Module Specification

Pharmacology and Toxicology

Version: 2024-25, v4.0, 22 May 2024

Contents

Part 1: Information

Module title: Pharmacology and Toxicology

Module code: USSKBX-15-3

Level: Level 6

For implementation from: 2024-25

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: None

Excluded combinations: None

Co-requisites: None

Continuing professional development: No

Professional, statutory or regulatory body requirements: None

Part 2: Description

Overview: This module will explore the pharmacology of selected therapeutic drugs with particular emphasis on side effects and drug development. The module will also investigate how heavy metals can cause toxic effects in humans and can hijack natural transport processes.

Features: Not applicable

Educational aims: The module aims to deliver theoretical information and develop experimental skills in pharmacology and toxicology.

Outline syllabus: To illustrate important current topics in this field, and to highlight aspects of both pharmacology and toxicology, a selection of the following will be discussed in detail as case studies:

The pharmacology and toxicology of antipsychotic drugs. The signs and symptoms of schizophrenia, classical and non-classical drug treatments, their therapeutic action and principal side effects.

The toxicology of mercury and its compounds, in particular the organomercurials. Sources, routes of ingestion and transport, with an emphasis on molecular homology and neurotoxic effects.

A comparison of the human toxicology of lead and cadmium. The origins and symptoms of poisoning and methods of detoxification.

Anti-cancer agents affecting tumour DNA. The intercalators, alkylators and chain cutters, with particular emphasis on the action and development of the bleomycins and the family of platinum drugs.

The dopamine theory of depression, and the development and pharmacology of antidepressant drugs. The action and side effects pf classical tricyclic drugs, and their development into SSRIs and NSRIs.

Part 3: Teaching and learning methods

Teaching and learning methods: The material will be delivered using a combination of lectures, practical classes and workshops. Lectures will be augmented by directed reading in the recommended text and other appropriate scientific literature, including selected journals, for example, Toxicology and Applied Pharmacology, Metallomics, Toxicology Research. The module also uses other

relevant information portals, for example, http://www.chemspider.com. The topics selected for delivery by workshops and will be designed to enhance problem solving skills and to provide experience of relevant laboratory techniques.

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

MO1 Critically evaluate the benefits and side effects of different pharmacological approaches to the treatment of psychosis, depression and cancers affecting DNA.

MO2 Compare and contrast the human toxicology of a range of toxic metals and their compounds, including their roles in molecular homology.

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/usskbx-15-3.html

Part 4: Assessment

Assessment strategy: Assessment: Examination (24 hours online; 2000 words)
The assessment task for this module is a 24 hour online examination.

This assessment will assess the students' knowledge acquired during lectures, workshops and practical classes, and from their own directed, independent learning.

The assessment will require both written content and interpretation of data or figures together with evidence of wide literature research on a relevant scientific topic.

Students are made aware of the examination topics ahead of the assessment, which

is the culmination of a series of directed and independent reading exercises. Students are expected to collate their reference list as the module progresses, under academic guidance.

Both of the above aspects reduce the likelihood of assessment offences within this assessment.

Assessment tasks:

Examination (Online) (First Sit)
Description: Online examination (24 hours; 2000 words)
Weighting: 100 %
Final assessment: Yes
Group work: No
Learning outcomes tested: MO1, MO2

Examination (Online) (Resit)
Description: Online examination (24 hours; 2000 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:

Forensic Science {Foundation} [Sep][SW][Frenchay][5yrs] BSc (Hons) 2020-21

Biomedical Science [Sep][PT][Frenchay][6yrs] BSc (Hons) 2019-20

Biomedical Science [Sep][PT][Frenchay][8yrs] MSci 2019-20

Biomedical Science {Foundation} [Sep][SW][Frenchay][5yrs] BSc (Hons) 2020-21

Biomedical Science [Sep][PT][Frenchay][6yrs] BSc (Hons) 2020-21

Biomedical Science {Foundation} [Sep][FT][Frenchay][4yrs] BSc (Hons) 2021-22

Biomedical Science [Sep][SW][Frenchay][4yrs] BSc (Hons) 2021-22

Biomedical Science [Sep][SW][Frenchay][5yrs] MSci 2021-22

Biomedical Science [Sep][PT][Frenchay][8yrs] MSci 2020-21

Biomedical Science {Foundation} [Sep][SW][Frenchay][6yrs] MSci 2020-21

Biomedical Science {Foundation} [Sep][FT][Frenchay][5yrs] MSci 2021-22

Forensic Science [Sep][SW][Frenchay][4yrs] BSc (Hons) 2021-22

Forensic Science {Foundation} [Sep][SW][Frenchay][6yrs] MSci 2020-21

Forensic Science [Sep][SW][Frenchay][5yrs] MSci 2021-22

Forensic Science {Foundation} [Sep][FT][Frenchay][5yrs] MSci 2021-22

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

Forensic Science [Frenchay] MSci 2022-23

Forensic Science {Foundation} [Sep][FT][Frenchay][4yrs] BSc (Hons) 2021-22

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

Biomedical Science [Frenchay] MSci 2022-23