MS IN BIOLOGICAL SCIENCES

In Workflow

1. BIO Committee Chair (gilkerson@csus.edu)
2. BIO Chair (trpeavy@csus.edu)
3. NSM College Committee Chair (mikkel.jensen@csus.edu)
4. NSM Dean (datwyler@csus.edu)
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11. Registrar's Office (k.mcfarland@csus.edu)

Approval Path

1. 2025-10-15T19:34:48Z
   Jonathan Gilkerson (gilkerson): Approved for BIO Committee Chair
2. 2026-08-21T23:04:08Z
   101014702: Approved for BIO Chair
3. 2026-09-16T23:04:28Z
   Mikkel Jensen (mikkel.jensen): Rollback to Initiator
4. 2026-09-24T00:18:53Z
   Jonathan Gilkerson (gilkerson): Approved for BIO Committee Chair
5. 2026-09-24T15:59:06Z
   Thomas Peavy (trpeavy): Approved for BIO Chair
6. 2026-10-08T01:14:23Z
   Mikkel Jensen (mikkel.jensen): Approved for NSM College Committee Chair
7. 2026-10-08T15:32:53Z
   Chris Taylor (ctaylor): Approved for NSM Dean

History

1. Apr 30, 2018 by clmig-jwehrheim
2. Jun 12, 2019 by Shannon Datwyler (datwyler)
3. Mar 7, 2023 by Jim Baxter (jbaxter)
4. Apr 14, 2023 by Katie Dickson (katiedickson)

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Changes proposed by: Rob Crawford (215236945)

Academic Group: (College)

Natural Sciences & Mathematics

Academic Organization: (Department)

Biological Sciences

Catalog Year Effective:

2026-2027 Catalog

Individual(s) primarily responsible for drafting the proposed degree major program:

Name (First Last)	Email	Phone 999-999-9999
Rob Crawford	robert.crawford@csus.edu	9162786535

Program Snapshot

Type of Program:
Major

Program Change Type:
Non-Substantive

Title of the Program:
MS in Biological Sciences

Designation: (degree terminology)
Master of Science

Delivery Mode:
Fully Face to Face

Support Mode:
State Support

Please see the CSU/CIP Code Crosswalk: https://www.csus.edu/academic-affairs/curriculum-workflow/_internal/_documents/csu_codes_to_cip.pdf

TMC Templates: https://c-idsystem.org/transfer-efforts/

Establishment of a master's degree program should be preceded by a national professional accreditation of the corresponding bachelor's degree major program.

Will this program require accreditation?
No

Provide a clear, concise overview of the program proposal (new or change) and provide a justification. For NEW programs describe the purpose and focus of the program, identify the target student population(s), and highlight key strengths and distinguishing features of the program.
I deleted the last sentence of the last footnote on our catalog page. Our recent program revisions do not allow 100-level classes to count toward the 30 unit total. Any 100 level unit would put students under the 18 units of required 200-level seminar. This is a remnant of our old catalog when more elective units were permitted.

University Learning Goals

Graduate (Masters) Learning Goals:
Disciplinary knowledge
Communication
Critical thinking/analysis
Information literacy
Professionalism
Intercultural/Global perspectives
Research (optional)

Will this program be required as part of a teaching credential program, a single subject, or multiple subject waiver program (e.g., Liberal Studies, Biology) or other school personnel preparation program (e.g., School of Nursing)?
No

Curriculum Alignment and Assessment

Program Learning Outcomes

Provide measurable, program-specific learning outcomes that reflect the most important competencies students will demonstrate upon completion of the program. Programs are expected to assess and use PLOs for continuous improvement.

Program Learning Outcomes

Learning Outcome
PLO 1. Communicate the findings of an original research investigation in the biological sciences and their broader significance. PLO 2. Critically analyze and synthesize findings in the biological literature and original research results and integrate those findings into an appropriate theoretical and discipline-specific context. PLO 3. Obtain, evaluate, and analyze findings in the biological literature as the basis for an original research proposal and investigation. PLO 4. Apply professional conventions, integrity, and ethics in the biological sciences, including professional interactions. PLO 5. Apply a global perspective to the interpretation of original research findings in the biological sciences. PLO 6. Design and conduct an original research investigation that makes a new contribution to the field of biological sciences.

Learning Outcomes Display

Course Code	PLO 1
BIO 220A	
BIO 220B	
BIO 294A	
BIO 294B	
BIO 294C	
BIO 299	
BIO 500	

Catalog Description (catalog copy):

Total units required for MS: 30

Program Description

The Master of Science (MS) in Biological Sciences offers advanced training in the biological sciences through coursework and completion of an original research-based thesis. The MS degree prepares students for careers in education, government, and industry, as well as for doctoral programs or advancement in teaching, laboratory work, or fieldwork.

Faculty have specializations and expertise in a diverse range of areas within the biological sciences. Students work with a graduate faculty advisor to develop a coursework plan that meets their professional goals, design an original research investigation, and complete their thesis. A student's thesis research may be conducted on campus or at an off-campus location under the supervision of their faculty advisor.

The MS degree requires 30 credit hours of coursework, original research, and completion of a thesis that involves biological field and/or laboratory research.

For additional information regarding the MS in Biological Sciences, visit the Biological Sciences website (http://www.csus.edu/bios/).

Admission and Continuation Requirements (catalog copy): minimum GPA and prerequisites (if applicable), required coursework or preparation, portfolio, test scores, and/or letters of recommendation. For graduate programs: expectations for a relevant bachelor's degree (required or preferred disciplines, prerequisite knowledge, or equivalent experience), include evidence that program requirements conform to the minimum requirements for the culminating experience, as specified in Title 5 Section 40510 The Master's Degree and Section 40511 The Doctoral Degree.

Admission Requirements

Admission as a classified graduate student to the MS in Biological Sciences requires:

- a baccalaureate degree;
- completion of a major in biological sciences or closely related field; or completion of 24 units of upper division biological sciences courses or courses in closely related fields, each of which must be passed with a "C-" or better;
- a minimum GPA of 2.75 in all biology courses and a minimum GPA of 3.0 in upper division biology courses; and
- a faculty member who has agreed to serve as the applicant's graduate advisor.*

It is important to note that meeting all admission requirements does not guarantee acceptance into the graduate program. Applicants who have deficiencies in admission requirements (e.g., GPA, coursework) that can be removed by specified additional preparation may be admitted with conditionally classified graduate status. Admission as a conditionally classified graduate student does not guarantee fully classified status. Fully classified graduate status is conferred when all deficiencies identified at the time of admission are removed. Any deficiencies in admissions requirements will be noted in a written communication to the applicant.

**For your application to be considered for admission, a faculty member in the Department must agree to serve as your graduate advisor. This requires that you correspond directly with a faculty member with whom you would like to study. We recommend that you do this well ahead of*

the application deadline to allow sufficient time for correspondence. In your application, you will be asked to enter the name(s) of the faculty member(s) with whom you would like to study and have been in correspondence.

Admission Procedures

To be considered for admission, all applicants must complete a Cal State Apply application by the posted application deadline date for the term applying and submit all requested application materials below.

A complete application for admission into the Graduate Program in Biological Sciences includes all of the following:

• an online Cal State Apply application for admission;

• one set of#official transcripts from all colleges and universities attended, other than Sacramento State;

• a#Department supplemental application submitted with the Cal State Apply application;

• two letters of recommendation from persons qualified to judge the applicant's potential for successful graduate study; and

• a statement of purpose.

Applications are due by February 15. For additional university admissions information and application deadlines, visit the Office of Graduate Studies (https://www.csus.edu/graduate-studies/future-students/graduate-programs-deadlines.html) . Approximately eight to ten weeks after the application deadline, a decision regarding admission will be emailed to the applicant.

Note: *The Department of Biological Sciences currently does not have a call for admission in the spring semester. However, under exceptional circumstances an applicant may petition the department to begin graduate study in the spring. A petition for spring admission requires a compelling reason and support by a faculty member in the department. Please contact your potential graduate advisor (i.e. a faculty member in your area of interest) to discuss this option.*

No units from the following are acceptable toward the Master's degree:

Code	Title	Units
BIO 106	Genetics: From Mendel to Molecules	3
BIO 194	Biology-Related Work Experience	6 - 12
BIO 195	Biological Internship	1 - 2
BIO 197A	Laboratory Teaching Assistant	1 - 2
BIO 197B	Laboratory Techniques	1 - 2
BIO 197C	Co-curricular Activities in Biology	1 - 2
BIO 198A	Honors Proseminar and Research	2
BIO 198B	Honors Research and Seminar	2
BIO 199A	Introductory Undergraduate Research	1 - 2
BIO 199B	Directed Readings	1 - 2

Minimum Units and Grade Requirements for the Degree

Units required for the MS: 30
Minimum Cumulative GPA: 3.0

Advancement to Candidacy

The Advancement to Candidacy process serves to ensure that the student is qualified for and making good progress toward successfully completing their master's degree. Each classified graduate student must file an application for Advancement to Candidacy, indicating a proposed program of study, and receive approval for their proposed thesis research. This procedure can begin as soon as the student has:

- removed any deficiencies in admission requirements (i.e., attained fully classified status);
- completed at least 12 units in the graduate program with a minimum 3.0 GPA, including at least one course at the 200-level;
- completed an acceptable draft of the proposed thesis; and
- taken a Graduate Writing Intensive (GWI) course in their discipline within the first two semesters of coursework at California State University, Sacramento.

Advancement to Candidacy forms are available on the Office of Graduate Studies website. The student must fill out and submit the form after planning a degree program in consultation with his/her graduate advisor and supervisory committee. After approval by the Department's Graduate Coordinator, the completed form is sent to the Office of Graduate Studies for approval.

Note:

Supporting Fields: A maximum of 10 units from an approved supporting field (e.g., Chemistry, Physics, Environmental Studies, Geology, Physics) may be counted toward the MS in Biological Sciences; graduate advisor and Graduate Committee approval must be obtained **before** taking any of these course(s).

No more than 12 units of BIO 299 and BIO 500 may be applied toward the 30 unit requirement.

Each student who receives an MS in Biological Sciences must submit a Thesis based on original research in biology. A thesis can be based on either of the following sources of data:

- data generated by the student's original research, in which the student performs the fieldwork or laboratory experiments; and/or
- data obtained from sources other than the student's own fieldwork or laboratory experiments, provided that the data are analyzed in an original way.

The use of data must result in an original contribution to the problem being investigated.

All requirements for the Master's degree must be completed within seven (7) years starting from the time the first course is used to meet the Master's degree requirements.

Program Requirements (catalog copy):

Program Requirements [1]

Code	Title	Units
Required Core Courses (14 Units)		
BIO 220A	Foundations in Scientific Inquiry	3
BIO 220B	Scientific Writing and Communication	3
Select any combination of the following:		2
BIO 294A	Seminar in Molecular and Cellular Biology	
BIO 294B	Seminar in Ecology, Evolution and Conservation	
BIO 294C	Seminar In Scientific Communication	
BIO 299	Problems in Biological Sciences [2]	1
Culminating Experience (6 Units)		
BIO 500	Master's Thesis	6
Elective Courses (10 Units)		
Select electives in consultation with graduate advisor [3]		10
Total Units		**30**

1 The 30 units must include a minimum of 18 units of 200-level seminar courses.
2 Students must complete 6 units of BIO 299 to fulfill degree requirements.
3 Approved electives in Biological Sciences or supporting fields. Electives must be selected in consultation with the graduate advisor and approved at the Advancement to Candidacy meeting.

Fiscal Impact to Change an Existing Program

Indicate programmatic or fiscal impact which this change will have on other academic units' programs, and describe the consultation that has occurred with affected units:

NA

Provide a fiscal analysis of the proposed changes:

NA

How will the above changes be accommodated within the department/College existing fiscal resources?

NA

Will the proposed changes require additional resources?

No

What additional space, equipment, operating expenses, library, computer, or media resources, clerical/technical support, or other resources will be needed?

NA

Estimate the cost and indicate how these resource needs will be accommodated:

NA

Reviewer Comments:

Mikkel Jensen (mikkel.jensen) (Wed, 16 Sep 2026 23:04:28 GMT): Rollback: Please edit the footnote as you intend it to appear in the catalog. If no 100-level courses can count towards the MS degree, remove the field "No units from the following are acceptable toward the Master's degree" under the "Admission Requirements" field.

Key: 302