



## Module Definition Form (MDF)

<b>Module code: MOD006291</b>	<b>Version: 3 Date Amended: 15/May/2024</b>
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<b>1. Module Title</b>
Principles of Pharmacology

<b>2a. Module Leader</b>
Ibrahim Tolaymat

<b>2b. School</b>
School of Allied Health and Social Care

<b>2c. Faculty</b>
Faculty of Health, Medicine and Social Care

<b>3a. Level</b>
5

<b>3b. Module Type</b>
Standard (fine graded)

<b>4a. Credits</b>
15

<b>4b. Study Hours</b>
150

<b>5. Restrictions</b>			
Type	Module Code	Module Name	Condition
Pre-requisites:	None		
Co-requisites:	None		
Exclusions:	None		
<b>Courses to which this module is restricted:</b>			

## LEARNING, TEACHING AND ASSESSMENT INFORMATION

### 6a. Module Description

Explore the principals of pharmacology, where we unravel the principles that govern the effects of drugs on the human body. We'll guide you through the intricacies of pharmacodynamics, exploring how drugs act on specific targets, and pharmacokinetics, detailing the absorption, disposition, metabolism, and elimination of drugs over time. In addition to these fundamental concepts, we'll delve into the mechanism of chemical neurotransmission in the central nervous system and the autonomic nervous system to provide you a detailed understanding of the function and neurotransmission in the sympathetic and parasympathetic nervous system. You'll also gain insight into how drugs act on both systems, their mechanism of action and their applications as well as the action of neurotransmitters through the development of the concept of drug-receptor interactions. We'll explore how drugs are producing their effects and the different mechanism of actions they show when interacting with their receptors, how to distinguish between agonists and antagonists and how to create dose-response curves and interpret them. We'll illustrate the application of these concepts by examples of the pharmacology of drugs used to treat cardiovascular and behavioural disorders.

To ensure a dynamic and flexible learning experience, we'll deliver this module through a combination of face-to-face sessions and online study using Canvas, internet resources, and interactive online discussions.

### 6b. Outline Content

- Definition of what is meant by a drug. The four major drug targets – receptors, enzymes, cell membrane transporters or ion channels.
- Definition of a receptor and receptor sub-type. How a receptor evokes intracellular responses through signal transduction pathways. Molecular structure of receptors.
- Neurochemical transmission and receptor-response relationships. Ligand binding studies and analysis and plotting dose –response curves.
- Pharmacokinetics - the study of the changes of a drug in different body compartments with time. Five major areas are important in determining the pharmacokinetics of a drug– route of administration, absorption, distribution, metabolism and elimination (ADME).
- Factors determine the physiological actions of drugs – anatomical location of receptors in the nervous system determines their physiological actions, mode of administration and pharmacokinetics.

### 6c. Key Texts/Literature

The reading list to support this module is available at: <https://readinglists.aru.ac.uk/>

### 6d. Specialist Learning Resources

Laboratory; Canvas

7. Learning Outcomes (threshold standards)		
No.	Type	On successful completion of this module the student will be expected to be able to:
1	Knowledge and Understanding	Discuss the basic mechanisms by which drugs can induce effects on the human body
2	Knowledge and Understanding	Evaluate factors affecting drug absorbance, distribution, metabolism and excretion
3	Intellectual, practical, affective and transferrable skills	Identify and explain the mechanism of drug-drug and drug-food interactions
4	Intellectual, practical, affective and transferrable skills	Analyse experimental data within the context of pharmacology

8a. Module Occurrence to which this MDF Refers				
Year	Occurrence	Period	Location	Mode of Delivery
2025/6	ZZF	Template For Face To Face Learning Delivery		Face to Face

8b. Learning Activities for the above Module Occurrence			
Learning Activities	Hours	Learning Outcomes	Details of Duration, frequency and other comments
Lectures	20	1-4	2 h (10 weeks)
Other teacher managed learning	12	3-4	3 h x 2 Laboratory sessions 2 h x 3 Workshops
Student managed learning	118	1-4	Self-directed study
TOTAL:	150		

9. Assessment for the above Module Occurrence					
Assessment No.	Assessment Method	Learning Outcomes	Weighting (%)	Fine Grade or Pass/Fail	Qualifying Mark (%)
010	Examination Chelmsford	1-4	100 (%)	Fine Grade	30 (%)
<b>2.5 h examination equivalent to 2500 words</b>					

**In order to pass this module, students are required to achieve an overall mark of 40% (for modules at levels 3, 4, 5 and 6) or 50% (for modules at level 7\*).**

**In addition, students are required to:**

- (a) achieve the qualifying mark for each element of fine graded assessment as specified above**
- (b) pass any pass/fail elements**

**[\* the pass mark of 50% applies for all module occurrences from the academic year 2024/25 – see Section 3a of this MDF to check the level of the module and Section 8a of this MDF to check the academic year]**