

Biotechnology

Associate in Science

DIVISION OF SCIENCE, TECHNOLOGY, ENGINEERING & MATHEMATICS

Our Biotechnology program is internationally renowned and offers exciting, hands-on, and research-based study in this rapidly expanding scientific area. Through participation in national research collaborations, students are trained in the scientific disciplines most in demand by the biotechnology industry, academic and government laboratories, including the latest technologies related to DNA, RNA and Proteins, mammalian and plant cell culture, High-Performance Liquid Chromatography (HPLC), biologics development, gene therapy, and latest gene-editing techniques including CRISPR. These techniques will also provide a strong foundation for students who are willing to pursue their careers in four-year colleges/universities or advanced R & D laboratories. Since our biotechnology program is a research-based and peer mentoring intensive program structured to engage nontraditional students, our curriculum uses inquiry-based laboratories, and internships in world-renowned institutions to confer in-depth scientific knowledge to students.

Upon successful completion, the Associate in Science Degree in [Biotechnology](#) is awarded.

PROGRAM FOOTNOTES

Computer Science Electives:

CS 100 Computers and Technology,
CS 110 Introduction to Computer Science,
CS 123 Python Programming

Humanities Electives:

Art, Communication, English (EN 103 or higher), ESL (ES 100 or higher; up to 6 credits), Film, Foreign Language, Humanities, Literature, Music, Oral Communication, Philosophy, Photography, Sign Language, Theater Arts

Social Science Electives:

Anthropology, Economics, Geography, Government, History, Law, Psychology, Sociology

A grade of C or higher is required for all Biotechnology (BT) courses.

Quantitative skills are a MassBay graduation competency for associate degree programs. Prior to graduation, students must demonstrate this competency by completing a 100-level math course (not MAC); or placing into a 200-level mathematics course.

COURSE	COURSE TITLE	CREDITS
<i>First Year Semester 1</i>		
BI 110	Principles of Biology I w/ Lab	4
BT 101	Introduction to Biotechnology	3
CH 110	Principles of Chemistry I w/ Lab	4
EN 101	English Composition I	3
MA 102 *	College Algebra	3
		credits:
		17
<i>First Year Semester 2</i>		
BI 120	Principles of Biology II w/ Lab	4
		OR
BI 240	Forensic Microbiology	4
BT 201	Cell Culture	3
CH 120	Principles of Chemistry II w/ Lab	4
		3/4
EN 102	English Composition II	3
		credits:
		17/18
<i>Second Year Semester 1</i>		
BT 222	Cell and Gene Therapy	3
BI 246	Molecular and Developmental Biology	4
CH 201	Organic Chemistry I w/ Lab	4
		3
		credits:
		14
<i>Second Year Semester 2</i>		
BI 220	Immunology w/ Lab	4
CT 100	Critical Thinking	3
CH 210	Biochemistry I w/ Lab	4
		3
		credits:
		14
<i>Second Year Summer</i>		
BT 240	Research Internship	4
		OR
BT 247	Therapeutics Research Experience	4
		Total Credits:
		66/67

*Pre-Calculus Mathematics (MA 104) may be substituted.

This program qualifies as an Alternative Transfer Agreement (MassTransfer) with select public institutions in Massachusetts. For more information, visit www.mass.edu/masstransfer.