Module Specification

Pharmacology

Version: 2025-26, v3.0, Approved

Contents

Part 1: Information

Module title: Pharmacology

Module code: USSJXP-15-2

Level: Level 5

For implementation from: 2025-26

UWE credit rating: 15

ECTS credit rating: 7.5

College: College of Health, Science & Society

School: CHSS School of Applied Sciences

Partner institutions: None

Field: Applied Sciences

Module type: Module

Pre-requisites: Biomedical Skills 2025-26

Excluded combinations: None

Co-requisites: None

Continuing professional development: No

Professional, statutory or regulatory body requirements: None

Part 2: Description

Overview: The module will introduce the basic principles of drug action, the biological basis of some important disease states affecting different physiological systems, therapeutic approaches to treating these diseases, and the cellular/molecular mode of action of drugs used.

Pre-requisites: Students must have passed USSKA5-30-1 Biomedical Skills before starting this module.

Features: Not applicable

Educational aims: This module aims to introduce students to the fundamental principles of pharmacology, including the mechanisms of drug action, key drug targets, and the pharmacokinetic and pharmacodynamic processes that influence drug effects. Students will explore the biological basis of disease states affecting different physiological systems and the therapeutic strategies used to manage them, with a focus on commonly prescribed and abused drugs.

Outline syllabus: The indicative syllabus of the module is as follows:

Key drug targets including major receptor subtypes, ion channels, transporters, and structure-function relationships.

Pharmacokinetics. Introduction to drug absorption, diffusion, biotransformation and excretion with particular reference to lipid:water, solubility, concentration gradients, routes of administration and explanation of key terms including tmax, Cmax, AUC and Vd.

Pharmacodynamics: receptor occupancy theory, dose response curves, agonists and antagonists, efficacy, potency and affinity and therapeutic index, Schild plots and pA2 values.

Selective Toxicity. Introduction to the concept of selective toxicity and the mechanisms by which drugs achieve selectively toxic effects through exploitation of comparative distribution, comparative biochemistry and comparative cytology. Historical perspectives will be considered along with the problem of resistance.

Cytotoxic Agents and Antimicrobials. Introduction to and description of typical cytotoxic drugs and antimicrobials. These drugs will be considered with respect to functionality, mode of action, targets and the limitations of such therapies.

Detailed consideration of the mechanisms of action of anticancer agents.

Pharmacology of the most commonly prescribed and abused drugs and their related body systems.

Part 3: Teaching and learning methods

Teaching and learning methods: Teaching will be in the form of interactive lectures and a practical class.
Lectures will be interspersed with questions to encourage active learning.
Practical videos, power point slides, lecture recordings and quizzes are employed to support self- directed learning.

Module Learning outcomes: On successful completion of this module students will achieve the following learning outcomes.

MO1 Demonstrate understanding of the fundamental principles of pharmacology, including drug targets, pharmacokinetics, pharmacodynamics, and the mechanisms of drug action and their effects on the body.

MO2 To evaluate, apply and communicate knowledge of pharmacological concepts to analyse the development, use, and limitations of therapeutic agents, including cytotoxic drugs, antimicrobials, and commonly prescribed or abused substances.

Hours to be allocated: 150

Contact hours:

Independent study/self-guided study = 114 hours

Face-to-face learning = 36 hours

Reading list: The reading list for this module can be accessed at readinglists.uwe.ac.uk via the following link https://uwe.rl.talis.com/modules/ussjxp-15-2.html

Part 4: Assessment

Assessment strategy: Assessment: Poster (1500 words)
A poster, allowing students to explore a specific pharmacological topic in depth. The poster will evaluate their understanding of pharmacological principles, critical analysis of data, and ability to communicate findings effectively. Students will present their work and respond to questions, ensuring engagement and authenticity
Students will have the opportunity to receive formative feedback on their posters, and dedicated drop-in sessions will be arranged to support them in the preparation process.

Assessment tasks:

Poster (First Sit)
Description: Defensible poster assessment (1500 words).
Weighting: 100 %
Final assessment: Yes
Group work: No
Learning outcomes tested: MO1, MO2

Poster (Resit)
Description: Defensible poster assessment (1500 words).
Weighting: 100 %
Final assessment: Yes
Group work: No
Learning outcomes tested: MO1, MO2

Part 5: Contributes towards

This module contributes towards the following programmes of study:

Biomedical Science [Frenchay] BSc (Hons) 2023-24

Biomedical Science {Foundation} [Frenchay] BSc (Hons) 2023-24

Biomedical Science [Frenchay] MSci 2023-24

Biomedical Science {Foundation} [Frenchay] MSci 2023-24

Biomedical Science [Frenchay] - WITHDRAWN MSci 2024-25

Biomedical Science [Frenchay] BSc (Hons) 2024-25

Biomedical Science [Frenchay] BSc (Hons) 2024-25

Biomedical Science [Frenchay] BSc (Hons) 2022-23

Biomedical Science [Frenchay] MSci 2022-23