School of Pharmacy / School of Pharmacy (English)

2024 - 2025 Academic Year

TOXICOLOGY

Syllabus

Course Description					
Name	**Code**	**Semester**	**T+A Hour**	**Credit**	**ECTS**
TOXICOLOGY	PHA4214876	Spring Semester	3+0	3	5

Prerequisites Courses	FARMAKOLOJİ III
Recommended Elective Courses	
Language of Instruction	English
Course Level	First Cycle (Bachelor's Degree)
Course Type	Required
Course Coordinator	Prof.Dr. Gülden Zehra OMURTAG
Name of Lecturer(s)	Assist.Prof. Sezgin AYDEMİR
Assistant(s)	
Aim	The aim of this course is to inform the general toxicological concepts, toxic dose, entryways into the body of poisons, toxicokinetic and toxicodinamy, systematic toxicology and toxicological examination of chemicals, general principles of treatment in poisoning, allergy, genetic factors, and adverse drug reactions.
Course Content	This course contains; Introduction to toxicology, dose, entryways into the body, and absorption of poisons.,Distribution, accumulation, biotransformation of toxicants and factors affecting biotransformation. Excretion of poisons.,Toxic effect mechanisms (Toxicodynamics),Systemic toxicology. Toxicological analysis of xenobiotics. Assessment and risk analysis of the test results. Factors affecting toxicity.,Toxic effects of organic solvents. Biomarkers.,Toxic effects from herbal and animal poisons,Mycotoxins and toxic effects of mycotoxins. Mushroom poisoning and treatment of mushroom poisoning,First aid in acute poisoning, antidotes and treatment principles,Toxicity of pesticides, and treatment of pesticide poisoning,Drug toxicity. Treatment of acute poisoning with drugs,Toxicity of metals.,Carbon monoxide poisoning and treatment of carbon monoxide poisoning. Cyanide poisoning and treatment of cyanide poisoning.,Pharmacogenetics, toxicogenomics, the difference between pharmacogenetics and allergic reactions.,Adverse drug reactions and pharmacovigilance practices in Turkey.

Course Learning Outcomes	**Teaching Methods**	**Assessment Methods**
1. Defines toxicology and the concept of dose.	13, 16, 9	A
1.1. Evaluates the ways poisons enter the body and their absorption.	13, 16, 9	A
1.2. Evaluates the distribution of poisons, their accumulation in the body, biotransformation and factors affecting biotransformation, and excretion of poisons.	13, 16, 9	A
2. Explain toxicodynamics and toxicokinetics.	16, 9	A
2.1. Explains systemic toxicology.	16, 9	A
3. Compares and evaluates poisons of plant and animal origin and their toxic effects.	13, 16, 9	A
3.1. Evaluate mycotoxins and their toxic effects.	13, 16, 9	A
3.2. Comments on mushroom poisoning and its treatments.	13, 16, 9	A
3.3. Explains pesticides and their toxic effects and treatment steps.	13, 16, 9	A
4. Classifies the symptoms and treatment methods of poisoning by xenobiotics.	16, 9	A
4.1. Evaluates acute and chronic toxicity symptoms of metals.	16, 9	A
4.2. Evaluate the toxic effects of organic solvents.	16, 9	A
4.3. Evaluates the treatment method in cases of drug poisoning according to the symptoms and degree of poisoning. ☐	16, 9	A
5. Explains first aid steps and antidotes in acute poisoning.	13, 16, 9	A
6. Defines the concepts of pharmacogenetics, toxicogenomics and pharmacogenetics.	13, 16, 9	A
6.1. Defines the concepts of adverse effects and pharmacovigilance.	13, 16, 9	A

Teaching Methods	13: Case Study Method, 16: Question - Answer Technique, 9: Lecture Method
Assessment Methods	A: Traditional Written Exam

Lecture Schedule

Sequence	**Topics**	**Preliminary Preparation**
1	Introduction to toxicology, dose, entryways into the body, and absorption of poisons.	1
2	Distribution, accumulation, biotransformation of toxicants and factors affecting biotransformation. Excretion of poisons.	1
3	Toxic effect mechanisms (Toxicodynamics)	1
4	Systemic toxicology. Toxicological analysis of xenobiotics. Assessment and risk analysis of the test results. Factors affecting toxicity.	1,2
5	Toxic effects of organic solvents. Biomarkers.	1
6	Toxic effects from herbal and animal poisons	1
7	Mycotoxins and toxic effects of mycotoxins. Mushroom poisoning and treatment of mushroom poisoning	1
8	First aid in acute poisoning, antidotes and treatment principles	1,2
9	Toxicity of pesticides, and treatment of pesticide poisoning	1
10	Drug toxicity. Treatment of acute poisoning with drugs	1
11	Toxicity of metals.	1
12	Carbon monoxide poisoning and treatment of carbon monoxide poisoning. Cyanide poisoning and treatment of cyanide poisoning.	1
13	Pharmacogenetics, toxicogenomics, the difference between pharmacogenetics and allergic reactions.	1
14	Adverse drug reactions and pharmacovigilance practices in Turkey	1

Evaluation Methods	**Weight(%)**
Midterm Exam	40

General Exam	60

Resources
1. The course note. 2. Nevin VURAL -TOKSİKOLOJİ, Ankara Üniversitesi Yayınları, Ankara,1996. (e-book)