

Biology, MS

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College of Science and Technology

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The primary objective of the Masters of Science program in Biology is to prepare students to enter and complete doctoral and health professional programs in order to become productive teachers, researchers, and health professionals. To support this objective, this program will develop in all participants, through research experiences and other enrichment activities, independent thinking, creativity, critical judgment, and personal integrity. Specifically, this program is designed to enhance the student's ability to design experiments, to analyze results, to become competent using state-of-the-art research equipment, enhance manipulative skills, and to improve the student's proficiency in oral and written communication. Students will have opportunity to conduct research in various areas, including cancer research, diabetes research, molecular genetics, microbiology/immunology, genomics/bioinformatics, physiology, evolution, toxicology, and health disparities research. An additional critical objective is to enable students to score at or above the 50th percentile on the GRE Subject Test in Biology after their first year in residency.

Additional Admission Requirements

- A Bachelor's Degree in Biology or a related discipline from an accredited institution.
- Chemistry through Organic II
- One year of Calculus, One year of Physics, and One year of Cellular and Molecular Biology

Program Outcomes:

- SLO 1: Knowledge of the Biological Discipline. During the course of study in the Master of Science Degree Program in Biology, students integrate biological concepts from a variety of sub-disciplines on the required comprehensive examination prepared by instructors of courses that students have taken in the first year.
- SLO 2: Communication. During the course of study in the Master of Science Degree Program in Biology, students will present research findings in standard formats used by biological scientists and the guidelines of the NC A&T Graduate College.
- SLO 3: Critical Thinking (Masters Level). During the course of study in the Master of Science Degree Program in Biology, students will conduct critical reviews of scientific papers according to guidelines of the instructor.
- SLO 4: Scientific Research. During the course of study in the Master of Science Degree Program in Biology, students will implement an original research project based on the standard guidelines for biological research and a proposal approved by a faculty research advisor and committee.

Degree Requirements (Total credit hours: 30)

- Core courses (9 credits): BIOL 749, 761; CHEM 651

Thesis option:

- Take 3 credit hours: BIOL 703
- Electives: Select 4 credit hours from BIOL, ANSC, CSE or other with approval of graduate program coordinator
- Seminar (2 credit hours): BIOL 789, 792
- Supervised Research (BIOL 794: 6 credits)
- Thesis (BIOL 797: 6 credit hours)
- Pass thesis defense
- Pass comprehensive exam

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Project Option:

- Take 3 credit hours: BIOL 703
- Electives: Select 10 credit hours from BIOL, ANSC, CSE or other with approval of graduate program coordinator
- Seminar (2 credit hours): BIOL 789, 792
- Project (BIOL 796: 6 credit hours)
- Pass comprehensive exam

Example Sequence of Courses

Thesis option: Year 1

Fall		Spring	
BIOL 789, Biological Seminar I	1h	BIOL 702/792, Biological Seminar II	1h
BIOL 703, Experimental Biology	3h	CHEM 651, Biochemistry	3h
BIOL 749, Recent Advances in Cell Biology	3h	Elective Course (600 or above)	3-4h
Elective Course (600 or above)	3-4h	**Elective Course (600 or above)	3-4h
Total	10 -11h	Total	10 -12h

Summer Options: BIOL 794 (6h) or BIOL 710 (3h)

Thesis option: Year 2

Fall		Spring	
BIOL 788, Biology Comprehensive exam	0h	BIOL 797, Biology Thesis II	6h
BIOL 794, Biology Thesis I	6h	**Elective Course (600 or above)	3-4h
BIOL 785, Writing in the Sciences	3h		
Total	9h	Total	9h

Non-thesis (project) option: Year 1

Fall		Spring	
BIOL 789, Biological Seminar I	1h	BIOL 702/792, Biological Seminar II	1h
BIOL 703, Experimental Biology	3h	CHEM 651, Biochemistry	3h
BIOL 749, Recent Advances in Cell Biology	3h	Elective Course (600 or above)	3-4h
Elective Course (600 or above)	3-4h	Elective Course (600 or above)	3-4h
Total	10 -11h	Total	10 -12h

Summer Options: BIOL 710 (3h)

Non-thesis (project) option: Year 2

Fall		Spring	
BIOL 788, Biology Comprehensive exam	0h	Elective Course (600 or above)	3-4h
BIOL 796, Master's Project Research	6h	**Elective Course (600 or above)	3-4h
BIOL 785, Writing in the Sciences	3h		
Total	9-10h	Total	6-8h

**= Students may need to take courses to remain at 9h in order to remain at full time status