

Course Title	Toxicology and Forensics				
Course Code	BMS327				
Course Type	Elective				
Level	Bachelor (1st Cycle)				
Year / Semester	3 <sup>rd</sup> Year / 6 <sup>th</sup> Semester				
Teacher's Name	TBA				
ECTS	5	Lectures / week	3 Hours	Laboratories / week	None
Course Purpose and Objectives	The overall objective of the course is to provide an introductory overview of the field of toxicology covering the general toxicological principles as well as a synopsis of toxic substances.				
Learning Outcomes	<p>Upon successful completion of the course, students will be able to:</p> <ul style="list-style-type: none"> <li>• recall basic toxicological principles</li> <li>• describe how different chemicals are absorbed, distributed, metabolized, and eliminated from the body (toxicokinetics)</li> <li>• recognize the importance of different organs for detoxification of chemicals, target organs for toxicity with emphasis on kidney and liver</li> <li>• explain the mechanisms for chemically induced neurotoxicity, endocrine toxicity etc,</li> <li>• describe the clinical toxicology of drug overdose from drug abuse/misuse or accidental exposure and evaluate in terms of patient safety.</li> <li>• discuss when different chemicals are most toxic, and mechanisms behind the effects. Be able to evaluate when and how different chemicals can interact during development to induce effects</li> <li>• apply different toxicological frameworks within the professional disciplines and have awareness about different risk assessment criteria</li> <li>• apply risk/benefit judgments to case reports on the safety of new drugs.</li> <li>• describe procedures used in the pharmaceutical industry and health community for the evaluation of the safety of new drugs and medicines</li> <li>• describe the application of forensics in toxicology (forensic toxicology)</li> </ul>				
Prerequisites	CHE104, BMS123, BMS212	Co-requisites	None		

Course Content	<p>Course content includes:</p> <ul style="list-style-type: none"> <li>• basic description of how substances are absorbed by, distributed and eliminated from the body, awareness about toxicokinetic models and the processes of biotransformation.</li> <li>• toxicity in specific target organs, effects and mechanisms. Basic toxicological knowledge of the effect of chemicals on central organs that are of significance for the uptakes/elimination and detoxification/toxification. Basic knowledge about how various systems of the body, the nervous system and the endocrine system is influenced by chemicals.</li> <li>• behaviour toxicology including basic behaviour toxicological knowledge, and how behavioural techniques can reveal chemicals that give functional disturbances</li> <li>• development toxicology including basic knowledge of different developmental phases; embryonic and embryonic development, development during the neonatal period. Critical developmental phases, teratogenic injuries and functional disturbances.</li> <li>• genetic toxicology, including basic knowledge about genetic injuries and general genetic testing methods and mechanisms behind chemically induced injuries as well as injuries following exposure to ionising radiation</li> </ul> <p>Toxicology in the society, with emphasis on forensic toxicology. Application of forensic toxicology, and the methods employed in this field.</p>										
Teaching Methodology	Face- to- face										
Bibliography	<p>Casarett, Louis J.; Klaassen, Curtis D.; Watkins, John B. Casarett &amp; Doull's essentials of toxicology</p> <p>2nd ed.: New York: McGraw-Hill Medical, c2010</p> <p>Principles of Forensic toxicology 4<sup>th</sup> Edition, Barry Levine, 2013</p>										
Assessment	<table border="1"> <tr> <td>Mid – Term Examination</td> <td>30%</td> </tr> <tr> <td>Final Examination</td> <td>40%</td> </tr> <tr> <td>Assignments</td> <td>20%</td> </tr> <tr> <td>Class Participation</td> <td>10%</td> </tr> <tr> <td></td> <td>100%</td> </tr> </table>	Mid – Term Examination	30%	Final Examination	40%	Assignments	20%	Class Participation	10%		100%
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Language	English										