

Toxicology Graduate Courses

TXCL 7310 Fundamentals of Pharmaceutical Sciences 3.0 cr.

(Fall) Crosslisted: PHSC 7310 Dr. Robert Scheinman

This core course explores key aspects of Pharmaceutical Sciences. Major themes will focus on macromolecular interactions, pharmaceuticals, pharmacokinetics, pharmacodynamics, apoptosis, signal transduction and immunology. Critical thinking and problem solving skills will be emphasized via lectures discussions, and computer-based data analyses.

TXCL 7320 Physical Pharmacy and Pharmaceutical Sciences 3.0 cr.

Dr. W. Wempe - (Spring) Crosslisted PHSC 7320

This course was designed to provide students with a thorough overview of physical chemical principles vital to Pharmaceutical Sciences; a course for someone whose research efforts will involve pharmaceutical development and/or the evaluation of drugs.

TXCL 7322 Molecular and Target Organ Toxicology 3.0 cr.

(Fall) Prereq: Need discussion with and consent of Instructor. Dr. David Ross

The course is designed to provide a foundation in molecular mechanisms of toxicity. Biochemical mechanisms underlying toxicity will be analyzed and integrated with discussions of reactive metabolites, oxidative stress, signal transduction, cell death and organ specific toxicity.

TXCL 7323 Environmental and Target Organ Toxicology 2.0 cr.

(Spring) Prereq: Need discussion with and consent of Instructor. Dr. Jared Brown

The course is designed to provide a fundamental understanding of environmental-related toxicants (e.g. solvents, pesticides, metals, radiation) with emphases on the molecular mechanisms underlying their organ specific toxicity and on risk assessment.

TXCL 7325 Current Topics in Toxicology Research 1.0 cr.

Dr. L. Nield (Fall, Spring)

This is a mandatory 1-credit hour course for Toxicology program graduate students. Each student is expected to lead one discussion per year, papers discussed will be authored by the upcoming Toxicology seminar series speaker. Grade given after Spring semester.

TXCL 7330 Development of Drugs and Biologics 3.0 cr.

(Fall) Cross listed with PHSC 7330 Drs. M. Joy and J. Carpenter

A survey course designed to introduce students to pharmacokinetic and pharmacodynamics principals used in drug research and development by faculty of the Skaggs School of Pharmacy, Department of Pharmaceutical Sciences. The Phoenix Winnonlin Computer software, is used to complete homework.

TXCL 7340 Ocular Physiology, Pathophysiology & Pharmacology 1.0 cr.

(Summer) Dr. J. Mark Petrash

This interactive course will survey major diseases of the vision system. Lectures will cover the physiological basis for disease and current treatment options being used in the clinic, with emphasis on opportunities for new strategies to treat and prevent disease.

TXCL 7400 Ethical Issues in Toxicology and Pharmaceutical Sciences 1.0 cr.

(Fall) Drs. L. Saba & M. Huntsman

The purpose of this course is to expose students to ethical issues in the fields of Toxicology and Pharmaceutical Sciences. Emphasis will be placed on research conduct, animal use, and other timely issues relevant in these fields.

TXCL 7452 Introduction to Clinical Pharmacology 3.0 cr.

(Fall, Spring) Prereq: Permission of Course Director. Crosslisted with PHSC 7452. Dr. Peter Rice

The course provides students with a foundational knowledge of clinical pharmacology, including pharmacokinetics, drug metabolism, assessment of drug effects, optimizing patient therapy and drug discovery and development. It is grounded in weekly topical lectures, supplemented by readings, discussion and assignments.

TXCL 7475 Advanced Topics in Toxicology 1.0-6.0 cr.

(Fall) Prereq: Permission of instructor/Program Director.

Considers special topic of current interest in toxicology. Course may be repeated for credit with instructor's consent.

TXCL 7564 Environmental Risk Assessment and Applied Toxicology 2.0 cr.

(Spring) Dr. David Pyatt

Provides students with experience in risk assessment, environmental toxicology for public health and regulatory decision making. Topics include comprehensive human health risk assessments, baseline/probabilistic statistics, ecological risk assessment activities associated with emergency action, medical monitoring, role toxicology plays in courtroom.

TXCL 7575 Drug Development for the Toxicologist 2.0 cr.

(Spring) Prerequisites TXCL 7322 Dr. Dorothy Colagiovanni

Overview of drug development process. Course will provide understanding of regulatory obligations required for submitting an N.D.A. as well as discussions related to additional corporate roles including activities for in vivo study conduct & due diligence review for licensing opportunities.

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TXCL 7650 Research Rotation in Toxicology 1.0-5.0 cr.

(Fall, Spring, Summer)

Research work in toxicology.

TXCL 7665 Pharmacokinetic Principles & Applications 3.0 cr.

(Spring) Cross-listed with PHSC 7665 Drs. Melanie Joy and Peter Anderson

A survey course to introduce students to pharmacokinetic and pharmacodynamics principles used in drug research and development. Taught by faculty from the School of Pharmacy, Department of Pharmaceutical Sciences. Phoenix Winnonlin Computer software will be used in the course.

TXCL 7750 Omics for Biomarker Discovery 3.0 cr.

Dr. N. Reisdorph (Fall, odd years) Prereq: Consent of the instructor.

An introduction to mass spectrometry followed by a focus on quantitative metabolomics or proteomics workflows. Workflows comprise sample preparation, data acquisition, and data analysis. Additional topics include imaging mass spectrometry, lipidomics, post-translational modification analysis, and clinical applications.

TXCL 7751 Neurotoxicology 2.0 cr.

Dr. M. Huntman (Spring) Prereq: Consent of the instructor.

Offers a specialization in neuroscience-related toxicology. Topics – both basic and applied – have been identified as: Neuropharmacology (affect of ethanol/drugs), Neurophysiology (metabolic poisons), Developmental Neurotoxicology (pesticides and neurodevelopmental disorders, radiation), and Behavioral Toxicology (cognitive function).

TXCL 8990 Doctoral Thesis 1.0-10.0 cr.

(Fall, Spring, Summer) Prereq: Consent of the instructor.

Doctoral thesis work in toxicology.