

Biotechnology PSM

COLLEGE OF SCIENCE AND TECHNOLOGY

Learn more about the Professional Science Master's in Biotechnology.

About the Program

The Professional Science Master's (PSM) program in Biotechnology is a two-year degree program hosted by the Department of Biology, with coursework taught by diverse faculty from Temple University, industry and government. Students work directly with our research faculty on real-world projects, gaining hands-on skills necessary to solve emerging problems. The program culminates in an independent research project based at Temple or one of its industry and government partners in Philadelphia.

Time Limit for Degree Completion: 2 years

Campus Location: Main

Full-Time/Part-Time Status: The degree program can be completed on a full- or part-time basis. Most of the classes are offered in the evenings or on weekends to enable full-time working professionals to be enrolled in the program. International students are required to register as full-time students.

Interdisciplinary Study: The two-year program consists of a series of multidisciplinary and interdisciplinary core courses that include current topics in biotechnology, analytical biotechnology, bioethics/policy, bioinformatics, environmental biotechnology and microbial biotechnology. Many of the courses are writing intensive and also provide students with opportunities to sharpen their oral presentation skills. All student research projects are developed with the cooperation of Temple faculty and members of our External Advisory Board under the guidance of the PSM Steering Committee.

Accreditation: Temple University is fully accredited by the Middle States Commission on Higher Education.

Job Prospects: Official job placement is not offered, but prospects are good. Philadelphia and the surrounding Delaware Valley constitute a primary hub for integrative biotechnology since the area is a major center for pharmaceutical companies, chemical industries and the health sciences. Philadelphia has also exhibited an increasing leadership presence in the emerging Green City movement. Given recent growth in the Biotechnology sector, the demand for a highly trained workforce with a strong science background has soared.

Non-Matriculated Student Policy: Non-matriculated students may enroll in a total of three courses (9 credits) with permission of the instructor and the Biology Department.

Financing Opportunities: Financial assistance in the form of Research or Teaching Assistantships is not offered.

Admission Requirements and Deadlines

Application Deadline:

Fall Priority Deadline: March 1; December 15 international

Spring Priority Deadline: October 30

Applications submitted after the priority deadline will be considered for admission on a rolling basis.

APPLY ONLINE to this graduate program.

Letters of Reference:

Number Required: 2

From Whom: Letters should be obtained from college/university faculty, preferably those in laboratory science areas, who are familiar with the applicant's academic and/or research abilities.

Coursework Required for Admission Consideration: Applicants should have a solid background in Biology, Chemistry, Engineering or Physics. The Biology Department's Graduate Committee may allow departures from course requirements upon review.

Bachelor's Degree in Discipline/Related Discipline: A baccalaureate degree in a science or engineering field is required.

Statement of Goals: In up to 500 words, explain your interest in this specific program and what career goals you have. Describe your work and academic experiences with specific mentions of internships, course projects, or research. Share any other relevant information that you feel should be taken into consideration.

Transcripts: Unofficial transcripts are considered at the time of applying. Official transcripts are required when accepting the offer at the time of deposit. Official transcripts can be sent to cst.gi@temple.edu

Standardized Test Scores:

GRE: Optional

Applicants who earned their baccalaureate degree from an institution where the language of instruction was other than English, with the exception of those who subsequently earned a master's degree at a U.S. institution, must report scores for a standardized test of English that meet these minimums:

- TOEFL iBT: 90
- IELTS Academic: 6.5
- PTE Academic: 61
- Duolingo: 110

Resume: Current resume required.

Interview: May be required on a case-by-case basis.

Transfer Credit: Graduate credits from an accredited institution may be transferred into the Biotechnology PSM program. The credits must be equivalent to coursework offered by the Biology Department at Temple University. A grade of "B" or better must have been earned for the credits to transfer. The Biology Department Graduate Committee makes recommendations to the Department Chair for transferring credit on an individual basis. The maximum number of credits a student may transfer is 6.

Program Requirements

General Program Requirements:

Number of Required Beyond the Baccalaureate: 30

Required Courses:

Code	Title	Credit Hours
Core Courses		
BIOL 5479	Biotechnology	3
BIOL 5501	Analytical Biotechnology	1.5
BIOL 5502	Microbial Biotechnology	3
BIOL 5503	Biotechnology Laboratory I	3
BIOL 5504	Biotechnology Laboratory II ¹	3
BIOL 5505	Ethics Regulation and Policy in Biotechnology	3
BIOL 5506	Professional Development Seminar (PSM)	1
BIOL 5521	Nucleic Acid Technologies	1.5
Any Bioinformatics or Genomics 5000-level course		3
Electives ²		6
Capstone Course		
BIOL 9995	Capstone Project	2
Total Credit Hours		30

¹ With approval from the program director, students may request to waive this course and replace it with an alternate course that aligns with the goals of the degree program.

Culminating Event:

Independent Research Project:

The Biotechnology PSM offers technical and leadership training to address environmental priorities and human health. In this vein, students select an independent research project (BIOL 9995 Capstone Project) by the end of their first year with mentors at Temple and/or approved co-mentors at any off-campus sites, including pharmaceutical companies and government agencies.

Project proposals, which are approved by the PSM Steering Committee, foster technical and intellectual skill building. At the end of the program, the project is presented in written and oral formats to further develop communication skills. These features provide graduates with knowledge and leadership skills to help tackle real-world problems using biotechnology.

Accelerated Programs

Undergraduate students may opt to pursue an accelerated +1 program, enabling them to complete both a bachelor's degree and master's degree in less time than the traditional route.

The accelerated pathway for the Biotechnology PSM is available to students pursuing the following programs:

- Biology BA or BS
- Biochemistry BS
- Genomic Medicine BS
- Genomic Medicine BS with Pre-Medicine concentration
- Integrative Genetics and Genomics BS
- Natural Sciences BA or BS
- Neuroscience: Cellular and Molecular BS

Cohort Code: XPSMBIOTEC

Minimum Cumulative GPA: 3.25

Graduate Courses Approved to Count for Both Undergraduate and Graduate Degrees

Code	Title	Credit Hours
BIOL 5112	Fundamentals of Genomic Evolutionary Medicine ¹	3
BIOL 5501	Analytical Biotechnology	1.5
BIOL 5502	Microbial Biotechnology	3
BIOL 5505	Ethics Regulation and Policy in Biotechnology	3
BIOL 5521	Nucleic Acid Technologies	1.5

¹ BIOL 5112 fulfills the BIOL 3112 requirement for the Genomic Medicine BS major.

Suggested Academic Plan

Course	Title	Credit Hours
Year 3		
Fall		
BIOL 5505	Ethics Regulation and Policy in Biotechnology	3
Credit Hours		3
Spring		
BIOL 5112	Fundamentals of Genomic Evolutionary Medicine	3
Credit Hours		3
Year 4		
Fall		
BIOL 5501	Analytical Biotechnology	1.5
BIOL 5521	Nucleic Acid Technologies	1.5
Credit Hours		3
Spring		
BIOL 5502	Microbial Biotechnology	3
Credit Hours		3
Total Credit Hours		12

Admissions Criteria

Candidates for the +1 program must:

- apply during the spring semester of sophomore year or prior to the start of senior year.
- have a 3.25 undergraduate GPA before approval.

- have two faculty members submit a letter of recommendation to cst.gi@temple.edu.
- complete the remaining credits for the master's in the year following undergraduate graduation.

Application: <https://cst.temple.edu/admissions/graduate-admissions>

Contact Information

Darius Balciunas, PhD
darius@temple.edu
215-204-1611

Learn more about the accelerated program in Biotechnology and other College of Science and Technology +1 programs.

Contacts

Program Web Address:

<https://www.temple.edu/academics/degree-programs/biotechnology-psm-st-biot-psm>

Department Information:

Dept. of Biology
255 Biology-Life Sciences Building
1900 N. 12th Street
Philadelphia, PA 19122-6078
cst.psm@temple.edu
215-204-8842

Submission Address for Application Materials:

<https://cst.temple.edu/academics/graduate-programs/apply-now>

Department Contacts:

Program Director:
Darius Balciunas, PhD
darius@temple.edu
215-204-1611