

King Saud University

College Of Science

Department of Biochemistry

Syllabus for BCH 454 – Toxicology & Carcinogens

Course Description

The aim of this course is to understand the biology of cancer and Carcinogenesis. It also covers the mechanism of Carcinogenesis and classification of carcinogens. It also will look at carcinogenic mutagenesis and how the environmental occurrence and the environmental fate cause human exposure to carcinogens. This course also will introduce students to Fundamental Rules of Toxicology and molecular principles of specific Toxicants related to Molecular Targets.

Course Objectives and Outcomes

- Describe the biology of cancer and development
- Understand the mechanism of carcinogenesis and carcinogens
- Gain knowledge about the toxicology
- To recognize how the risk factors and environmental occurrence that cause human exposure to carcinogens and toxicants.

Lecture schedule

Lecture	
Introductory	
Introduction to toxicology	
Fundamental Rules of Toxicology	Toxicity , Dose ,Exposure, Hazard Dose-Response Concept
Definitions	Poisons Toxicant Toxin Xenobiotic

	Antidotes Target (non-target) organism
The Toxicological Process (Toxicokinetics)	Absorption, Distribution, metabolism and Excretion
Molecular Targets	adverse effects of a toxicant on living organisms
Biology of cancer	Cancer and tumor Hallmarks of cancer
Cancer types and development	Causes of cancer
Carcinogens	Chemical properties and classification
Mechanisms of Carcinogenesis	
Mutations in cancer and mutagenesis	
Carcinogens in Food	

Reference textbooks

Casarett and Doull's TOXICOLOGY The Basic Science of Poisons, C. Klaassen, M. Amdur, and J. Doull, eds, Eighth Edition, 2013