

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 Gordon Maeha

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
Guest speakers - 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: Novices vs. Experts - guest speaker Scott Clary

Week 7:

Introduction to environmental justice: North Carolina Case study
Real People-Real Stories: Seeking Environmental Justice-Afton, NC
Student presentations

Week 8-9

student presentations

Week 10

Student presentation
Panel discussions from Environmental Health Students