete one elective from among those listed below, or a course pre-approved by the Biotechnology Certificate faculty advisor:</i>		2
BIOL 3612	Cell Biology Laboratory	
BIOL 3763	Biostatistics	
BIOL 4055	Virology	
BIOL 4064	Cell Biology of Disease	
BIOL 4134	Human Genetics	
BIOL 4144	Medical Microbiology	
BIOL 4225	Genomics and Bioinformatics	
BIOL 4622	Topics in Immunology	
BIOL 4634	Biology of Cancer	
CHEM 3111	Analytical Chemistry	
CHEM 4121	Instrumental Analysis	
CHEM 4828	Biochemistry Lab	
CHEM/BIOL 4835	Biochemistry of Gene Regulation and Cancer	
Total Hours		17

To learn more about the Student Learning Outcomes for this program, please visit our website (https://clas.ucdenver.edu/integrative-biology/academics/certificates/#biotechnology_certificate-93).