

# BIOLOGY, MS

Natural Sciences, Mathematics, and Engineering (nsme) (<https://catalog.csub.edu/general-information/csub-information/school-natural-sciences-mathematics-engineering/>)

Department of Biology (<https://catalog.csub.edu/general-information/csub-information/school-natural-sciences-mathematics-engineering/department-biology/>)

Department Chair: Carl Kloock

Office: Science Building I, 114

Phone: (661) 654-3089

Email: [vmayorga@csub.edu](mailto:vmayorga@csub.edu)

[www.csub.edu/Biology/](http://www.csub.edu/Biology/) (<http://www.csub.edu/Biology/>)

Program Maps for Natural Sciences, Mathematics, and Engineering (<https://programmmap.csub.edu/academics/interest-clusters/4e942a6e-b8e4-4b60-a1ae-334235acc581/>)

## Program Description

The Department of Biology offers a graduate program leading to a Master of Science in Biology degree. The Master of Science with a thesis option is intended to prepare students for professional positions in state and federal agencies, the environmental consulting industry, and for further graduate studies. The Master of Science with a non-thesis option is intended for working professionals, especially high school teachers, and emphasizes course work. A broad range of faculty research interests, easy access to diverse biological environments, and a range of modern research facilities permit the student to select from a broad spectrum of research topics.

Faculty interests include field biology, conservation biology, physiology, comparative morphology, plant ecophysiology, plant anatomy, plant pathology, micro- and molecular biology, molecular evolution, ecology, systematics, and behavior.

## Admission Requirements

### Application Process and Program Requirements

#### Application for the Master of Science in Biology

Persons seeking an MS in Biology must apply to both the university and to the MS Biology graduate program for admission to this specific graduate program. Students will be admitted into the MS in Biology program with either conditionally classified status or classified status.

#### Admissions Requirements for the Master of Science in Biology

An earned bachelor's degree in the biological sciences or a bachelor's degree in a related science with a grade of a C or higher in course work equivalent to

Code	Title	Units
BIOL 3010	General Genetics	3
BIOL 3020	General Physiology	3
BIOL 3110	General Ecology	3

BIOL 3120	Research Design and Analysis	4
BIOL 4100	Evolution	3

1. An undergraduate GPA of at least 3.0 in the last 90 quarter or 60 semester units of course work.
2. Graduate Records Examination (GRE) scores of greater than the 50th percentile in both the verbal and quantitative sections of the exam.
3. Submission of three letters of recommendation.
4. Formal decision by the Departmental Graduate Committee to accept the student into the graduate program. The decision will be based on a formal application procedure, which includes evaluation of GPA, GRE scores, letters of recommendation, and other materials that may be required by the Committee and/or offered by the student.

## Transfer credits and Out-of-program units

A maximum of 9 semester units may be applied toward the fulfillment of requirements of the MS Biology program at the time that a student enters the MS Biology program. This includes units from another accredited college or university, from CSUB Open University, or out-of-program units taken at CSUB. Out-of-program units include any units taken while a student does not have graduate standing within the MS Biology program. These units must be declared at the time that a student applies to the CSUB MS Biology program and their ability to be applied toward the graduate program will be assessed as part of application review. Once admitted to the MS Biology program, no new or additional transfer or out-of-program units are permitted to be applied toward degree requirements, including courses taking through CSUB Open University.

## Graduate Student Classifications

### Classified Graduate Student

Acceptance as a Classified Graduate Student indicates that space has been made available for the student within the program and that the student has met the minimum preparation requirements to commence the program as listed below.

1. An acceptable baccalaureate degree from an accredited institution and a grade of a C or higher in course work equivalent to

Code	Title	Units
BIOL 3010	General Genetics	3
BIOL 3020	General Physiology	3
BIOL 3110	General Ecology	3
BIOL 3120	Research Design and Analysis	4
BIOL 4100	Evolution	3

2. An undergraduate GPA of at least 3.0 in the last 90 quarter or 60 semester units of course work.
3. Graduate Records Examination scores of greater than the 50th percentile in both the verbal and quantitative sections of the exam.
4. Acceptance into an academic advising relationship with a departmental faculty member (thesis-option only).
5. Acceptance will only be granted if space is available for the student in the program.

### Conditionally Classified Graduate Student

Students who fail to meet entirely one or more of the criteria for admission as a Classified Graduate Student may, at the discretion of the Biology Graduate Admissions Committee, be admitted as a Conditionally Classified Graduate Student. These conditions may include, but are not limited to, specific prerequisite courses, GPA, GRE scores, etc. Once

the student has met all conditions specified by the Biology Graduate Admissions Committee, the student can apply to the Graduate Committee to have their classification changed to Classified Graduate Student. A student may receive credit toward program requirements for no more than 10 units of graduate applicable coursework taken prior to a student successfully advancing to Classified standing. This 10-unit limit includes all coursework taken prior to obtaining Classified standing, including transfer and out-of-program units and units taken while a conditionally classified student within the MS Biology program. The transition to Classified Status must be accomplished within one semester after acceptance as a Conditionally Classified Graduate Student. Students that do not meet this requirement will not be permitted to remain enrolled in the program.

Students admitted as a Conditionally Classified Graduate Student are not allowed to enroll in any 6000-level courses. They are restricted to 5000- and 4000-level courses for which they have met prerequisites.

## Advancement to Candidate Status

Acceptance as a candidate indicates that the student has completed at least 16 semester units within their approved Plan of Study and that there is a reasonable expectation that the student will complete all remaining requirements within one year. Classified Graduate Students will be advanced to Candidate Status when they have met the following criteria:

1. Completion of all requirements for Classified Status.
2. Completion of at least 16 semester units of courses applicable to the Master of Science Degree in Biology with a grade of "B" or better in all courses within the Plan of Study and graduate GPA of at least 3.0.  
**Students in the thesis track must also:**
3. Obtain approval of the student's Master's thesis research topic by the Departmental Graduate Program Director and the student's Thesis Committee.
4. Obtain certification by the student's thesis advisor that there is a reasonable expectation that the student will satisfactorily complete the Master's thesis within one year.

Time limits have been set for completion of requirements at each level of status. Admission to Classified Status must be accomplished within one semester after acceptance as a Conditionally Classified Graduate Student. No more than 10 semester units may be taken for graduate credit until all requirements for Conditionally Classified students have been satisfied. Admission to Candidate Status must be attained within two calendar years after acceptance as a Classified Graduate Student. All requirements and graduation are to be completed within five calendar years after acceptance into the MS Biology program. The five-year time limit can be extended by petition to and approval from the Departmental Graduate Committee, but may not exceed seven calendar years after acceptance into the program.

Completion of all requirements for the Master of Science in Biology require satisfactory completion of all courses in an approved Plan of Study with a grade of "B" or better and satisfactory completion of an exit examination or thesis, including oral examination and any revisions required by the Thesis Committee or Departmental Graduate Committee, and maintaining a 3.0 GPA.

## Program Requirements Requirements for Thesis Option (30 Units)

Code	Title	Units
<b>Thesis-Option</b>		
BIOL 5100	Advanced Experimental Design and Analysis	4
BIOL 5010	Current Topics in Biology <sup>1</sup>	6
BIOL 6010	Seminar in Biology	2
BIOL 6911	Thesis <sup>2</sup>	5
BIOL 6921	Thesis Defense	1
<b>Electives Courses <sup>3</sup></b>		
Select two of the following:		8
BIOL 4310	Conservation Biology	
BIOL 4320	Population and Community Ecology	
BIOL 4330	Behavioral Ecology	
BIOL 4340	Chemical Ecology	
BIOL 4350	Environmental Microbiology	
BIOL 4360	Aquatic Ecology	
BIOL 4410	Entomology	
BIOL 4420	Plant Diversity	
BIOL 4430	Wildlife Biology	
BIOL 4440	Molecular Genetics	
BIOL 4450	Genomics and Bioinformatics	
BIOL 4460	Evolutionary Genetics	
BIOL 4510	Comparative Vertebrate Structure	
BIOL 4520		
BIOL 4530	Terrestrial Ecosystem Ecology	
BIOL 4540	Physiological Plant Ecology	
BIOL 4550	Plant Structure and Function	
BIOL 4560	Plant Pathology	
BIOL 4700	Special Topics in Biology <sup>4</sup>	
BIOL 5010	Current Topics in Biology <sup>5</sup>	
BIOL 5710	Advanced Topics in Biology <sup>4</sup>	
BIOL 5901	Research	
BIOL 5911	Graduate Practicum in the Teaching of Biology	
GEOL 4050	GIS for Natural Sciences	
GEOL 4770	Special Topics in Geology <sup>4</sup>	
GEOL 4771	Special Topics in Geology <sup>2 4</sup>	
GEOL 5070	Early Life on Earth	
GEOL 5770	Advanced Topics <sup>4</sup>	
GEOL 5771	Advanced Topics <sup>2 4</sup>	
GEOL 6770	Advanced Topics in Geology <sup>4</sup>	
MATH 5210	Applied Statistical Computing and Multivariate Methods	4
<b>Total Units</b>		<b>30</b>

<sup>1</sup> 2 units each and repeated three times

<sup>2</sup> taken over multiple semesters in 1-3 unit increments

<sup>3</sup> 4000-, 5000-, or 6000-level courses. Selection of elective courses must be approved by Graduate Director (non-thesis option) or Thesis Committee (thesis option). Selection of elective courses must be approved by Graduate Director (non-thesis option) or Thesis Committee (thesis option)

<sup>4</sup> may be repeated for credit

<sup>5</sup> when repeated in addition to the three required courses