Food Safety and Toxicology Chem 493

Prerequisites for class: Recommended Chemistry 104 or higher

Instructors:

Dr. Lawrence Duffy

Office: 246 West Ridge Research Building (WRRB)

Phone: 474-7525

Email: lkduffy@alaska.edu

Bret Luick

ïðó K[E]oo μ]o]vP

907-474-5170 bluick@alaska.edu

Lectures: Tuesdays and Thursdays, 3:40 t 5:10 pm, Murie 105

Textbook: Introduction to Food toxicology (2nd edition) by T. Shibamato, LF Bjeldanes, Academic Press/ Esevier

Course description: Introduction to food safety and toxicology includes the understanding of the entire range of toxic compounds found in foods-whether naturally occurring or used by industry. Topics include: mechanisms of regulation of xenobiotic activation and deactivation; developments in the modes of action and impact of natural toxins in food plants; a comprehensive review of the issues surrounding dioxins; the function of antioxidants and their toxicological aspects; phytochemicals, their beneficial effects and the modes of action of this growing group of nutraceuticals from food plants; diet and drug interactions.

Learning Objectives:

Upon successful completion of this course, students will

- 1. be able to demonstrate a fundamental knowledge of processes and endpoints in the human body associated with exposure to toxic agents in the human food chain;
- be able to demonstrate a fundamental knowledge of risk assessment and food safety as it is applied to toxic agents in the human food chain;
- 3. acquire mastery with the major issues, concepts, and subject areas in food toxicology;
- 4. acquire mastery of sourcing and synthesizing information in aspects of Food Chemistry, Toxicology, and Microbiology as it applies to chemical food safety and food toxicology.

Week	Lecture Title
1	Introduction to Food Toxicology
2	Some Concepts of Toxicology
3	Dose Response
4	Absorption and Distribution
5	Storage and Excretion
6	Acute and Chronic Toxicity; and Teratogenesis and Mutagenesis
7	Biotransformation biomarkers
8	Midterm Exam
9	Carcinogen
10	Natural toxins
11	Phytochemicals Caffeine
12	Food Contaminants Heavy metals and Mercury in the Human Food Chain
13	Pesticides Organophosphates

Grading Scheme: Based on a total of 400 points

Term exam 1	100 points
Term exam 2	100 points
Final exam	100 points
Term paper	50 points
Participation	50 points

Regular attendance is expected for discussions and participation.

The Chemistry & Biochemistry Department Policy on Cheating is: