

Graduate Catalog 2018-2019

Master of Science in Biology

The Master of Science in Biology is designed to prepare students for both a related doctoral program and for a career as a professional biologist in industry, government, and academia. This degree is research-oriented, requiring 26 hours of course work, and 6 hours of thesis. A diverse faculty allows students to choose among the gamut of biological research options, from studying the molecular basis of disease to investigating the ecological and evolutionary processes of macroorganisms. Faculty disciplines include:

- Cell and Molecular Biology
- Genetics
- Microbiology
- Physiology
- Forensic Science
- Systematics
- Animal Behavior
- GIS
- Ecology
- Entomology
- Botany
- Parasitology
- Ichthyology
- Herpetology
- Ornithology
- Mammalogy

Explore more about the faculty in the Department of Biological Sciences at:
<http://www.shsu.edu/academics/biological-sciences/people/faculty.html>

Applicants seeking admission to the graduate program in biology must submit the following directly to the Office of Graduate Admissions:

1. [Graduate Application](#)
2. [Application fee](#)
3. Official transcript(s) of all previous college work
4. Official GRE scores
5. Two letters of recommendation from faculty in the student's major at the undergraduate degree-granting institution
6. A statement of purpose outlining the student's goals in the program

To be granted regular admission, applicants must have an undergraduate degree in biology or a related field. Applicants having an undergraduate degree in a discipline other than biology must successfully complete the equivalent of an undergraduate minor in the biological sciences before being considered for regular admission.

Regular admission to the graduate program is based on a GRE score and undergraduate GPA in concordance with the following formula:

$$\{[(200 * \text{GPA}) + \text{Averaged \% Quantitative and Verbal GRE ranking}] > 300\}$$

For a final admissions decision, GRE scores and undergraduate GPA do not constitute the primary criteria to end consideration of an applicant. Applicants with combined scores of slightly less than 300 using the above formula may be considered for probationary admission.

Applicants from non-English speaking countries must also present a score of at least 78 on the Internet-based (iBT), 550 on the paper version (PBT), or 213 on the computer version (CBT) of the Test of English as a Foreign Language (TOEFL). In addition, International Students are required to have an SHSU Biological Sciences Graduate Faculty member write a letter of support for their application to the program.

More detailed information on admission, competitive GRE scores, and undergraduate GPA can be found in the [Graduate Student Handbook](#).

Assistantships

Teaching Assistantships are available through the Department of Biological Sciences in conjunction with the College of Science and Engineering Technology and the Office of Graduate Studies. They are limited in number and awarded on a competitive basis. An Application for Teaching Assistantship should be submitted separately to the Graduate Coordinator by the 12th week of the semester prior to the semester the student is applying. Assistantships are awarded for four semesters.

Teaching Assistantships application can be found in the [Graduate Student Handbook](#).

There are two different plans leading to the M.S. in Biology. Plan 1 requires completion of a thesis for a total of thirty-two hours of graduate credit in biology. In Plan 2, students take twenty-six hours of biology (including thesis hours) with 12 hours of supporting coursework in a chosen minor for a total of thirty-eight hours of graduate credit.

All graduate students are required to pass a comprehensive examination on general biological concepts based on their coursework. The nature of this examination, which may be written and/or oral, will be determined by the student's comprehensive exam committee. Students must be enrolled the semester they take the comprehensive examination.

A thesis research project is conducted under supervision of the student's thesis advisor, and the student will present the thesis to the faculty in seminar format. The thesis must be defended before the student's thesis committee.

Students must complete six credit hours of thesis coursework. This entails three credit hours of [BIOL 6398](#) and three credit hours of [BIOL 6099](#). Once enrolled in [BIOL 6099](#), a student must be continually enrolled in that course until graduation.

Plan 1 - M.S. in Biology (Thesis Option)

Master of Science in Biology (Thesis option)		
Specified Course		
BIOL 5300	Professional Aspects of Sci	3
Electives		
Select eight graduate courses in BIOL in consultation with the Graduate Advisor excluding thesis courses		24
Thesis		
BIOL 6398	Thesis	3
BIOL 6099	Thesis	3
Total Hours		33

Plan 2 - M.S. in Biology (Thesis Option)

Master of Science in Biology (Thesis option)	
Specified Course	

BIOL 5300	Professional Aspects of Sci	3
Electives		
Select six graduate courses in BIOL in consultation with the Graduate Advisor excluding thesis courses		18
Secondary Field		
Select four graduate courses in an approved minor field in consultation with the Graduate Advisor		12
Thesis		
BIOL 6398	Thesis	3
BIOL 6099	Thesis	3
Total Hours		39

Senior Courses Open to Graduate Students

With departmental approval, a maximum of six hours of the following senior (4000-level) courses may be taken for graduate credit toward the MS in Biology. Course requirements in senior courses must be appropriately modified for graduate credit.

Courses		
BIOL 4080	Field and Experiential Biology	1-3
BIOL 4306	Philosophy Of Biology	3
BIOL 4320	Environmental Toxicology	3
BIOL 4330	Aquatic Biology	3
BIOL 4350	Immunology	3
BIOL 4360	Genetic Anlys of Human Disease	3
BIOL 4362	Paleobiology	3
BIOL 4361	Introductory Evolutionary Bio	3
BIOL 4363	Genomics and Bioinformatics	3
BIOL 4370	Microbial Ecology	3
BIOL 4374	Biostatistics	3
BIOL 4380	Medical Microbiology	3
BIOL 4410	General Entomology	4
BIOL 4430	Vertebrate Natural History	4
BIOL 4460	Parasitology	4
BIOL 4470	Animal Behavior	4
BIOL 4471	Invertebrate Zoology	4
BIOL 4480	Molecular Biology	4
BIOL 4481	Physiological Ecology	4
BIOL 4490	Cell Biology	4
BIOL 4493	Endocrinology	4