

BIOTECHNOLOGY CERTIFICATE

Award: Certificate in Biotechnology

No. of credits required: 32

For more information: Contact Associate Professor Jaclyn Madden, 443-412-2046, jmadden@harford.edu (August 15 - June 15); stem@harford.edu; or Admissions, 443-412-2109.

Program Description

The biotechnology certificate prepares students with the concepts, techniques, and skills identified by biotechnology industry members as needed for immediate employment in biotechnology, chemical, and biological laboratories. The certificate program is suitable for students currently working in biotechnology or medical technology fields or for those who have obtained a bachelor's degree in a science field and want to update their skills with additional training. The biotechnology industry is expected to continue to grow in Maryland and the region.

Program Goals

1. Explain the basic principles, concepts, and techniques of biotechnology.
2. Apply principles, methods, and quantitative skills to novel problems and situations.
3. Execute biotechnology laboratory tasks utilizing Standard Operating Procedures (SOPs) and Current Good Manufacturing Practices (CGMPs).
4. Demonstrate critical thinking and scientific process skills.
5. Evaluate appropriate sources of scientific information.
6. Analyze the role of biotechnology in society and employ the skills of scientific communication.
7. Demonstrate professional judgement and behaviors that adhere to principles of the responsible conduct of research.

Certificate Requirements

In order to earn a certificate from Harford Community College, students must demonstrate basic competencies in English, reading, and mathematics by completing: ENG 018 Integrated Reading and Writing, MATH 020 Pre-Algebra I, and/or a qualifying exam must be passed.

Required Courses

Code	Title	Credits
BIO 120	General Biology I (GL)	4
BIO 128	Introduction to Biotechnology	4
CHEM 111	General Chemistry I (GL)	4
BIO 211	Microbial Biotechnology	4
BIO 212	Principles of Biomanufacturing	4
BIO 213	Cell Culture Techniques	4
BIO 214	Molecular Techniques	4
BIO 215	Immunology Principles and Applications	4
Total Credits		32

Note: It is recommended that students complete the required courses for the biotechnology certificate in the sequence they are listed.

General Education Degree Requirements

Note: The following codes identify courses which satisfy the General Education Degree Requirements:

Behavioral/Social Science (GB)
 English Composition (GE)
 Arts/Humanities (GAH)
 Interdisciplinary and Emerging Issues (GI)
 Biological/Physical Laboratory Science (GL)
 Mathematics (GM)
 Biological/Physical Science (GS)