

Course Objectives

The course objectives are:

1. To provide knowledge about the different carcinogenic, mutagenic and teratogenic agents and their mode of action
2. To study the effects of different chemicals on living cell.

Course Learning Outcomes:

Upon successful completion of the course, the student will be able to:

1. To understand different carcinogenic, mutagenic and teratogenic agents and their mode of action.
2. To analyze the effects of different chemicals on living cell

Course Contents:

Biotransformation/Disposition of toxicants; Phase-I and Phase II Biotransformation Reactions; Mechanism of Toxicity; Delivery, from the site of Exposure to the Target; Absorption versus prtesytemic Elimination; Distribution to and away from the Target; Excretion versus Re-absorption; Toxication versus Detoxication; Toxicity resulting from Delivery; Reaction of the Ultimate Toxicant with the Target molecule; Attribution of Target Molecules; Effects of Toxicant on Target Molecules; Cellular Dysfunction and Resultant Toxicities; Toxicant-induced Cellular Dysregulation; Toxic alterations of Cellular Maintenance; Repair and Dysrepair.

Teaching-Learning Strategies

Teaching will be a combination of class lectures, class discussions, and group work. Short videos /films will be shown on occasion.

Assignments

The sessional work will be a combination of written assignments, class quizzes, presentation, and class participation/attendance.

Assessments and Examination

| | |
|------------------|----------|
| Sessional Work: | 25 marks |
| Midterm Exam: | 35 marks |
| Final term Exam: | 40 marks |

Books Recommended:

1. KLAASSEN, CURTIS D., (1996). *Casarett and Doull's Toxicology: The Basic Science of Poisons*; 5th Ed. (International), McGraw-Hill, Health Professions Division, New York.
2. Timbrel, J.A., 1995. *Introduction to Toxicology*, 2nd Ed. Taylor and Francis Ltd., London.

Books Recommended:

1. Hayes, A. Wallace, 1994. *Principles and Methods of Toxicology*, Third Ed., Raven Press, New York.

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Course Contents:

Study of toxicity of any chemical on total leukocytic count. Effect of a toxicant on total erythrocytic count in blood of mice. Effects of any toxicant on haemoglobin level in mice. Study of inhibition of cholinesterase enzyme activity by organophosphate insecticides in mice. Study of liver function enzyme (Alanine amino transferase) activity following administration of toxic compound to experimental animals. Determination of blood glucose level following toxic exposure.

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