

## Graduate Certificate in Biological Sciences

### Graduate Advisor for the Biology MS Programs

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### Program Description

The aim of the Graduate Certificate Program in Biological Sciences is to provide students with training in advanced concepts in Biological Sciences at the graduate level. This certificate will accommodate students interested in further training in Biological Sciences but not wanting to pursue a thesis-based graduate program. It is appropriate for students who have completed upper-division coursework in Biological Sciences or Biology-related fields, for example Animal Behavior, Biochemistry, Bioinformatics, Biotechnology, Biomedical Engineering, Clinical Laboratory Sciences, Ecology, Environmental Studies, Forensic Science, Human Genetics, Genetic Counseling, Health Education, Immunology, Infectious Diseases, Marine Biology, Neuroscience, Pathology, Pharmacology, Physiology, Secondary STEM Education, Wildlife Science, and Zoology. This Program may be particularly appealing to graduates planning to pursue careers in secondary education or in health-related fields.

### Admissions criteria

- A minimum of 12 hours of upper-division undergraduate coursework in Biological Sciences or a closely related discipline
- A minimum undergraduate GPA of 3.0
- Minimal internet TOEFL of 79
- The General GRE is required but there is no minimum GRE score

### Courses

The Graduate Certificate in Biological Sciences requires completion of a total of 18 graduate semester hours in the subject area. A **minimum of 9 semester hours and up to 18 semester hours** will be selected from the following menu of graduate lecture courses in Biological Sciences: BIOL 5301 – Selected Advanced Topics in Biological Sciences; BIOL 5305 – Herpetology; BIOL 5308 – Research Funding and Professional Development; BIOL 5313 – Biogeography; BIOL 5316- Biosystematics; BIOL 5320 – Endocrinology; BIOL 5322 – Advances in Evolutionary Theory; BIOL 5323 – Ultrastructure; BIOL 5324 – Mammalogy; BIOL 5326 – Advances in Immunological Concepts; BIOL 5327 – Advances in Ecological Theory; BIOL 5328 – Biostatistics; BIOL 5329 – Physiology of the Bacterial Cell; BIOL 5330 – Cancer Biology; BIOL 5340 – Structure and Function of Macromolecules; BIOL 5343 – Mechanisms in Cellular Toxicity; BIOL 5344 – Molecular Pathogenesis; BIOL 5346 – Ecosystems Toxicology; BIOL 5351 – Introduction to Bioinformatics I: Basic Sequence Computation; BIOL 5352 – Introduction to Bioinformatics II: Gene Find and Compare; BIOL 5354 – Post-Genomic Analysis; and BIOL 5360 – Limnology. Students may also select one or more graduate level seminar courses: Seminar in Biological Sciences (BIOL 5130) and Ethical and Sociopolitical Dimensions (BIOL 5131). Although laboratory research is not required, students may elect to take **up to 9 semester hours** of Graduate Research in Biological Sciences (BIOL 5302) with a member of the Biological Sciences Graduate Faculty.