

Biology (MS)

Degree Requirements

Graduate Studies

The Master of Science degree in Biology is designed to provide qualified students the opportunity to further their knowledge in areas of biology, as indicated by course offerings and research interests of the faculty.

Requirements For Admission

Students are admitted each semester.

The following criteria supplement the Graduate School criteria (see Categories of Admission):

Regular Admission

1. Undergraduate major in Biology, Botany, or Zoology with a minimum GPA of 2.5 (on a 4-point scale) in all biological courses taken.
2. One year of freshman chemistry and at least one semester of organic chemistry.
3. One year of physics or geology.
4. Mathematics at least through calculus or statistics.
5. Graduate Record Examination (GRE) score of at least 298 on the Verbal and Quantitative portions. (An MCAT score of 24 may be substituted for the GRE by persons intending to enter a cellular/molecular area.)
6. Students who do not speak English as their native language must submit a minimum TOEFL test scores of 560 on the paper-based test (pBT), 220 on the computer-based test (CBT) or 85 on the internet-based test (IBT), or a minimum score of 6.5 on the IELTS test.
7. Three letters of reference.
8. A letter from the student indicating their research interests.
9. A willing mentor from Biology (in this regard the student should contact the Graduate Coordinator before applying to the program).

Non-Degree Admission

The Department of Biology accepts Non-Degree Graduate Students within the general admission and credit regulations of the University of South Alabama with certain reservations and limitations. Students should consult the Department concerning these limitations before applying for such status. Included, but not limited to, are the following:

1. Students are restricted to enrollment in courses prefixed BLY that the Chair determines will advance their career development in biological sciences. Only in exceptional cases wherein it is determined to the satisfaction of the Chair that the aforementioned career goals are enhanced will a non-degree student be permitted to enroll in courses in other departments.
2. Students must confer with the Chair or the Graduate Coordinator of the Department of Biology before attempting to enroll in any class.
3. Students seeking to change from non-degree status to a degree-granting program must reapply and be evaluated as any other student who has not previously applied to such program.

Opportunities For Research Training In Marine Biology

The Dauphin Island Sea Laboratory is supported by nineteen colleges and universities in Alabama to form one marine campus. Students in the MS program Biological Sciences at the University of South Alabama may take courses through the sea laboratory and apply credits earned toward fulfilling requirements for the MS degree. Students frequently choose to spend part of their time, particularly in the summers, at Dauphin Island and the rest of their time on the main campus in Mobile. Other arrangements are also possible.

Graduate Assistantships

The Department offers several types of assistantships to qualified students. Application forms for assistantships with primary responsibilities in teaching and preparing laboratories are available from the departmental office. In addition, some assistantships with primary responsibility in research are usually available each year. These assistantships are associated with grants and contracts that support the research of individual faculty members. In all cases, assistantships are approved by the Dean of the Graduate School upon recommendation of the appropriate sponsor within the University. To be eligible for an assistantship, MCAT or GRE scores must be submitted to the Biology Department.

Requirements For Degree For All Students

The curriculum for each student will be developed by the student's advisory committee in view of the student's professional goals. If, in the opinion of a student's committee, the student lacks adequate undergraduate preparation or English skills, the student will be required to make up such deficiencies.

All requirements must be met in five years. In addition to satisfying the general requirements of the Graduate School, the candidates for the Master of Science degree in Biology must satisfy the following requirements:

Thesis Program

1. Complete, with a minimum grade of "B", thirty hours of course work at the 500 level. All Biology graduate student must complete at least 18 hours of formal coursework in BLY (excluding directed studies and thesis) listed courses. No course at the 400 level or below may be taken for graduate credit. A maximum of six credit hours may be granted for Directed Studies (BLY 594). All courses must be accepted by the student's graduate advisory committee. The student's graduate committee may, at its option, after consultation with the student, require demonstration of additional proficiency in mathematics, computer skills, statistics, and/or require the student to take additional course work.
2. Included in the 18 hours of formal coursework, students will complete the following core sequence:
 - BLY510 – Professionalism in Science (3h)
 - BLY520 – Biometry (4h)
 - BLY544 – Molecular Biology (3h)
 - BLY545 – Bioinformatics of Genetics (1h)
 - BLY585 – Evolutionary Biology (3h)
 - BLY592 – Seminar (1h)(The remaining 3 hours needed to meet the 18-hour requirement can be chosen from other 500-level BLY course offerings)
3. Complete a thesis representing original research. A maximum of 9 hours credit will be granted for the thesis. Enrollment in BLY 599 (Thesis) is not permitted until the student's research prospectus has been approved by the advisory committee and the Director of Graduate Studies, College of Arts and Sciences.
4. After submission of the written research prospectus to the committee, students will schedule a committee meeting and comprehensive qualifying exam. The exam will be oral and will start with a presentation of the prospectus and, where applicable, a progress report. Students will first be examined on the prospectus and progress report, and then any area of study closely or broadly related to the student's area of specialization. The exam committee will consist of the student's thesis committee.
5. The student will be graded by all committee members, following a rubric that considers various aspects of the presentation and has three possible scores for each category: 1 (insufficient), 2 (meets expectations), and 3 (above expectations). To pass the exam, a student will have to score an average of 2 or higher. Students are encouraged to look at the rubric before the presentation to be aware of the committee's expectations.

Students who fail the exam will be given a second opportunity.
6. Make an oral defense of the thesis.

Non-Thesis Program

Students planning to pursue the Ph.D. degree are encouraged to follow the thesis option. However, a non-thesis curriculum is available for those students who so elect.

1. The student will be required to complete, with a minimum grade of "B", thirty hours of course work at the 500 level. No course at the 400 level or below may be taken for graduate credit. A maximum of six credit hours may be granted for Directed Studies (BLY 594).
2. A thesis will not be required. Consequently, BLY 599 (Thesis) may not be taken, and the six semester hours normally associated with it must be earned through formal coursework.

3. The student will complete at least 18 hours of graduate coursework with the “BLY” designation, excluding BLY 594. Additional career-relevant graduate course selection may be from other departments. The 18 hours of BLY coursework will include the following core sequence:
 - BLY510 – Professionalism in Science (3h)
 - BLY520 – Biometry (4h)
 - BLY544 – Molecular Biology (3h)
 - BLY545 – Bioinformatics of Genetics (1h)
 - BLY585 – Evolutionary Biology (3h)
 - BLY592 – Seminar (1h)
4. At the completion of coursework, non-thesis students will meet with their committee to discuss their directed studies project. They will be questioned by the committee on their readiness and background relative to program outcome expectations. The committee will evaluate the student’s performance using a rubric. If unsuccessful, the evaluation may be repeated once after corrective action is recommended and implemented.
5. The student must complete 3-6 hours of BLY 594 (Directed Studies) under the direction of a member of the Biology graduate faculty. A committee consisting of the student’s faculty advisor and two others tenure-track faculty members will decide if the student’s report relating to the directed study is satisfactory. The student is required to present an open seminar about the directed study during the last semester of residency.
6. Transition between “thesis” and “non-thesis” options requires the majority consent of the student’s advisory committee.

Department Information

Department of Biology website
<https://www.southalabama.edu/biology>

Undergraduate Studies

The program of the Department of Biology is designed to contribute to a scientific background as part of a liberal education. The department offers a diversified, broadly based program, which can be designed to satisfy many areas of study. Our multitrack major can provide the traditional student with a well-rounded background in biology, or students may select courses to prepare them for a particular area of study. The multitrack curriculum can prepare students for graduate study, pre-health professional fields (such as medicine or dentistry), marine biology, or environmental science. The department has persons trained to advise in each of these areas. A list of advisors for a specific track or area of study can be obtained from the departmental office.

All first-time freshmen must successfully complete CAS 100: First Year Experience as a degree requirement. Students must enroll during their first term at USA, except for summer-entry students, who must enroll in the fall semester following entry.

Biology majors are required to take CIS 150, BLY 304 or ST 210 to fulfill the technology proficiency requirement, which was formerly known as the computer proficiency requirement.

Effective for fall, 2016, Major Milestones are used in all concentrations of the Biology Bachelor of Science major to help students stay on track for timely graduation. Each regular semester in the Biology major is a tracking term. To remain on track, students must complete the milestone requirements for each tracking term. These requirements are viewable on the Major Milestone tab above.

Major milestone requirements apply only to full-time, degree-seeking students who first entered Fall 2016 or later. Milestone requirements do not apply to transfer students in the Biology program.

The sample academic plan viewable on the Major Milestone tab above is designed to ensure graduation in the Biology major in four years. Several academic plans are available -- consult with your academic advisor for the plan that is the best fit for you. For specific course requirements, refer to the program requirements above and the General Education requirements of the College of Arts and Sciences.