Environmental and Toxicological Studies

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Description: It is now widely recognized that our environment plays a greater role than our genes in cancer causation and for certain other diseases. Spanning from chemistry to pathophysiology, the objective of this concentration is to learn how exposures lead to disease, and how we can prevent disease. Importantly, many environmental contaminants have been reduced in the US, but are still prevalent abroad, particularly in locations where Environmental Justice is a concern. Environmental health is therefore of critical importance to public health on a global level.

Guide for class selection: Two required courses are specified, and one additional course must be selected from the list provided to complete this concentration.

Restricted Electives

Required (24 units)

20.201 Fundamentals of Drug Development (G)*
Prereq: permission of instructor

20.213 DNA Damage and Genomic Instability (G)*
Prereq: 5.07, 7.05; or permission of instructor

* These courses are open to and welcome undergraduate student enrollment.

Select 1 additional subject from the following list

1.089 Environmental Microbiology (U)
Prereq. Biology GIR (suggested)

or

20.106 Systems Microbiology (U) [same subject as 1.084J]
Prereq: Biology (GIR), Chemistry (GIR)

1.071 Global Change Science (U)
Prereq: 18.03

1.085 Air Pollution (U)
Prereq: 18.03

1.725 Chemicals in the Environment: Fate and Transport (G)
Prereq: permission of instructor

Electives

These additional subjects can enhance the learning objectives of the concentration.

1.010 Uncertainty in Engineering (U)
Prereq: Calculus II (GIR)

1.018A Fundamentals of Ecology I (U)
Prereq: None
1.018B **Fundamentals of Ecology II (U)**  
Prereq: 1.018A

1.080A **Environmental Chemistry I (U)**  
Prereq: Chemistry (GIR)

1.080B **Environmental Chemistry II (U)**  
Prereq: Chemistry (GIR)

7.331 **Infections and Inequalities: Interdisciplinary Perspectives on Global Health**  
Prereq. None

12.340 **Global Warming Science (U)**  
Prereq: Calculus I (GIR), Physics I (GIR); or permission of the instructor; Coreq: 5.60

20.104 **Environmental Cancer Risks, Prevention and Therapy (U)**  
Prereq: Calculus II, Biology (GIR), Chemistry (GIR)

20.260 **Analysis and Presentation of Complex Data**  
Prereq: permission of the instructor