

**IB 485: ENVIRONMENTAL TOXICOLOGY AND HEALTH**  
**( ENVS 431, CHLH 461)**

2083 Natural History Bldg

WEBSITE: <http://www.life.illinois.edu/bfrancis/ib485/>

**Instructor:**

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**Prerequisites:**

1 college course in chemistry and one college course in biology, OR permission of instructor.

**Learning Objectives:**

The goals of this course are:

1. to learn the basic principles of toxicology;
2. to use historical examples of environmental contamination to elucidate the effects of chemicals *in the environment on* human health and ecosystems;
3. to apply our understanding of the past to current environmental contaminants and to preventing future environmental crises.

**VERY Tentative Schedule of Topics: Spring 2019**

Week of	Topic
<b>January</b>	14 Course Introduction; Acute toxicity
	21 Acute toxicity assays; Kinetics
	28 Chronic exposure & delayed effects; metals
<b>February</b>	4 Reproduction and development
	11 Genetics ...
	18 ... and Cancer
	25 Water and soil
<b>Term Paper Topics due Thursday 1 March (required for undergraduates)</b>	
March	4 Persistence and bioaccumulation
	11 Predicting disaster; Pesticides
	<b>Midterm Exam Thursday, 3/15</b>
	18 Spring Break
	25 Hazardous wastes; radiation
<b>Term paper drafts due Thursday 3/29</b>	
April	1 Air pollution; Ozone
	8 Acid precipitation; Montreal Protocol
	<b>Term papers due Thursday 4/19 unless draft was submitted</b>
	15 Climate change
	22 Environmental economics
	29 Environmental Policy
<b>Final drafts of <u>all</u> term papers are due when class begins on Wed 5/1.</b>	

### **TEXTBOOKS (optional) :**

*Elements of Style*, 4<sup>th</sup> edition, W. Strunk, Jr. and E.B. White, Longman, 2000 (You may substitute any other manual of style that you already own or prefer, but this is an enjoyable book to read as well as being a guide to clear writing.)

### **WEBSITE**

I will post readings and assignments on the website, which is on moodle, at:  
<https://learn.illinois.edu/auth/shibboleth/gateway.php>

### **READINGS:**

I will post background material on the website – this will consist of text from “Toxic Substances In The Environment”, as well as material that originated as handouts in previous years. In addition, current topical readings (from newspapers, magazines, or journals) will be posted for discussion during lecture.

### **Copyright Warning:**

Most of the posted material is under copyright protection. I may provide it to my class under the educational exemption – but it may not be distributed publicly. Please do not post handouts on social media sites or other public venues, since the university can be seriously harmed by such activities.

### **EXAMINATIONS and GRADING:**

Grades will be based on short written assignments and class participation in discussions (30%), an in-class mid-term essay (20%), a term paper (25%), and a final (25%). The final will be cumulative (that is, it will require your drawing on material from the entire term) and will consist of a take-home essay due on the day of the official final.

The term paper grade will depend equally on the content and the clarity and style of your exposition. Any subject related to the presence of toxic substances in the environment, and/or their effects on humans, other organisms, or the broader environment, is an acceptable topic. “Toxic substances” includes engineered organisms as well as natural and synthetic chemicals, but does *not* include microorganisms or the diseases they cause. Processes for generating or controlling toxic substances are also valid topics. You may, but need not, take a position on a controversial topic – and I do not grade on the basis of the position taken, but on how well it is supported.

Failure to complete any part of the course work will result in a 0% for the missing work. If/when the missing work is completed, the grade will be altered in accord with University rules, possibly with deductions for late work.

I do give +/- grades.

### **ATTENDANCE**

I do not take attendance unless there is discussion scheduled. You are responsible for finding out what material was covered if you miss class. If you have a serious reason for an absence, I will provide notes of the lecture. If you are absent as a matter of convenience, I expect you to get this information from other students. I will post pdfs of lecture powerpoints on the website.

When oral presentations are scheduled, I expect everyone to attend class. Absence without good cause will be penalized.

### **ACCOMMODATIONS:**

Students with disabilities are entitled to ‘reasonable accommodations’ of their disabilities. Accommodation is also available for a student's religious beliefs. If either applies to you, please tell me as soon as possible so we can arrange the appropriate accommodation. The student handbook gives more information, and is the authoritative source for these issues, but talk to me about possible issues.