

**Division of Occupational and Environmental Health
Graduate School of Public Health
College of Health and Human Services
San Diego State University**

PRINCIPLES OF TOXICOLOGY (PH 638A)

Fall 2006, Schedule No. 24113

INSTRUCTOR: Teresa Dodd-Butera, DABAT **TIME/PLACE:** Mon 9-1140am,
Office Hours: HT104; M/W 12:30-1:30pm **CONTACT:** tdoddbutera@gmail.com
Also, by appointment Phone (619) 995-4057

LEARNING OBJECTIVES:

Students who successfully complete this course should be able to:

1. Explain general principles of toxicology including absorption, distribution, excretion and biotransformation ;
2. Describe testing procedures for conventional and nontarget organ toxicities;
3. Discuss target organ and systemic toxicity of chemicals and agents;
4. Demonstrate the ability to research and effectively communicate topics including toxic substances, risk assessment, environmental toxicology and applications of toxicology.

TOPICS TO BE COVERED: See Course Syllabus

REQUIRED TEXT:

Casarett & Doull's Essentials of Toxicology; McGraw – Hill Companies, Inc., *Medical Publishing Division*; New York, NY; 2003.

Grading will be based on:

Exam 1: 20%; Exam 2: 20 %; Final 25%

Position Paper: 25% (10% - Written; 10% Oral presentation; 5% Assignments associated with this project);

Journal Club/Class Participation: 10% (Articles will be assigned)

COURSE PREREQUISITES:

Anyone attempting a basic graduate-level course in toxicology should have successfully completed courses in human anatomy and physiology and have a background in general, organic, and biochemistry. Basic math skills, including algebra, are also required. Previous courses which would be helpful in this and future toxicology courses include: histology, pathology, cell physiology, molecular biology, genetics, and pharmacology. See the course instructor if you have any questions about your background for this course.

OTHER RECOMMENDED REFERENCES:

A good medical dictionary (e.g. Taber's, Stedman's)

Hayes, A.W. (ed), Principles and Methods of Toxicology, Taylor & Francis, 2001.

Lemke, T.L., Review of Organic Functional Groups: Introduction to Medicinal Organic Chemistry, 3rd edition, Lea & Febiger, Philadelphia, 1992.

COMMUNICATION: email and BLACKBOARD

SYLLABUS*

- Aug 28th General Principles of Toxicology; History, Scope, Applications,
**Chapters 1, 2, 17, 19, 30-34; Begin research and submission of topic for
Position Paper;**
- Sept. 11: Mechanisms of Toxicity;;Disposition of Toxicants: Absorption,
Distribution , Excretion; **Chaps. 3, 5;**
- Sept. 18: Biotransformation; Toxicokinetics
Chapters 6-7
- Sept. 25: Finish Toxicokinetics; **Exam Review (Come to class with
questions);**
- Oct. 2: **EXAM I**
- Oct. 9: Love Library; Position paper research
- Oct. 16 Toxic Responses of Blood and Cardiovascular System;
Mutagenicity, Carcinogenicity; ; **Ch: 8,9,4;** Radiation; Carbon Monoxide;
Benzene; **Ch.11, 12, 18, 25; Approved topic for Position Paper due**
- Oct. 23 Toxic Responses of Liver, Kidney, and Respiratory
System; Toxic Effects of Pesticides, Solvents, and Vapors; **Ch. 13,
14,15,22,24;** Exam Review
- Oct 30 Toxic Responses of the Nervous System
and Toxic Effects of Metals; **Ch 16, , 23;**
10 Research Articles; EXAM review (Come to class with questions)
- Nov. 6 **EXAM II;**
- Nov 13 Developmental Toxicology, **Ch 10,20, 21;**
Environmental Toxicology; **Ch 26,27, 28,29;**
- Nov. 20: Student oral presentations
Nov. 27 Student oral presentations
Dec. 4 Student oral presentations; **Position Paper due**
- Dec 15 **FINAL EXAM;** 8-10 am

*Schedule subject to change, if deemed necessary by instructor.