

# Biotechnology A.A.S. Degree Program

Division of Biology & Chemistry

Curriculum Code: 2311

Will Earn Upon Program Completion: Associate in Applied Science (A.A.S.) Degree

## **Why major in Biotechnology?**

This major prepares you for a career in the field of Biotechnology as a laboratory technician. With experience you may find positions in research, production, and development.

## **If I major in Biotechnology, can I transfer to an upper-division college or university?**

The major is job-oriented and not designed for transfer to a baccalaureate program. However, other colleges and universities will apply some or all of the courses you have taken towards a bachelor's degree, depending upon their program requirements.

## **Are there any requirements I must satisfy before I start taking courses in my major?**

The Basic Skills Test is a requirement for all majors. Remedial and/or college level courses can be taken while completing some General Education coursework.

## **How long will it take for me to complete this degree?**

If you do not need remedial courses and you take 17 credits per semester, you should be able to complete the program in two years. The time could potentially be shortened by taking courses in the Summer session.

## **Where should I direct specific questions about this program?**

Call the Division at (973) 877-3430.

## **Upon completion of this program, graduates will be able to:**

- ◆ Demonstrate mastery of the fundamental concepts of biology, chemistry, and the scientific method;
- ◆ Demonstrate a mastery of the fundamental concepts and current applications of cellular and molecular biology;
- ◆ Perform qualitative, quantitative and instrumental analysis of macromolecular samples using established molecular techniques and instrumentation;
- ◆ Use the computer for collecting and assessing laboratory and field data and for preparing reports;
- ◆ Maintain a laboratory notebook according to current Biotechnology industry standards documenting lab procedures, problem solving, data collection, and data analysis;
- ◆ Critically assess the ethical, social, legal and economic implications of current biotechnology research;
- ◆ Assess personal compliance with current lab safety procedures and OSHA guidelines.

## Biotechnology — A.A.S. Degree Program

<p><b>GENERAL EDUCATION REQUIREMENTS:</b> (27 credits)</p> <p><b>Communications (6 credits)</b>            ENG 101 College Composition I 3            ENG 102 College Composition II or 3            ENG 105 Technical Writing</p> <p><b>Social Science (6 credits)</b>            Select two courses from: ANT 101, 105; ECO 101, 102;            POL 101, 104; PSY 101, 102, 219; SOC 101, 108 6</p> <p><b>Lab Science/Math (12 credits)</b>            BIO 103 General Biology I 4            BIO 104 General Biology II 4            MTH 119 Pre-Calculus I 4</p> <p><b>Humanities (3 credits)</b>            HST 101, 102, 111, 112, 121, 122, 131, 132,            134, 135, 136, 137, 161, or 162 3</p> <p><b>MAJOR COURSE REQUIREMENTS:</b> (24 credits)</p> <p>BIO 228 Molecular Biology 4            BIO 229 Biotechnology Laboratory 4            BIO 230 Biotechnology Internship 4            CHM 103 General Chemistry I 4            CHM 104 General Chemistry II 4            MTH 120 Pre-Calculus II 4</p> <p><b>ADDITIONAL COURSE REQUIREMENTS:</b> (11 credits)</p> <p>CIS 137 Microcomputer Databases 3            Two Science electives 8</p> <p>Electives must be selected from the following courses:            BIO 211 Microbiology 4            BIO 220 Environmental Science 4            BIO 237 Genetics 4            CHM 203 Organic Chemistry I 4            CHM 204 Organic Chemistry II 4            PHY 101 Physics I 4</p> <p><b>Total Credits Required for Degree 62</b></p> <p>The minimum passing grade for all courses designated BIO, CHM, MTH or PHY is "C." If you earn a grade below "C," you need to repeat the course.</p>	<p><b>RECOMMENDED SEQUENCE OF COURSES:*</b></p> <p><b><u>First Semester</u></b></p> <p>BIO 103 General Biology I 4            CHM 103 General Chemistry I 4            ENG 101 College Composition I 3            MTH 119 Pre-Calculus I 4</p> <p><b><u>Second Semester</u></b></p> <p>BIO 104 General Biology II 4            CHM 104 General Chemistry II 4            ENG 102 College Composition II 3            MTH 120 Pre-Calculus II 4</p> <p><b><u>Third Semester</u></b></p> <p>Science Elective 4            BIO 228 Molecular Biology 4            BIO 229 Biotechnology Laboratory 4            Social Science requirement 3</p> <p><b><u>Fourth Semester</u></b></p> <p>BIO 230 Biotechnology Internship 4            Science Elective 4            CIS 137 Microcomputer Spreadsheet 3            Social Science Requirement 3            History Requirement 3</p>
---	--

**\*NOTE:** This plan assumes the completion of all required developmental courses in reading, writing, and mathematics as well as other pre- and co-requisites for some of the courses, as listed in the Course Descriptions section.