

PROPOSED

Syllabus Biology 306 - Environmental Toxicology

Scope

In the ever-changing dynamics of the universe both nature and man have not remained unchanged or static, but rather, have evolved into new creatures with ever changing environments. "Environmental Toxicology" is a new course designed to give interested parties, science majors and non-science majors a look at the current biosphere and how the evolution of earth and its inhabitants affect the space in which we live and interact.

Objectives

1. To give students a sense of what toxicology is, how it evolved, how it's measured and how it affects their individual and collective lives.
2. To provide students with the necessary tools to understand scientific evolutions and occurrences that relate to their environment from a toxicological perspective.
3. To have students from vast urban and foreign backgrounds gain an appreciation of the need to protect the environment by learning what has been done to change the environment and what they can do to understand and affect those changes.
4. To clear up misconceptions that exist or that are perpetuated about toxins in the environment, whether zimbic or natural, through hazard benefit analysis.
5. To provide a stimulus for students to think about alternative career paths and alternative causes to adopt or get behind.

Prerequisites

Math 105, Biology 104 and Chemistry 102

Text

Environmental Toxicology and Chemistry by Donald G. Crosby; Oxford University Press, 1998

Topics	Week
1. Environmental Toxicology	1
2. Environmental Chemicals	2
3. Environmental Dynamics	3
4. Examination	4
5. Biological and Non-Biological Transformations	4-5
6. Intoxication	6
7. Mechanisms of Intoxication	7
8. Examination	8
9. Quantitative Toxicology	8-9
10. Inorganic Toxicants	9

11. Organic Toxicants	10
12. Biotoxins	11
13. Refractory Pollutants	12
14. Final Exam	13

Discussions

Every three weeks the class will be lead in discussion by a designated group of students to discuss one of the following topics, which changes from year to year: 1. Ecotoxicology 2. Adaptation 3. Chemical Carcinogenesis 4. Environmental Persistence

Grading

Students are graded on a 600 point system, which includes the following:

Examinations 300 pts.

Discussion 100 pts.

Laboratory 125 pts.

Final 75 pts. 600 pts.

A+ 98 - 100

A 94 - 97

A- 90 - 93

B+ 87 - 89

B 84 - 86

B- 80 - 83

C+ 77 - 79

C 74 - 76

C- 70 - 73

D+ 67 - 69

D 60 - 66

F Below 60

The tri-week discussions will include outside experts to give philosophical discourse as a means of stimulating the student discussion.