

## BSc 424 TOXICOLOGY

Spring 13

**Instructor:** Dr. JP Slovak

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Other hours by appointment

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**Office Hours:**

MWF 10-11 PM

TR 1-2 PM

**Required textbook:** *Casarett & Doull's Essentials of Toxicology*, C.D. Klaassen and J.B. Watkins, 1<sup>st</sup> ed.

**Additional Resources:** *Casarett & Doull's Toxicology: The Basic Science of Poisons*, Companion Handbook, C.D. Klaassen and J.B. Watkins

**Course Description:** BSc 424 is an overview of the basic science of poisons, including the absorption, disposition, and excretion of chemicals in the body, the role of metabolism in enhancing toxicity, mechanisms of toxicity and the effects of toxicants on major organ systems.

**Course Goals and Objectives:** The primary goal of this course is to provide an understanding and knowledge of the mechanisms of toxicity including the role of metabolism in enhancing and reducing toxicity and the effects of toxicants on major organ systems. Students are expected to learn the following fundamental toxicological concepts: major classes of toxicants, absorption, distribution and storage of toxicants, biotransformation and elimination of toxicants, and effects of toxicants on major organ systems.

**Student learning objectives:**

1. Students can describe the major classes of toxicants.
2. Students can explain the concept of an LD<sub>50</sub>.

**Method of Teaching:** This toxicology course utilizes a variety of instructional methods, including reading assignments, lectures, problem solving and written assignments. Students are responsible for all reading assignments, lecture material, and other assignments.

**Writing/Presentation** A total of ten abstracts will be written over the semester. These will consist of a summary of a current article more recent than 2002. Each paper should be between 1-2 pages. Limit your reading to refereed journals or respected popular science journals. These 10 articles should have a common theme as you will compile them into a research paper. Each student will give a powerpoint presentation on their completed paper at the end of the semester. The abstracts

will be due weekly except for weeks in which tests are scheduled or as instructed. You will also be asked to discuss your paper during class time. The weekly papers and discussion will account for 40% of your writing grade. It is imperative that you attend class and participate in the class discussion of the papers.

**Plagiarism is a criminal activity. You must cite all sources of information. Copying of material, whether, whether parts of sentences, whole sentences, paragraphs, or entire articles, will result in a score of zero for your essay and can result in further disciplinary action.**

**Grading:**

3 exams                      300 pts (each test worth 100 pts)  
Paper/Presentation      100 pts  
Total possible points:      400 pts

A       $\geq 360$  pts ( $\geq 90\%$ )  
B      320-359 pts (80-89%)  
C      280-319 pts (70-79%)  
D      240-279 pts (60-69%)  
F       $<240$  pts ( $<60\%$ )

**Course Topics:** These are in sequence starting the week of January 14<sup>th</sup>.

	<u>Chapter(s)</u>
Introduction to toxicology	1-3
Disposition of toxicants	
Absorption/distribution of toxicants	5
Metabolism of toxicants	6
Elimination of toxicants	5
Toxokinetics	7
Genetic toxicity	
Carcinogenesis	8
Genetic and developmental toxicity	9,10
Target organ toxicity	
Blood/immune system	11,12
Liver	13
Kidney	14
Respiratory system	15
Nervous system	16
Cardiovascular system	18

**Attendance:** You are expected to attend ALL scheduled lectures and take the exams as scheduled. You will be held responsible for all information covered in lecture. Sign-in sheets will be circulated; please sign your name clearly. Excessive unexcused absences will result in loss of points from your grade. More than five unexcused absences will result in a reduction of five (5) points being subtracted from your final grade (percentage). The student is responsible for requesting a makeup when they are unable to attend the regularly scheduled examination. Makeup exams will be scheduled only in the event of an EXCUSED absence (as defined in the Student's Guidebook). If the test is not made-up, the student will receive a zero for that exam.

**Students with Disabilities:** Students requesting accommodations for disabilities must go through the Academic Support Committee. For more information, please contact the Director of Disability Resources & Services, Halladay Student Services Bldg., Room 303D, (903) 886-5835.

**Academic Honesty:** All students are expected to maintain high standards of integrity and honesty in all academic work. Conduct that violates the accepted standards of academic honesty (as described in the Student's Guidebook), which includes cheating and plagiarism, will result in a grade of F in the course.

*"All students enrolled at the University shall follow the tenets of common decency and acceptable behavior conducive to a positive learning environment." (Student's Guide Handbook, Policies and Procedures, Conduct)*