

Psychology and Biological Sciences, B.S.

Psychology and Biological Sciences Unified Major

Gordon Rule, *Department Head, Biological Sciences*
Susanne Ferber, *Department Head, Psychology*

Overview

This major is intended to reflect the interdisciplinary nature of current research in the fields of biology and psychology, as well as the national trend in some professions to seek individuals broadly trained in both the social and natural sciences.

Note: Students entering from the Dietrich College of Humanities and Social Sciences will earn a *Bachelor of Science in Psychology and Biological Sciences*. Students in the Mellon College of Science will earn a *Bachelor of Science in Biological Sciences and Psychology*.

Depending on a student's home college (DC or MCS), General Education (GenEd) requirements will be different. GenEd requirements for DC (<http://coursecatalog.web.cmu.edu/schools-colleges/dietrichcollegeofhumanitiesandsocialsciences/general-education/>) and MCS (<http://coursecatalog.web.cmu.edu/schools-colleges/melloncollegeofscience/general-education/>) are found on their respective Catalog pages.

As a note, students who completed psychology courses under the old numbering system will still have those courses count towards the requirements previously specified. New course numbers will take effect starting Fall 2025. Spring 2026 courses will be updated once course scheduling begins. The old course numbers remain in use until then, with catalog updates reflecting the changes beginning Fall 2026.

Program Learning Outcomes

Upon graduation recipients of this degree will:

- **Foundational Breadth Across Psychology & Biological Sciences:** Demonstrate core knowledge in genetics, biochemistry, cell biology, behavioral science, and research methods.
- **Acquire a Deep Understanding in at least One Area in Psychology & Biological Sciences:** Apply foundational knowledge to advanced concepts (e.g., cognitive science/neuroscience; cellular/molecular; systems/behavior), typically through 300-level+ coursework.
- **Scientific Inquiry & Problem Solving:** Apply the scientific method to formulate questions and hypotheses; design studies/experiments on behavior and biological systems; collect, manage, analyze, and interpret data using appropriate tools and statistics; and draw conclusions.
- **Information Literacy & Scholarly Communication:** Locate, critically evaluate, and synthesize primary and secondary literature; communicate clearly, logically, and accurately in written, oral, and visual formats for scientific and lay audiences.
- **Professionalism, Ethics, & Collaboration:** Demonstrate curiosity, critical thinking, teamwork, and the responsible conduct of research (ethics, rigor, reproducibility, and integrity).

Degree Requirements

Biological Sciences		Units
03-151	Honors Modern Biology	10
or 03-121	Modern Biology	
03-201	Undergraduate Colloquium for Sophomores ^{*Only required for MCS Students}	2
03-231	Honors Biochemistry	9
or 03-232	Biochemistry I	
03-320	Cell Biology	9
	*New course number (03-240) starting Fall 2027	
03-220	Genetics	9
	*New course number (03-330) starting Fall 2027	
or 03-221	Genomes, Evolution, and Disease: Introduction to Quantitative Genetic Analysis	
03-343	Experimental Techniques in Molecular Biology	12
03-411	Topics in Research ^{*Only required for MCS Students}	1
03-412	Topics in Research ^{*Only required for MCS Students}	1
03-xxx	General Biology Elective ¹	9
03-3xx	Advanced Biology Elective ¹	18
Total Biology units		80

¹ Please see description and requirements for electives under the B.S. in Biological Sciences section of this Catalog.

Mathematics, Statistics, Physics and Computer Science		Units
21-120	Differential and Integral Calculus (prerequisite: 21-090)	10
21-122	Integration and Approximation	10
36-200	Reasoning with Data	9
36-309	Experimental Design for Behavioral & Social Sciences	9
or 85-309	Statistical Concepts and Methods for Behavioral and Social Science	
33-121	Physics I for Science Students	12
or 33-141	Physics I for Engineering Students	
33-122	Physics II for Biological Sciences and Chemistry Students ^{*Only required for MCS Students}	9
or 33-142	Physics II for Engineering and Physics Students	
15-110	Principles of Computing	10-12
or 15-112	Fundamentals of Programming and Computer Science	
or 02-120	Programming for Scientists	
Total Science units		69-71

Chemistry		Units
09-105	Introduction to Modern Chemistry I	10
09-106	Modern Chemistry II	10
09-217	Organic Chemistry I	9
09-218	Organic Chemistry II	9
09-207	Techniques in Quantitative Analysis	9

09-208	Techniques for Organic Synthesis and Analysis	9
Total Chemistry units		56

Psychology Courses		Units
85-100	Introduction to Psychology	9
85-170	Foundations of Brain and Behavior	9
85-1xx	Survey Psychology Course	9
85-300	Introduction to Research Methods	9
85-4xx	Advanced Psychology Electives	18
Total Psychology units		54

Additional Advanced Elective		9 units
(Choose one of the following courses)		
85-4xx	Advanced Psychology Elective	9
03-3xx	Advanced Biology Elective	9

Additional Laboratory or Research Methods		9-12 units
(Choose one of the following courses)		
03-344	Experimental Biochemistry	12
03-345	Experimental Cell and Developmental Biology	12
03-346	Experimental Neuroscience	12
85-310	Research Methods in Cognitive Psychology	9
85-330	Developmental Research Methods	9
85-350	Social Research Methods	12
85-370	Cognitive Neuropsychology Research Methods	9

Elective Units		Units
Free Electives		33-36
MCS Nontechnical Breadth or DC General Education requirements		36-48
Total Elective units		69-84

Minimum number of units required for degree: 360