UNIVERSITY of BRADFORD

Module Descriptor

Module Details	
Module Title	Toxicology and Safety Pharmacology
Module Code	INC7021-C
Academic Year	2024/5
Credits	30
School	School of Pharmacy and Medical Sciences
FHEQ Level	FHEQ Level 7

Contact Hours	
Type	Hours
Lectures	24
Tutorials	6
Directed Study	270

Availability	
Occurrence	Location / Period
BDA	University of Bradford / Semester 1
BDA	University of Bradford / Semester 3

Module Aims

To provide students with the opportunity to develop:
- Knowledge of the subject of toxicology and safety pharmacology
- A systematic and critical understanding of this subject area
- Understanding of the role of toxicology safety pharmacology in the context of drug development
- The ability to effectively communicate scientific concepts
- Relevant laboratory skills

Outline Syllabus

There are two major themes within this module. The first is designed to inform students of current practise in Toxicology and Safety Pharmacology and will focus on the regulatory and experimental areas of the field, including investigative toxicology, genotoxicity, acute and repeat dose toxicology, carcinogenicity and core safety pharmacology studies. Principles of risk assessment, quality systems and the importance of pharmacokinetics and pharmacodynamics will also be covered.

The second theme of this module will concentrate on the drug development process, with particular attention on the screening methods used, discovery toxicology and predictive toxicology screening. This will involve description of in silico, in vitro and other short term toxicity screening methods. In addition the need for in vivo screening tests will be discussed. Specific examples will be used to describe the process.

Learning Outcomes

Outcome Number	Description
01	Demonstrate a systematic understanding of toxicology and safety pharmacology subject areas.
02	Describe current approaches to drug safety screening.
03	Critically evaluate current scientific literature.
04	Carry out and evaluate in vitro toxicology laboratory experiments.
05	Systematically analyse, evaluate and report data gathered in laboratory experiments.
06	Demonstrate understanding of the relevant regulatory framework and international guidelines.
07	Develop integrated risk assessment and safety testing strategies.
08	Demonstrate the skills to present a discussion of a research paper or research theme.
09	Demonstrate generic literature skills for life-long learning .

Learning, Teaching and Assessment Strategy

A combination of lectures, invited seminar speakers, student-led seminars and laboratory report writing, plus student directed learning. During directed study time you will make use of suggested resources for further reading, practice presentation skills and become familiar with key experimental calculations. In directed study you are responsible for monitoring and directing your own learning.

Students will develop their ability to work both individually and in small groups during laboratory work. They will extend their literature searching , presentation and report writing skills in preparing a 'journal club' presentation and preclinical drug safety report. In the journal club exercise, students will individually present a review of a selected research paper. The review will include context, key findings, critical analysis and conclusions. The laboratory report writing will include preparation of a detailed report covering data analysis and interpretation, calculations and a proposal for safety testing of a new drug. The report will include reference to the literature, guidelines and regulations.

Mode of Assessment			
Type	Method	Description	Weighting
Summative	Presentation	Journal club presentation 15 minutes presentation plus 5 minutes Q&A	30%
Summative	Coursework - Written	Lab report, calculations and drug safety profiling	70%
Formative	Presentation	Draft journal club presentation for feedback	N/A
Formative	Coursework - Written	Lab report, calculations and drug safety profiling	N/A

Reading List
To access the reading list for this module, please visit https://bradford.rl.talis.com/index.html

Please note:
This module descriptor has been published in advance of the academic year to which it applies. Every effort has been made to ensure that the information is accurate at the time of publication, but minor changes may occur given the interval between publishing and commencement of teaching. Upon commencement of the module, students will receive a handbook with further detail about the module and any changes will be discussed and/or communicated at this point.

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