Biological Sciences MS

Biological Sciences MS Web Site (https://www.tamuc.edu/programs/biological-science-ms/)

Upon being accepted for admission into the Graduate School, each student will either select or be assigned an advisor from the graduate faculty within the Department of Biological and Environmental Sciences. This faculty member will chair the student's advisory committee, which will include at least two additional graduate faculty members, one of whom may be from another department. Courses may be applied to a particular master's degree program only with the approval of the student's advisory committee. Courses taken before a committee is chosen may not be approved by the committee for the student's particular degree program and, therefore, may not apply to the degree. Course selections will be based upon unique student needs as revealed by academic records and career goals. Course selections will include graduate course offerings in the Department of Biological and Environmental Sciences as well as supporting courses if deemed desirable or necessary from other departments. With committee recommendation, and approval of the Graduate Dean, a maximum of two upper level undergraduate courses may be applied to certain degree programs.

The Biological Sciences MS degree thesis option is available only on-campus, while the non-thesis program is available on campus or fully on-line.

Master of Science in Biological Sciences - Option I Thesis

The student will complete a minimum of 30 sh. The program includes: BSC 518 Thesis and other 15 sh of core courses;9 sh of electives selected and approved by the student's advisory committee. The Master of Science degree in Biological Sciences with thesis option is available only on campus.

Thesis (6 semester hours required)		
BSC 518	Thesis (6 semester hours required)	3-6
Required Course (6 semester hours)		
BSC 504	Advanced Biostatistics	3
BSC 515	Advanced Cell Biology	3
Core courses (9 semester hours)		
To satisfy core requirements choose one course (3 semester hours) from each topic, the second course taken from a topic will be counted towards the general electives:		
Topic 1. Genetics		
BSC 512	Advanced Ecological Genetics	3
BSC 513	Molecular Genetics	3
Topic 2. Ecology		
BSC 510	Community Ecology	3
BSC 560	Advanced Landscape Ecology	3
Topic 3. Physiology		
BSC 552	Comparative Animal Physiology	3
BSC 550	Microbial Physiology	3
Electives (9 semester hours)		
Select a total of 9 semester hours from following courses:		
BSC 509	Microbial Ecology	3
BSC 510	Community Ecology	3
BSC 511	Avian Biology	3
BSC 512	Advanced Ecological Genetics	3
BSC 513	Molecular Genetics	3
BSC 514	Advanced Pharmacology - Principles and Practice	3
BSC 516	Medical Microbiology	3
BSC 517	Stem Cell Biology	3
BSC 519	Advanced Gene Regulation	3
BSC 520	Advanced Immunology	3
BSC 521	Epigenetics	3
BSC 522	Reproductive Physiology	3
BSC 523	The Plant Microbiome	3
BSC 524	Advanced Soil and Biogeochemistry	3
BSC 525	Advanced Neuroscience	3
BSC 526	Advanced Developmental Biology	3

BSC 527	Advanced Human Physiology	3
BSC 530	Advanced Virology	3
BSC 531	Biogeography	3
BSC 532	Behavioral Ecology	3
BSC 533	Invertebrate Zoology	3
BSC 534	Vertebrate Zoology	3
BSC 535	Evolution	3
BSC 537	Behavior and Conservation	3
BSC 539	Herpetology	3
BSC 540	Animal Behavior	3
BSC 541	Genetic Engineering	3
BSC 550	Microbial Physiology	3
BSC 552	Comparative Animal Physiology	3
BSC 560	Advanced Landscape Ecology	3
BSC 561	Bioremediation	3
BSC 562	Ecotoxicology	3
Total Hours		**30**

Master of Science in Biological Sciences (Fast-Track Bachelors + Masters) Option I Thesis

The Fast-Track Bachelors + Masters degree program allows undergraduate students in the Biological Sciences program to begin coursework towards the thesis option of the Master of Science in Biological Sciences program during their senior year at East Texas A&M University. Students can earn a B.S. and M.S. degree in five years upon completion of degree requirements for both degrees. For this Fast-Track Bachelors + Masters program, 12 credits of graduate coursework may be taken as an undergraduate student (graduate courses cannot be applied to the undergraduate degree). Once admitted, the Fast-Track Bachelors + Masters candidate must maintain a 3.25 Undergraduate GPA. In the final semester of the student's undergraduate program, a new online Apply Texas Application for the master's Accelerated program must be submitted to gain admission and continue taking classes to complete the master's program. The Master of Science degree in Biological Sciences with thesis option is available only on campus.

Thesis (6 semester hours required)		
BSC 518	Thesis	3-6
Required Course (6 semester hours)		
BSC 504	Advanced Biostatistics	3
BSC 515	Advanced Cell Biology	3
Core courses (9 semester hours)		
To satisfy core requirements choose one course (3 semester hours) from each topic, the second course taken from a topic will be counted towards the general electives:		
Topic 1. Genetics		
BSC 512	Advanced Ecological Genetics	3
BSC 513	Molecular Genetics	3
Topic 2. Ecology		
BSC 510	Community Ecology	3
BSC 560	Advanced Landscape Ecology	3
Topic 3. Physiology		
BSC 552	Comparative Animal Physiology	3
BSC 550	Microbial Physiology	3
Electives (9 semester hours)		
Select a total of 9 semester hours from following courses:		
BSC 509	Microbial Ecology	3
BSC 510	Community Ecology	3
BSC 511	Avian Biology	3
BSC 512	Advanced Ecological Genetics	3
BSC 513	Molecular Genetics	3
BSC 514	Advanced Pharmacology - Principles and Practice	3

BSC 516	Medical Microbiology	3
BSC 517	Stem Cell Biology	3
BSC 519	Advanced Gene Regulation	3
BSC 520	Advanced Immunology	3
BSC 521	Epigenetics	3
BSC 522	Reproductive Physiology	3
BSC 523	The Plant Microbiome	3
BSC 524	Advanced Soil and Biogeochemistry	3
BSC 525	Advanced Neuroscience	3
BSC 526	Advanced Developmental Biology	3
BSC 527	Advanced Human Physiology	3
BSC 530	Advanced Virology	3
BSC 531	Biogeography	3
BSC 532	Behavioral Ecology	3
BSC 533	Invertebrate Zoology	3
BSC 534	Vertebrate Zoology	3
BSC 535	Evolution	3
BSC 537	Behavior and Conservation	3
BSC 539	Herpetology	3
BSC 540	Animal Behavior	3
BSC 541	Genetic Engineering	3
BSC 550	Microbial Physiology	3
BSC 552	Comparative Animal Physiology	3
BSC 560	Advanced Landscape Ecology	3
BSC 561	Bioremediation	3
BSC 562	Ecotoxicology	3
Total Hours		**30**

Master of Science in Biological Sciences - Option II Non-Thesis

The student will complete a minimum of 36 semester hours. The program includes BSC 595 Research Literature and Techniques, (3 semester hours) and 15 semester hours of core courses, plus 18 semester hours of electives selected and approved by the students advisory committee. The Master of Science degree in Biological Sciences with non-thesis option is offered on-campus or fully online.

Research (3 semester hours required)		
BSC 595	Research Literature and Techniques (3 semester hours required)	3
15 semester hours of required core courses plus one elective course must be successfully completed before approval to register for BSC 595 can be given (18 hrs total)		
Required Courses (6 credits)		
BSC 504	Advanced Biostatistics	3
BSC 515	Advanced Cell Biology	3
Required Core Course (9 semester hours)		
To satisfy core requirements choose one course (3 semester hours) from each topic, the second course taken from a topic will be counted towards the general electives:		
Topic 1. Genetics		
BSC 512	Advanced Ecological Genetics	3
BSC 513	Molecular Genetics	3
Topic 2. Ecology		
BSC 510	Community Ecology	3
BSC 560	Advanced Landscape Ecology	3
Topic 3. Physiology		
BSC 552	Comparative Animal Physiology	3
BSC 550	Microbial Physiology	3
Electives (18 semester hours)		

Select a total of 18 semester hours from:

BSC 509	Microbial Ecology	3
BSC 510	Community Ecology	3
BSC 511	Avian Biology	3
BSC 512	Advanced Ecological Genetics	3
BSC 513	Molecular Genetics	3
BSC 514	Advanced Pharmacology - Principles and Practice	3
BSC 516	Medical Microbiology	3
BSC 517	Stem Cell Biology	3
BSC 519	Advanced Gene Regulation	3
BSC 520	Advanced Immunology	3
BSC 521	Epigenetics	3
BSC 522	Reproductive Physiology	3
BSC 523	The Plant Microbiome	3
BSC 524	Advanced Soil and Biogeochemistry	3
BSC 525	Advanced Neuroscience	3
BSC 526	Advanced Developmental Biology	3
BSC 527	Advanced Human Physiology	3
BSC 530	Advanced Virology	3
BSC 531	Biogeography	3
BSC 532	Behavioral Ecology	3
BSC 533	Invertebrate Zoology	3
BSC 534	Vertebrate Zoology	3
BSC 535	Evolution	3
BSC 537	Behavior and Conservation	3
BSC 539	Herpetology	3
BSC 540	Animal Behavior	3
BSC 541	Genetic Engineering	3
BSC 550	Microbial Physiology	3
BSC 552	Comparative Animal Physiology	3
BSC 560	Advanced Landscape Ecology	3
BSC 561	Bioremediation	3
BSC 562	Ecotoxicology	3
Total Hours		**36**

Master of Science in Biological Sciences (Fast-Track Bachelors + Masters) Option II Non-Thesis

The Fast-Track Bachelors + Masters degree program allows undergraduate students in the Biological Science program to begin coursework towards the non-thesis option of the Master of Science in Biological Sciences program during their senior year at East Texas A&M University. Students can earn a B.S. and M.S. degree in five years upon completion of degree requirements for both degrees. For this Fast-Track Bachelors + Masters program, 6 credits of graduate coursework can be applied to both the BS and MS degrees. Once admitted, the Fast-Track Bachelors + Masters candidate must maintain a 3.25 Undergraduate GPA. In the final semester of the student's undergraduate program, a new online Apply Texas Application for the master's Fast-Track Bachelors + Masters program must be submitted to gain admission and continue taking classes to complete the master's program. The Master of Science degree in Biological Sciences with non-thesis option is offered on-campus or fully online.

Research (3 semester hours)		
BSC 595	Research Literature and Techniques (3 semester hours required)	3
15 semester hours of required core courses plus one elective course must be successfully completed before approval to register for BSC 595 can be given (18 hrs total)		
Required Courses (6 credits)		
BSC 504A	Advanced Biostatistics *	3
BSC 515A	Advanced Cell Biology *	3
Required Core Courses (9 semester hours)		

To satisfy core requirements choose one course (3 semester hours) from each topic, the second course taken from a topic will be counted towards the general electives:		
Topic 1. Genetics		
BSC 512	Advanced Ecological Genetics	3
BSC 513	Molecular Genetics	3
Topic 2. Ecology		
BSC 510	Community Ecology	3
BSC 560	Advanced Landscape Ecology	3
Topic 3. Physiology		
BSC 552	Comparative Animal Physiology	3
BSC 550	Microbial Physiology	3
Electives (18 semester hours)		
Select a total of 18 semester hours from:		
BSC 509	Microbial Ecology	3
BSC 510	Community Ecology	3
BSC 511	Avian Biology	3
BSC 512	Advanced Ecological Genetics	3
BSC 513	Molecular Genetics	3
BSC 514	Advanced Pharmacology - Principles and Practice	3
BSC 516	Medical Microbiology	3
BSC 517	Stem Cell Biology	3
BSC 519	Advanced Gene Regulation	3
BSC 520	Advanced Immunology	3
BSC 521	Epigenetics	3
BSC 522	Reproductive Physiology	3
BSC 523	The Plant Microbiome	3
BSC 525	Advanced Neuroscience	3
BSC 526	Advanced Developmental Biology	3
BSC 527	Advanced Human Physiology	3
BSC 530	Advanced Virology	3
BSC 531	Biogeography	3
BSC 532	Behavioral Ecology	3
BSC 533	Invertebrate Zoology	3
BSC 534	Vertebrate Zoology	3
BSC 535	Evolution	3
BSC 537	Behavior and Conservation	3
BSC 539	Herpetology	3
BSC 540	Animal Behavior	3
BSC 541	Genetic Engineering	3
BSC 550	Microbial Physiology	3
BSC 552	Comparative Animal Physiology	3
BSC 560	Advanced Landscape Ecology	3
BSC 561	Bioremediation	3
Total Hours		**36**

* Courses shared with BS

Note: Successful completion of the Comprehensive Exam is required of all students.