Bioscience Technology (BSC)

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Bioscience technicians perform procedures in chemical and biotechnology laboratories, pharmaceutical manufacturing facilities, and research laboratories. Advanced skills in biology and chemistry, microbiology, and laboratory skills are important for a successful career in bioscience or biotechnology.

Students who successfully complete the Bioscience Technology program at Cincinnati State earn an Associate of Applied Science degree. The curriculum prepares graduates for entry-level employment in bioscience or biotechnology, or for transfer to a four-year institution to pursue a bachelor's degree in biological science or related fields. Students entering the program should have a strong background in or aptitude for the sciences, a willingness to follow structured methods, ability to explore molecules and cells, and a desire to help people and enhance the world through the use of biotechnology.

Bioscience Certificate (BSCC)

The Bioscience Certificate is designed for someone with a desire to learn the basics of the biotechnology field, either as an add-on to another degree or as a new career path. The certificate curriculum contains less rigorous biology and chemistry requirements than the degree program, but has most of the same laboratory courses. Students learn genetic engineering, DNA forensics, aseptic technology and microbiology basics, protein isolation techniques, protein and DNA electrophoresis, PCR technology, and more.

Bioscience employees are expected to pay attention to cleanliness, detail, and protocol; have background in biology and science concepts; and have good communication skills. Graduates may be hired as laboratory assistants using equipment specific to the biotechnology field, or as technicians in bio-manufacturing industries.

Bioscience Technology (BSC)

All degree-seeking students must complete a First Year Experience (FYE) course as part of the first 12 credit hours taken at Cincinnati State.

Program Prerequisite: IM 111 Computer Applications 1 or appropriate computer literacy placement test score

Semester 1		**Credits**
ENG 101	English Composition	3
BSC 105	Laboratory Skills for Bioscience	3
BSC 110	Biomanufacturing Workplace Regulations	3
BIO XXX Biology Sequence Elective 1		4
Semester 2		
BSC 115	Bioscience Laboratory Methods	3
MAT 151	College Algebra	4
BIO XXX Biology Sequence Elective 2		4
CHE XXX Chemistry Elective		4
Semester 3		
COMM 110	Public Speaking	3
XXX XXX Bioscience Elective		2
ENG XXX English Composition Elective		3
XXX XXX Humanities/ Social Sciences Elective 1		3
Semester 4		
IM 120	Electronic Spreadsheets: Microsoft Excel	3
BSC 150	Scientific Literacy for Bioscience	2
BSC 205	Molecular Genetics Laboratory	5

CHE XXX Organic Chemistry Elective		4
Semester 5		
BSC 210	Protein Purification and Analysis	5
XXX XXX Humanities/ Social Sciences Elective 2		3
MAT XXX Mathematics Elective		3
BIO XXX Advanced Biology Elective		3
Semester 6		
BSC XXX Bioscience Experiential Learning Elective		2
Total Credits:		69

Electives

Biology Sequence Electives		
Select one of the following:		
BIO 111 & BIO 112	Biology: Unity of Life and Biology: Diversity of Life	
BIO 131 & BIO 132	Biology 1 and Biology 2 [1]	
Chemistry Elective		
Select one of the following:		
CHE 110	Fundamentals of Chemistry	
CHE 121 & CHE 131 & CHE 122 & CHE 132	General Chemistry 1 and General Chemistry 1 Lab and General Chemistry 2 and General Chemistry 2 Lab [1]	
Bioscience Electives		
BSC 120	Cell Culture	2
BSC 160	Quality and Compliance in Biomanufacturing	3
BSC 230	Introduction to Bioinformatics	3
MET 230	Quality Control and Six Sigma	4
EVT 168	Radiation Safety	2
EVT 170	Water and Wastewater Treatment and Analysis	4
English Composition Elective		
ENG 102	Composition and Argument	3
ENG 103	Composition and Literature	3
ENG 104	Composition and Technical Communication	3
ENG 105	Composition and Business Communication	3
Humanities/Social Sciences Electives		
CULT 105	Issues in Human Diversity	3
or CULT 110	Social Issues in Technology	
PHI 110	Ethics	3
PSY 100	Applied Psychology: Human Relations	3
or PSY 102	Applied Psychology: Stress Management	
or PSY 110	Introduction to Psychology	
SOC 100	Survey of Social Issues	3
or SOC 105	Introduction to Sociology	
Organic Chemistry Elective		

Select one of the following:

CHE 111	Bio-Organic Chemistry	
CHE 201 & CHE 211 & CHE 202 & CHE 212	Organic Chemistry 1 and Organic Chemistry 1 Lab and Organic Chemistry 2 and Organic Chemistry 2 Lab [1]	
Mathematics Elective		
MAT 131	Statistics 1	3
or MAT 153	Pre-Calculus	
Advanced Biology Elective		
BIO 115	Human Genetics	3
BIO 250	Cell Biology	5
BIO 260	Genetics	5
BIO 270	Ecology	5
BIO 275	Animal Behavior	5
Bioscience Experiential Learning Elective		
BSC 280	Bioscience Capstone Project	2
BSC 191	Part-Time Cooperative Education 1: Bioscience	1
BSC 291	Full-Time Cooperative Education 1: Bioscience	2
BSC 294	Internship 1: Bioscience	2

[1] recommended for students planning to continue in a bachelor's degree science program

Bioscience Certificate

All certificate-seeking students must complete a First Year Experience (FYE) course as part of the first 12 credit hours taken at Cincinnati State.

Program Prerequisites: MAT 150 Intermediate Algebra (minimum grade C) or appropriate placement test score, and IM 111 Computer Applications 1 or appropriate computer literacy placement test score.

Semester 1		**Credits**
BSC 105	Laboratory Skills for Bioscience	3
BSC 110	Biomanufacturing Workplace Regulations	3
BIO 111	Biology: Unity of Life	4
IM 120	Electronic Spreadsheets: Microsoft Excel	3
MAT 151	College Algebra	4
Semester 2		
CHE 110	Fundamentals of Chemistry	4
COMM 110	Public Speaking	3
BSC 115	Bioscience Laboratory Methods	3
BSC 280	Bioscience Capstone Project	2
Total Credits:		29

Advanced Health Careers Preparatory Certificate (AHPC)

The Advanced Health Careers Preparatory Certificate is designed for students who already hold a degree and need to complete courses in biology, chemistry, or other fields in order to meet entrance requirements for advanced programs in health-related fields. Students work closely with an advisor to select courses that fulfill requirements for a specific institution.

Advanced Health Careers Preparatory Certificate

Program Prerequisite: A bachelor's degree from an accredited institution of higher education, or Program Advisor consent, is required to enroll in this program.

Semester 1	**Credits**
XXX XXX AHPC	4
Elective 1	

XXX XXX AHPC Elective 2	3
Semester 2	
XXX XXX AHPC Elective 3	4
XXX XXX AHPC Elective 4	3
Total Credits:	14

Electives

AHPC Electives

Complete at least 14 credits from courses listed below, with a minimum grade of C for all courses. Students should consult with the Program Advisor before registering for courses.

Biology		
BIO 115	Human Genetics	3
BIO 131	Biology 1	5
BIO 132	Biology 2	5
BIO 151	Anatomy and Physiology 1	4
BIO 152	Anatomy and Physiology 2	4
BIO 220	Microbiology	3
BIO 230	Pharmacology	3
BIO 240	Pathophysiology	3
Chemistry		
CHE 110	Fundamentals of Chemistry	4
CHE 111	Bio-Organic Chemistry	4
CHE 121	General Chemistry 1 [1]	4
CHE 122	General Chemistry 2 [2]	4
CHE 201	Organic Chemistry 1 [3]	3
CHE 202	Organic Chemistry 2 [4]	3
Other Electives		
DT 120	NUTRITION FOR A HEALTHY LIFESTYLE	3
PSY 225	Lifespan Development	3

1 must co-register for CHE 131 General Chemistry 1 Lab

2 must co-register for CHE 132 General Chemistry 2 Lab

3 must co-register for CHE 211 Organic Chemistry 1 Lab

4 must co-register for CHE 212 Organic Chemistry 2 Lab