

## Program Requirements

### Prerequisites for Admission

- Basic chemistry
- Basic math
- Basic biology

A student can show proficiency in the above prerequisites through their undergraduate degree, taking CLEP exams, or experience. Alternatively a program can be specified to remedy deficiencies.

- Graduate Record Exam (GRE)

### Additional Requirements

MS students are required to complete 36 credit hours and Ph.D. students are required to complete 60 hours above the MS degree or 90 hours above the BS degree, including dissertation hours.

Ph.D. students must also satisfy the following requirements:

### Skill Component (6 hours)

Research skill includes: collection of data, data analysis, research methodology, data interpretation and research presentation. Suggested list of courses is available from the Program Coordinator or web site.

### Dissertation (15-24 hours)

The student must perform research that contributes substantially to the advancement of the field of environmental science. At the conclusion of the student's program, an oral defense of the written dissertation is required.

## Faculty

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## Environmental Chemistry, Toxicology & Risk Assessment Specialization

- Cutting Edge Research
- Focus in Ecotoxicology
- Risk Assessment Skills
- Program Flexibility
- Preparation for Exciting Careers

Environmental Science Graduate Program  
Oklahoma State University  
003 Life Sciences East  
Stillwater OK 74078-3011

<http://environ.okstate.edu/es>  
405-744-9229  
or 1-888-477-7422

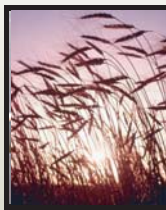
## Program Description

The Environmental Chemistry, Toxicology and Risk Assessment specialization is focused on assessing the transport, fate, exposure, and biological effects of toxic chemicals. The curriculum will train students to predict the migration of pollutants through environmental media (air, water, soil), estimate doses in human and ecological receptors, and define adverse consequences of exposure. Students will also be familiar with federal risk-based laws and regulations dealing with hazardous waste management, toxic substances, abandoned site remediation and natural resource depletion. Finally, students will also learn about how to communicate about risk and understand how lay persons perceive and judge risks.

## Research Component

An integral part of the graduate training in ECTRA is the development of research skills usually accomplished through a field and/or laboratory research project. Graduate research opportunities are available in many areas related to the exposure and effects of environmental toxicants on aquatic and terrestrial organisms. Graduate students conduct their research under the guidance of their major professors. ECTRA students are expected to produce manuscripts based on original research that are suitable for publication in peer-reviewed journals.

## ECTRA Focus Areas

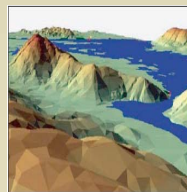


ECTRA Students may choose to focus either in toxicology or in risk assessment. Each area is designed to give students targeted training to help meet their career goals. An ECTRA MS or PhD is a smart choice.

## Focus Areas Support Courses

- \* ENVR 5050 Readings in Environmental Science
- \* ENVR 5210 Applied Standards for Environmental Managers
- ENVR 5303 Issues in Environmental Sustainability
- \* ENVR 5123 Environmental Problem Analysis
- \* ENVR 5813 Water Science
- \* ENVR 5823 Watershed Management
- \* ENVR 5423 Risk Perception & Communication
- ENVR 5703 Chemical Aspects of Environmental Science I
- ENVR 5713 Chemical Aspects of Environmental Science II
- \* ENVR 5743 Environmental Impact Assessment
- \* ENVR 5733 Environmental Site Assessment
- \* ENVR 5723 Human Toxicology for Environmental Scientists
- \* ENVR 6050 Advanced Readings in Environmental Science
- \* ENVR 6200/6011/6023/6031 Seminar in Environmental Problems
- \* ENVR 6210 Advanced Seminar in Environmental Science

\* Denotes courses to be developed or changing numbers



OWRB GIS Map

## Research Areas

- Fisheries and Wildlife Toxicology
- Toxicokinetics
- Bioavailability
- Reproductive Toxicology
- Developmental Toxicology
- Immunotoxicology
- Genetic Toxicology
- Environmental Chemistry
- Risk Assessment Protocols
- Evaluation of Environmental Risk
- Risk reduction from application of new remediation technologies (includes chemical and biological remediation of contaminated environments such as soil, water, and air)

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