



## **Module Specification**

### **Neuroscience and Neuropharmacology**

Version: 2023-24, v3.0, 30 May 2023

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## Part 1: Information

**Module title:** Neuroscience and Neuropharmacology

**Module code:** USSKCA-15-3

**Level:** Level 6

**For implementation from:** 2023-24

**UWE credit rating:** 15

**ECTS credit rating:** 7.5

**Faculty:** Faculty of Health & Applied Sciences

**Department:** HAS Dept 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:** Not applicable

**Features:** Not applicable

**Educational aims:** See Learning Outcomes.

**Outline syllabus:** The topics reflected in the module content may vary year on year depending on emerging or topical areas of interest and staff expertise. An indicative content is indicated below:

## Physiology of the central nervous system

Neurotransmitters & neurotransmission: neurotransmitter criteria, classical neurotransmitters, novel/putative neurotransmitters, process of neurotransmission, use of neurotoxins and other neurochemicals as pharmacological tools for research.

## Synaptic plasticity and the cellular basis of memory formation

Endogenous neuropharmacology: glutamate as a neurotransmitter and as an excitatory neurotoxin, endogenous pain pathways, , selected endogenous neuropharmacology of relevance to clinical/illegal/social drug use.

## Clinical application of neurologically active compounds

Non-clinical application of neuroactive compounds eg psychoactive drugs for pleasurable gain.

Blood brain barrier and strategies to enhance drug delivery to the brain/Therapeutic advances in neuropharmacology

## Part 3: Teaching and learning methods

**Teaching and learning methods:** A variety of learning approaches will be used to allow students to develop an in-depth understanding and critical appreciation of aspects of neuropharmacology from the materials provided and the timetabled interactive sessions. Taught sessions at UWE will utilise TEL where possible, to support a pedagogy of Inductive Learning where the students will engage in facilitated activities such as interactive lectures, tutorials, seminars, workshops, debates, case studies, problem based learning etc.

Scheduled learning:

interactive lectures, seminars and workshops

Scheduled contact time is structured around a series of interactive lectures that introduce the key concepts, identify current levels of understanding and pin-point areas of scientific uncertainty. Theory is under-pinned by focussed analysis of selected areas informed by current research and/or emerging areas of interest within research/industry/or popular media arenas.

Interactive lectures will be supported by workshop and seminar activities that will allow more in-depth analysis and discussion around key concepts. Students will be expected to engage in preparatory reading and research for these sessions, including undertaking guided reading, textual and web-based research.

Revision will be embedded in the tutorial and workshop sessions, which will offer opportunities to practice past exam questions.

Independent learning includes hours engaged with essential reading, further research, assignment preparation and completion and revision for the final exam.

The module will be delivered through approximately 36 contact hours. These contact hours will include lectures, tutorial and seminar activities, plus in class formative assessment activities.

This contact time will also be underpinned by provision of online material to be delivered in an asynchronous manner through the University's E-Learning Environment Blackboard, including for example additional recorded media, case studies/additional reading to work through and online quizzes.

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

**MO1** Evidence an in-depth understanding of selected neurotransmitters and neurotransmission.

**MO2** Discuss in detail aspects of endogenous neuropharmacology.

**MO3** Critically evaluate the manipulation of aspects of our endogenous neuropharmacology for the advancement of knowledge, for clinical benefit, or for pleasurable/competitive gain.

**MO4** Discuss the physiology of the central nervous system and link structure to function

**MO5** Discuss the pathophysiology of common conditions of the central nervous system

**Hours to be allocated:** 150

**Contact hours:**

Independent study/self-guided study = 114 hours

Face-to-face learning = 36 hours

Total = 150

**Reading list:** The reading list for this module can be accessed at [readinglists.uwe.ac.uk](https://uwe.rl.talis.com/modules/usskca-15-3.html) via the following link <https://uwe.rl.talis.com/modules/usskca-15-3.html>

## Part 4: Assessment

**Assessment strategy:** The Assessment for this module is designed to test the breadth and depth of students' knowledge, as well as their ability to analyse, synthesise and summarise information critically, including published research data.

Assessment task A is an online exam (with a 24hr window for submission). Students will be required to choose one single seen question from a list of topics, to select two recent research papers of relevance to the field and to then plan an essay which critically evaluates the contribution of the two studies to the chosen field, setting the evaluation within the context of the material covered during the module and addressing the module learning outcomes. This approach gives students great autonomy and the ability to research in depth an area of particular interest. Students are

permitted to bring the two papers into the exam with margin annotations and these are submitted with the essay generated under exam conditions.

The written assignment requires student to search for and analyse relevant research literature in order to provide scientific evidence in support of the set question. The assessment requires students to utilise a range of research-related skills including: literature searching using keywords and refinement of search strings; critical review of published research; data analysis; application of evidence to set question; and referencing skills.

Opportunities for formative assessment and feedback are built into the scheduled learning during tutorial and workshop activities. This may take the form of structured activities, discussion of current research, review of past exam papers and real-time practice at question answering and follow-up feedback. Specifically, students are encouraged to submit 10% of their written assignment in advance of their deadline so that feedback can be provided as a learning opportunity such that their enhanced understanding of the task may then be applied to the assignment as a whole.

**Assessment tasks:****Examination (Online) (First Sit)**

Description: Online examination (24 hours)

Weighting: 50 %

Final assessment: Yes

Group work: No

Learning outcomes tested: MO2, MO3, MO4

**Written Assignment (First Sit)**

Description: Written report (1500 words)

Weighting: 50 %

Final assessment: No

Group work: No

Learning outcomes tested: MO1, MO4, MO5

**Examination (Online) (Resit)**

Description: Online examination (24 hours)

Weighting: 50 %

Final assessment: Yes

Group work: No

Learning outcomes tested: MO2, MO3, MO4

**Written Assignment (Resit)**

Description: Written report (1500 words)

Weighting: 50 %

Final assessment: No

Group work: No

Learning outcomes tested: MO1, MO4, MO5

**Part 5: Contributes towards**

This module contributes towards the following programmes of study:

Biomedical Science [Sep][FT][Frenchay][3yrs] BSc (Hons) 2021-22

Biomedical Science [Sep][FT][Frenchay][4yrs] MSci 2021-22

Applied Biomedical Science [Sep][FT][Frenchay][3yrs] BSc (Hons) 2021-22

Forensic Science [Sep][FT][Frenchay][3yrs] BSc (Hons) 2021-22

Forensic Science [Sep][FT][Frenchay][4yrs] MSci 2021-22

Biological Sciences [Sep][FT][Frenchay][4yrs] MSci 2021-22

Biological Sciences [Sep][FT][Frenchay][3yrs] BSc (Hons) 2021-22

Forensic Science [Sep][SW][Frenchay][4yrs] BSc (Hons) 2020-21

Biological Sciences [Sep][SW][Frenchay][4yrs] BSc (Hons) 2020-21

Biological Sciences [Sep][SW][Frenchay][5yrs] MSci 2020-21

Biomedical Science [Sep][SW][Frenchay][5yrs] MSci 2020-21

Biomedical Science {Foundation} [Sep][FT][Frenchay][4yrs] BSc (Hons) 2020-21

Biomedical Science [Sep][SW][Frenchay][4yrs] BSc (Hons) 2020-21

Biomedical Science {Foundation} [Sep][FT][Frenchay][5yrs] MSci 2020-21

Forensic Science [Sep][SW][Frenchay][5yrs] MSci 2020-21

Forensic Science {Foundation} [Sep][FT][Frenchay][5yrs] MSci 2020-21

Biological Sciences {Foundation} [Sep][FT][Frenchay][5yrs] MSci 2020-21

Forensic Science {Foundation} [Sep][FT][Frenchay][4yrs] BSc (Hons) 2020-21

Biological Sciences {Foundation} [Sep][FT][Frenchay][4yrs] BSc (Hons) 2020-21

Forensic Science {Foundation} [Sep][SW][Frenchay][5yrs] BSc (Hons) 2019-20

Biological Sciences {Foundation} [Sep][SW][Frenchay][5yrs] BSc (Hons) 2019-20

Biological Sciences {Foundation} [Sep][SW][Frenchay][6yrs] MSci 2019-20

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) 2019-20

Biomedical Science {Foundation} [Sep][SW][Frenchay][6yrs] MSci 2019-20

Forensic Science {Foundation} [Sep][SW][Frenchay][6yrs] MSci 2019-20