

# ENVH 105: Toxic Tales: Building Skills for Academic Success Through the Study of Poisons

T and Th 2 credits - 10:30 -11:20 Instructional Center room 226

**Instructors:** Therese Mar, PhD and Raymond Malfavon-Borja, PhD

## Course Description

In this course students will develop academic skills through the study of basic toxicology. With historic and present day “toxic tales,” we will explore some fundamental concepts of toxicology such as dose response, routes of exposure and factors influencing toxicity. In this context, students will develop skills for academic success, including higher order thinking skills such as analysis, synthesis and evaluation; presentation skills; study strategies; time management; personal accountability and resiliency. Finally, this course will provide opportunities for students to learn more about the field of environmental health and related careers.

## Course Objective

- Promote study skills and learning strategies necessary for success in STEM courses. This will include: understanding one’s learning style, reading textbooks, note taking, time management and organization, personal accountability, resiliency, and connecting to resources.
- Provide an introductory overview of the fundamentals of toxicology. By acquiring some familiarity to the basic building blocks of toxicology, students will be able to build upon their interest and knowledge in subsequent courses.

## Evaluation and grading

This course includes lectures, group discussions on study skills, and student presentations. Grades are based on attendance, class participation, study skills assignments, a 2-3 page paper, and a student presentation.

## Paper and Presentation

Students will write a 2-3 page paper, and present to the class a historical or current topic “hot topic” related to toxicology. This may be something that has appeared in the news or scientific literature. This paper and presentation must include:

- background of the toxicant
- how people are exposed
- evidence from scientific literature
- Significance of this event to the field of environmental health/toxicology : eg. biological effects, routes of exposure, risk assessment, policy, environmental /social justice

## Tentative Weekly Outline

### Week 1

History of toxicology  
The dose makes the poison  
Study Skill of the week: Assessing learning styles

### Week 2

Factors that affect toxicity: Absorption, Distribution, Metabolism and Elimination  
Study Skill of the Week: Time management, avoiding procrastination

### Week 3

Class activity: lemons and onions to illustrate link between exposure and health hazards  
Forming hypothesis, observations, collecting and analyzing data, drawing conclusions  
Study skill of the week: Note taking and reading text

### Week 4:

Toxic Tale of Lead  
Study Skill of the week: Brain health – Improving Academics Through Mindfulness  
Dr. Leah Spence and Dr. Todd Sperry

### Week 5

Toxic Tale of Arsenic  
Study Skill of the week: Presentation and communication skills

### Week 6 :

Toxic Tale Mercury  
Study skill of the week: personal accountability, motivation and goal setting

### Week 7:

Introduction to environmental justice: North Carolina Case study  
*Real People-Real Stories: Seeking Environmental Justice-Afton, NC*  
Study Skill of the week: Resiliency and connecting to resources

### Week 8-9

student presentations

### Week 10

Panel discussions from Environmental Health Students