**Emphasis - Environmental Toxicology**
- Ph.D. in Pharmaceutical Sciences
- Emphasis - Environmental Toxicology

**Ph.D. in Pharmaceutical Sciences**

**Description**
The Ph.D. in pharmaceutical sciences can be completed with an emphasis in environmental toxicology, medicinal chemistry, pharmaceutics, pharmacology, pharmacognosy, or pharmacy administration.

**Minimum Total Credit Hours: 57**

**Course Requirements**
Requirements for each emphasis area are given in the respective program description sections.

**Emphasis - Environmental Toxicology**

**Description**
The Ph.D. in pharmaceutical sciences with an emphasis in environmental toxicology prepares a graduate to perform independent research and solve problems related to environmental health issues. Graduates are likely to find careers in academics, industry, or government service.

**Course Requirements**
The core requirements for the Ph.D. with an emphasis in environmental toxicology are:
- Phcl 547 Introduction to Environmental Toxicology (2 hours)
- Phcl 675 Principles of Pharmacology and Toxicology I (4 hours)
- Phcl 676 Principles of Pharmacology and Toxicology II (4 hours)
- Bisc 504 Biometry (3 hours)

Additional course work may include Medc 610; Phcg 620 (marine toxins, chemical ecology, and biochemical adaptations); Phcg 627-628; Phcl 581, 661, 669; Bisc 553, 632; Chem 512, 580; and Geol 532. These elective courses are determined in consultation with the student’s advisory committee.

**Other Academic Requirements**
Doctoral students are also required to present a minimum of four seminars; one of these presentations can be over the student’s dissertation research. Doctoral students must complete a comprehensive examination (both written and oral components), administered by the student’s advisory committee and the program’s Admission, Retention, and Review Committee. Students must prepare a dissertation prospectus and prepare and orally defend a dissertation based on original, independent research.