

# PHARMACOLOGY AND TOXICOLOGY MINOR

## Pharmacology and Toxicology - Undergraduate Minor

The interdisciplinary pharmacology and toxicology minor is intended to significantly increase the number of ISU graduates who can:

- Understand, use and define key terms and concepts related to pharmacology and toxicology;
- Apply concepts and standard practices in pharmacology and toxicology to solving practical problems relevant to these fields;
- Analyze scientific data in pharmacology and toxicology;
- Synthesize detailed and accurate descriptions of current knowledge on key topics in pharmacology and toxicology;
- Make informed decisions about current controversies in pharmacology and toxicology, using appropriate scientific methods and ethical reasoning.

The minor in Pharmacology and Toxicology may be earned by completing the following courses. All minors require at least 15 credits; 9 credits of the courses listed in the minor must not be used to meet any other department, college, or university requirement except the credit requirement for graduation. There are three required courses for all Pharmacology and Toxicology undergraduate minors: TOX 401, B M S 439, and one physiology course selected from B M S 329, B M S 438 or BIOL 335. The remaining credits are fulfilled by any of the electives listed below.

### Required Core Courses:

TOX 401	Principles of Toxicology	3
B M S 439	Principles of Pharmacology	4
Select one of the following:		3-4
B M S 329	Anatomy and Physiology of Domestic Animals	
B M S 438	Principles of Physiology	
BIOL 335	Principles of Human and Other Animal Physiology	

**Total Credits** 10-11

### Electives:

A B E 424A	Air Pollution: Air quality and effects of pollutants	1
A B E 451	Food and Bioprocess Engineering	3
BBMB 316	Principles of Biochemistry	3
BBMB 404	Biochemistry I	3
BBMB 405	Biochemistry II	3
BIOL 381	Environmental Systems I: Introduction to Environmental Systems	3-4

BIOL 382	Environmental Systems II: Analysis of Environmental Systems	3
BIOL 423	Developmental Biology	3
BIOL 434	Endocrinology	3
BIOL 436	Neurobiology	3
B M E 440	Biomedical Applications of Chemical Engineering	3
B M S 443	Pharmacology and Therapeutics	3
B M S 448	Principles of Human Gross Anatomy	4
CHEM 211 & 211L	Quantitative and Environmental Analysis and Quantitative and Environmental Analysis Laboratory	4
CHEM 231	Elementary Organic Chemistry	3
CHEM 331	Organic Chemistry I	3
ENSCI 486	Aquatic Ecology	3
ENT 450	Pesticides in the Environment	3
FS HN 264	Fundamentals of Nutritional Biochemistry	3
FS HN 442	Issues in Food and Society	2
FS HN 461	Medical Nutrition and Disease I	4
FS HN 464	Medical Nutrition and Disease II	3
FS HN 467	Molecular Basis of Nutrition in Disease Etiology and Health Promotion	3
FS HN 489	Issues in Food Safety	1
TOX 354	General Pharmacology	3
TOX 419X	Foodborne Hazards	3
TOX 420	Food Microbiology	3
TOX 426	Veterinary Toxicology	3
TOX 490	Independent Study	1-2
TOX 499	Undergraduate Research	1-3