

# MS in Biotechnology

Azusa Pacific's Master of Science in Biotechnology (<https://www.apu.edu/clas/programs/masters-in-biotechnology/>) prepares graduates for success in this rapidly growing field, providing training in key areas, including molecular and cellular biology, mathematical modeling, mining of biological databases, regulatory affairs, clinical trials, project management, and biomedical products manufacturing.

This 39-unit program merges interdisciplinary studies with practical application, giving you the opportunity to collaborate with industry professionals (<https://www.apu.edu/articles/the-benefit-of-hands-on-experience-in-biotechnology-graduate-programs/>).

APU's biotech degree program, an applied science master's degree, is designed for individuals (preprofessionals and industry professionals) with bachelor's degrees in molecular or cellular biology, biochemistry, applied mathematics, statistics, engineering, or computer science and an interest in working for companies immersed in these fields.

## Five-Year BS in Biochemistry + MS in Biotechnology Pathway

Undergraduate students can complete a Bachelor of Science in Biochemistry (<http://catalog.apu.edu/academics/college-liberal-arts-sciences/biology-chemistry/biochemistry-bs/>) (research emphasis) and Master of Science in Biotechnology in just five years. The combination of these two degrees prepares graduates for success in biotechnology careers. Biochemistry majors admitted to the MS in Biotechnology program can take up to 9 units of 500-level graduate coursework during their senior year, finishing the remaining 30 units for the master's degree over the next year (e.g., 6 units in the summer term, 9 units in the fall term, and 15 units in the spring term).

Students interested in completing this five-year pathway should apply to APU as a biochemistry major, and declare the research emphasis by the end of their sophomore year. During their junior year (after completing BIOL 280 with C- or better), the student must apply to the MS program. The graduate application fee will be waived. Students must maintain a 3.0 GPA or higher to be considered for the MS program and five-year pathway. Once a student has been accepted into the MS program, they can begin their graduate coursework in their senior year, according to the course requirements indicated in the catalog. For more information about this pathway, contact [biologyandchemistry@apu.edu](mailto:biologyandchemistry@apu.edu).

## Requirements

Code	Title	Units
<b>Course Requirements</b>		
BIOT 500	Biotechnology Internship	3
BIOT 510	Commercialization of Technology	3
BIOT 511	Molecular Biology, Pharmacology, and Toxicology of Biopharmaceutics	3
BIOT 512	Bioinformatics	3
BIOT 513	Regulatory Affairs for the Biotechnology Industry	3
BIOT 514	Probability and Statistics for the Biotechnology Industry	3
BIOT 515	Project Management for the Biotechnology Industry	3
BIOT 516	Ethics for Biomedical Products Industries	3
BIOT 517	Clinical Trials	3
<b>Project</b>		
BIOT 600A	Master's Degree Project I <sup>1</sup>	3
BIOT 600B	Master's Degree Project II	9
<b>Total Units</b>		<b>39</b>

<sup>1</sup> BIOT 600A is taken for 3 units in the fall semester of the student's second year, and BIOT 600B for 9 units in the spring semester of the second year.

## Admission

University graduate admission and program-specific requirements must be met before an application is complete (see Admission to the University (<http://catalog.apu.edu/admissions/>)). **Program-specific application requirements are available online (<https://tracking.cirrusinsight.com/74647a2d-e9a2-412f-9b55-9959c7aac4ec/apu-edu-graduateprofessionalcenter-admissions-requirements-program/>).**

International students should contact Graduate and Professional Admissions (<https://www.apu.edu/graduateprofessionalcenter/admissions/>) for application procedures.

## **Program Learning Outcomes**

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Students who successfully complete this program shall be able to:

1. Demonstrate a broad knowledge in the field of biopharmaceutics product development.
2. Appropriately discriminate and implement technical knowledge in professional settings.
3. Demonstrate the ability to coordinate and collaborate with multidisciplinary team professionals.
4. Effectively communicate key concepts in pharmaceuticals development orally.
5. Effectively communicate key concepts in pharmaceuticals development in writing.
6. Implement specialized skills in field based practice.
7. Evaluate normative biopharmaceutics business ethical challenges through a Christian worldview.