

# A.S. IN BIOTECHNOLOGY

Biotechnology involves the application of biology to develop new products and technologies to combat disease, reduce our environmental impact, provide cleaner fuel sources, improve food production, and create safer industrial processes. The Citrus College Biotechnology A.S. degree includes a mix of basic science courses and hands-on laboratory classes designed to provide essential technical training and experiences necessary to thrive in this growing industry. Students will gain the conceptual knowledge, practical skills, and confidence to obtain entry-level employment as biological technicians, manufacturing production technicians, quality control technicians, and environmental monitoring technicians in bioscience laboratories and companies. The program emphasizes work readiness skills, such as resume writing, teamwork, and communication. This degree is intended for students who wish to enter the workforce upon completion.

## Requirements

This degree requires meeting the Citrus College General Education and proficiency requirements combined with successful completion (grades of "C" and above) of the following major requirements:

Code	Title	Units
<b>Required courses:</b> <sup>1</sup>		
<i>Select either BIOT 107 or BIOT 108:</i>		
BIOT 107	Biotechnology: Transforming Society Through Biology	3
BIOT 108	Intro to Biotechnology: Real World Biology Applications	4
BIOT 110	Biotechnology I: Basic Lab Skills and Documentation	5
BIOT 125	Quality and Regulatory Practices in Biotechnology	3
BIOT 150	Biotechnology II: Biomanufacturing and Quality Principles	4
MATH 165 or MATH 165H	Introductory Statistics <sup>2</sup> Introductory Statistics - Honors	4
<i>Select either chemistry sequence:</i>		
CHEM 103 & CHEM 104	College Chemistry I and College Chemistry II	10
CHEM 111 & CHEM 112	General Chemistry I and General Chemistry II	10
<b>Total Units</b>		<b>29-30</b>

<sup>1</sup> Students may need to fulfill prerequisites before enrolling in required courses. Students are advised to consult the Citrus College catalog or speak with a counselor for more information.

<sup>2</sup> MATH 165 is degree applicable with or without MATH 065. If taken with MATH 065, only the units for MATH 165 will be counted towards the degree.

## Learning Outcomes

### A.S. Degree Level Student Learning Outcomes

Students completing the Biotechnology A.S. Degree will:

1. Calibrate and safely operate standard equipment and instrumentation utilized in biotechnology.
2. Document laboratory activities, experimental data, and procedures following Good Documentation Practice (GDP).
3. Describe the principles of Good Laboratory Practice (GLP) and Good Manufacturing Practice (cGMP), and perform tasks in accordance with these standards and established safety procedures.
4. Explain how biotechnology tools may be applied to address societal challenges.
5. Describe key concepts in quality and how regulatory oversight shapes the biotechnology industry.
6. Prepare for a job interview and generate a resume appropriate for entry-level positions in biotechnology.