

General information	
Academic subject	Toxicology
Degree course	<i>Pharmacy</i>
Year of study	<i>Fifth</i>
European Credit Transfer and Accumulation System (ECTS)	7
Language	<i>Italian</i>
Academic Year	<i>2021-2022</i>
Academic calendar (starting and ending date)	<i>October/January</i>
Attendance	<i>Compulsory</i>

Professor/ Lecturer Course A-E	
Name and Surname	Domenico Tricarico
E-mail	Domenico.tricarico@uniba.it
Telephone	
Department and address	<i>Department of Pharmacy</i>
Virtual headquarters	
Tutoring (time and day)	Monday to Friday, by appointment 14.30-15.30

Professor/ Lecturer Course F-N	
Name and Surname	Michela De Bellis
E-mail	michela.debellis@uniba.it
Telephone	
Department and address	<i>Department of Pharmacy</i>
Virtual headquarters	
Tutoring (time and day)	Monday to Friday by appointment

Professor/ Lecturer Course O-Z	
Name and Surname	Ornella Cappellari
E-mail	Ornella.cappellari@uniba.it
Telephone	
Department and address	<i>Department of Pharmacy</i>
Virtual headquarters	
Tutoring (time and day)	Monday to Friday by appointment

Syllabus	
Learning Objectives	<i>The learning objectives of the course are to teach students the mechanism of action of different drugs, with a specific interest on their toxic effects</i>
Course prerequisites	<i>Knowledge of pharmacology, physiology and biochemistry</i>
Contents	<p><i>-GENERAL PRINCIPLES OF TOXICOLOGY: history and toxicology objectives. Areas of toxicology. Classification of toxic agents, side effects, mechanisms of toxicity, risk assessment.</i></p> <p><i>-DISPOSITION OF TOXIC AGENTS absorption, distribution and excretion of toxic substances. Biotransformation of xenobiotics. Toxicokinetics</i></p> <p><i>-TOXICITY NOT ORGAN SPECIFIC: toxicology studies, chemical carcinogenesis, genetic toxicology, developmental toxicology.</i></p> <p><i>-ORGAN SPECIFIC TOXICITY: Blood toxic response. Immune system toxic response. Liver toxic response. Kidney toxic response. Respiratory system toxic response. Central nervous system toxic response. Toxic response of the eye. Cardiac and</i></p>



	<i>cardiovascular system toxic response. Skin toxic response. Reproductive system toxic response. Endocrine system toxic response. -TOXIC AGENTS: Toxicology of recreational drugs and doping. Pesticides, metals solvents and vapour toxic effects</i>
Books and bibliography	<i>TOXICOLOGY Casarett&Doull'; ELEMENTS OF TOXICOLOGY Casarett & Doull's (EMSI)</i>
Additional materials	

Work schedule			
Total	Lectures	Hands on (Laboratory, working groups, seminars, field trips)	Out-of-class study hours/ Self-study hours
Hours			
<i>70</i>	<i>YES</i>	<i>NO</i>	<i>NO</i>
ECTS			
<i>7</i>			
Teaching strategy			
	<i>During the lectures the fundamental concepts of toxicology will be addressed, together with toxicokinetics and toxicodynamics, methodology of experimental pharmacology and risk evaluation. There will be described and commented toxicological characteristic of the major xenobiotics. Teaching methods foresee live lessons with ppt slides on the topics of the program. Moreover, there will also be some research in the literature of specific toxicology case.</i>		
Expected learning outcomes			
	<i>This course has the objective to enable the students to recognize and understand the basic concepts of toxicokinetics and toxicodynamics, the methods of experimental toxicology. Moreover, this course will give the students the basis to evaluate the relationship between risk and benefits when it comes to xenobiotic exposition or in general after being exposed to a drug. This is pivotal for the student as he/she will be able to apply this knowledge when they will exercise the profession of pharmacist. Last, the course aim at increasing the students' communication ability in the scientific field.</i>		
Knowledge and understanding on:	<ul style="list-style-type: none"> ○ Ability to describe various toxicology aspects ○ Classification of different toxic agents ○ Mechanism of toxicity and mechanism of detoxification ○ Organ specific toxicity 		
Applying knowledge and understanding on:	<ul style="list-style-type: none"> ○ Knowledge of the most important toxic agents ○ Knowledge of mechanism of toxicity ○ Understanding of the damage induced by toxic agents' exposition ○ Understanding of target specificity 		
Soft skills	<ul style="list-style-type: none"> • <i>Making informed judgments and choices</i> <ul style="list-style-type: none"> ○ Ability of distinguish between different xenobiotics, mechanism of action, and specific targets ○ Ability to analyse all the process that a specific xenobiotic will undergo • <i>Communicating knowledge and understanding</i> <ul style="list-style-type: none"> ○ Appropriate use of specific scientific language for classification and identification of toxic substances and mechanism of toxicity • <i>Capacities to continue learning</i> <ul style="list-style-type: none"> ○ Ability to understand scientific publications, use as tools during lessons or suggested by the professor 		



Assessment and feedback	
Methods of assessment	<i>Oral exam on the topic discussed during the course</i>
Evaluation criteria	<ul style="list-style-type: none">• <i>Knowledge and understanding</i><ul style="list-style-type: none">○ Ability to explain and classify mechanisms of toxicity /cytotoxicity and what a xenobiotic does when enters the body○ Ability to categorize the different mechanism of detoxification○ Ability to explain specific toxicity of xenobiotics studied in the class• <i>Applying knowledge and understanding</i><ul style="list-style-type: none">○ Organ specific toxicity○ Classification of different xenobiotics based on their mechanism of action• <i>Autonomy of judgment</i><ul style="list-style-type: none">○ Ability to categorise different classes of xenobiotics○ Ability of classify organ specific toxicity• <i>Communicating knowledge and understanding</i><ul style="list-style-type: none">○ Appropriate terminology• <i>Capacities to continue learning</i><ul style="list-style-type: none">○ Ability to demonstrate the comprehension of the topic studied in the class
Criteria for assessment and attribution of the final mark	<i>The assessment for this course is represented by an oral exam. Through questions concerning the first and second part of the course, it will be assessed whether the student has reached the comprehension and knowledge of the topics that have been explained during the course. Moreover, the student will be evaluated for its ability of connecting different area of toxicology. The minimum knowledge to pass the exam include the knowledge of the specific toxicity mechanism, their evaluation, physiological reaction at the basis of toxic response, possibility of intervention, and induced physio-pathological condition</i>
Additional information	