

Environmental Toxicology (MS)

Degree Requirements

The Master of Science degree in Environmental Toxicology is awarded in recognition of a student's demonstrated ability to successfully complete a prescribed program of courses and original scholarly research. Original scholarly research will be evaluated based on a student's ability to write and defend an acceptable research thesis.

Required Credit

A minimum of thirty-two (32) semester hours of course credit beyond the baccalaureate degree is required for students pursuing an MS degree.

Residence, Full-Time Study, And Continuous Registration

A minimum of two consecutive semesters of fulltime study in residence is required. The residency requirements may be met at the University of South Alabama, the Dauphin Island Sea Lab, or the Mitchell Cancer Institute.

Time Limit

All requirements for the MS degree must be completed within four (4) years [AR1] from the date of matriculation. A student who has not satisfactorily completed a MS degree in a five year period must apply for a defined extension to complete the degree. This request must be recommended by a major professor, the program coordinator, the Director of Graduate studies, and approved by the Dean of the Graduate School. If the student does not complete the degree requirements in the defined extension period, the Director of Graduate studies may recommend, and the Dean of the Graduate School may take, whatever action is necessary up to and including dismissal.

Failure to complete the work in the periods specified shall necessitate reevaluation of the student's program, and may result in a recommendation of dismissal by the Director of Graduate studies to the graduate Dean.

Students will be required to take twelve (12) semester hours of core classes including Environmental Chemistry (CH 514 and CH514L); Environmental Toxicology (EXT 515); and Environmental Statistics (ST 550) plus a Research Integrity Seminar (GIS 501). Additional coursework will be determined by the student's advisory committee and approved by the Environmental Toxicology program coordinator. Elective courses should be selected from the recommended list of electives where possible (see below) to make up an additional six (6) semester hours of credit towards the degree. Directed studies conducted under the supervision of a student's advisor or an advisory committee member should comprise up to six (6) semester hours of credit. Lastly, students will be expected to demonstrate research capability, preferably through the completion of an acceptable written thesis and oral defense of the research. At least eight (8) semester hours should be included in the MS degree program of study to meet this thesis requirement.

Course Requirements

The student and her/his advisory committee will be responsible for designing the curriculum that best fits the student's professional goals. If, in the opinion of the student's committee, the student lacks adequate undergraduate preparation, the student will be required to make up such deficiencies.

Schematic of Typical Program - Course Work		Credit Hours
Core courses, including:		12
CH 514 Environmental Chemistry (Lab and lecture)	3, 1 hrs	
EXT 515 Environmental Toxicology	4 hrs	
GIS 501 Research Integrity	1 hr	

ST 550 Environmental Statistics	3 hrs	
Directed Studies (maximum)		6
Thesis (maximum)	8	8
A Research Thesis on a subject identified jointly by the student and the Advisory Committee.	8 hrs	
Electives (at least 6 semester hours from the list below)		6
MAS 601 Physical Oceanography	4 hrs	
CE 579 Fundamentals of Environmental Engineering		
SY 567 Environmental Sociology	3 hrs	
CH 540 Biochemistry I	3 hrs	
CH 541 Biochemistry II	3 hrs	
BLY 544 Molecular Biology	3 hrs	
PHA 643 Molecular and Cellular Toxicology	3 hrs	

Department Information

Environmental Toxicology website

<https://www.southalabama.edu/colleges/graduateschool/etox/>

The University of South Alabama offers an interdisciplinary Masters program in Environmental Toxicology. Students focus on understanding how toxins and/or pollutants affect the health of people, food-webs, and ecosystems. Projects will assess the fate, effects and risks of natural toxins and pollutants using a multidisciplinary approach that incorporates toxicology, environmental chemistry, risk assessment, and ecology.

Students in this program will learn to:

- evaluate the impact of specific toxins, pollutants, and/or mixtures in the environment
- perform laboratory and/or field studies to monitor environmental and evaluate the impacts of toxins/pollutants
- optimize and/or develop field or laboratory methods to identify and evaluate toxic substances in biota and in the environment
- evaluate strategies to prevent, mitigate, and/or control and manage toxic substances
- evaluate policies and regulations used in risk analysis and risk management

Graduates from this program will be able to seek opportunities across multiple employment sectors including academic research, State and Federal Government research and policy, industry, non-governmental organizations, and private consulting and/or environmental monitoring. Alternatively, students may continue their education by pursuing a Ph.D. degree in Environmental Toxicology or related areas (e.g., Marine Sciences, Biology, Biomedical Sciences). In addition, these graduates will be qualified for jobs requiring M.S. degrees in their original areas of concentration.

Minimum Requirements For Admission

Students applying to this program must fulfill all the requirements for admission specified by the Graduate School. Additional requirements include:

- B.S./B.A. degree from an accredited four-year college or university. The program is designed for graduates holding baccalaureate degrees in Biology, Biomedical Sciences, Chemistry, Engineering or related fields.

- An undergraduate GPA of 3.00 or above is required.
- The Graduate Record Exam (GRE) will be required and will be considered among the admission criteria. A minimum score of 300 combined on the verbal and quantitative subtests.
- In addition, students applying to this program must have completed the following undergraduate courses: Biology (2 semesters); Statistics (1 semester); Calculus (1 semester); Organic Chemistry (2 semesters); Biochemistry.
- It is recommended (but not required) that students applying to the program have completed at least 6 credit hours of undergraduate Biochemistry. Those students who have only taken the minimum 3 hours of undergraduate biochemistry will have to include an additional 3 hours of graduate Biochemistry among the elective courses to complete the program.

The applicant will also be required to submit:

1. A completed application including a 1-2 page statement indicating the student's interests and professional goals
2. Official transcripts from all undergraduate institutions attended
3. At least two professional letters of recommendation with current contact information
4. Official scores from the GRE

Assessment of credentials will be supplemented by evaluation of letters of recommendation and the educational background of the student. Foreign applicants must meet all University entrance requirements and meet a minimum TOEFL score of 71 (or equivalent). More details for foreign applicants can be found here: <https://www.southalabama.edu/departments/international/requirements-deadline.html>

To ensure compatibility between the student's research interests and faculty expertise, particular attention will be given to the written statement of interest from applicants. A University faculty member will be asked to act as a "mentor" for the applicant based on the statement of interest, and if necessary, a follow-up interview. Through this process, the student's interests will be matched to the expertise available at the University. Where possible student's should contact potential mentors in advance or work with the graduate coordinator to find a potential mentor when applying to the program.

Fellowships And Assistantships

The Graduate School offers a limited number of competitive research and/or teaching assistantships to students in the Environmental Toxicology program at the University of South Alabama. These include tuition remission and waiver of out-of-state fees. Additional research assistantships may be possible through extramural grants and contracts.

Deadline For Applications To The Environmental Toxicology Program

Applications are accepted in the Fall semester in each year by the deadlines indicated in the University of South Alabama Bulletin. Early applications and inquiries are welcomed to assist in identification of potential mentors.