

## STUDENT AND ACADEMIC SERVICES

### MODULE SPECIFICATION

Part 1: Basic Data					
Module Title	Neuropharmacology				
Module Code	USSKCA-15-3	Level	3	Version	2
Owning Faculty	Health and Applied Sciences	Field	Department of Applied Sciences		
Contributes towards	BSc (Hons) Biomedical Science BSc (Hons) Forensic Science BSc (Hons) Biological Science				
UWE Credit Rating	15	ECTS Credit Rating	7.5	Module Type	Standard
Pre-requisites	None		Co- requisites	None	
Excluded Combinations	None		Module Entry requirements	None	

Part 2: Learning and Teaching	
Learning Outcomes	<p>On successful completion of this module students will be able to:</p> <p>(The primary assessment method is shown in brackets, however, each learning outcome has the potential to be addressed by both component A or B)</p> <ul style="list-style-type: none"> <li>• Evidence an in-depth understanding of selected neurotransmitters and neurotransmission (Component B)</li> <li>• Discuss in detail aspects of endogenous neuropharmacology (Component A)</li> <li>• Critically evaluate the manipulation of aspects of our endogenous neuropharmacology for the advancement of knowledge, for clinical benefit, or for pleasurable/competitive gain. (Component A)</li> </ul>
Syllabus Outline	<p>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:</p> <ul style="list-style-type: none"> <li>• Neurotransmitters &amp; neurotransmission: neurotransmitter criteria, classical neurotransmitters, novel/putative neurotransmitters, process of neurotransmission, use of neurotoxins and other neurochemicals as pharmacological tools for research.</li> <li>• Endogenous neuropharmacology: glutamate as a neurotransmitter and as an excitatory neurotoxin, endogenous pain pathways, sympathetic nervous system, selected endogenous neuropharmacology of relevance to clinical/illegal/social drug use.</li> <li>• Clinical application of neurologically active compounds e.g. NMDA receptor manipulation, analgesics, antidepressants.</li> <li>• Non-clinical application of neuroactive compounds e.g. sympathomimetics and beta-blockers for sporting advantage; eg illegal highs and alcohol for</li> </ul>

	<p>pleasurable gain.</p> <ul style="list-style-type: none"> <li>Strategies to enhance drug delivery to the brain, including moderation of the blood-brain barrier and optimising endogenous transport mechanisms..</li> </ul>
Contact Hours	<p>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.</p> <p>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.</p>
Teaching and Learning Methods	<p>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.</p> <p><b>Scheduled learning:</b> interactive lectures, seminars and workshops</p> <ul style="list-style-type: none"> <li>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.</li> <li>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.</li> <li>Revision will be embedded in the tutorial and workshop sessions, which will offer opportunities to practice past exam questions.</li> </ul> <p><b>Independent learning</b> includes hours engaged with essential reading, further research, assignment preparation and completion and revision for the final exam.</p>
Key Information Sets Information	<p>Key Information Sets (KIS) are produced at programme level for all programmes that this module contributes to, which is a requirement set by HESA/HEFCE. KIS are comparable sets of standardised information about undergraduate courses allowing prospective students to compare and contrast between programmes they are interested in applying for.</p>

Key Information Set - Module data				
Number of credits for this module			15	
Hours to be allocated	Scheduled learning and teaching study hours	Independent study hours	Placement study hours	Allocated Hours
150	36	114	0	150

The table below indicates as a percentage the total assessment of the module which constitutes a -

**Written Exam:** Unseen written exam, open book written exam, In-class test

**Coursework:** Written assignment or essay, report, dissertation, portfolio, project

**Practical Exam:** Oral Assessment and/or presentation, practical skills assessment, practical exam

Please note that this is the total of various types of assessment and will not necessarily reflect the component and module weightings in the Assessment section of this module description:

Total assessment of the module:		
Written exam assessment percentage		60%
Coursework assessment percentage		40%
Practical exam assessment percentage		0%
		100%

## Reading Strategy

### Core readings

There is no single set text for this module. Instead students will be guided towards essential reading which may take the form of book chapters (digitalised or e-books wherever possible) or open access reviews and research articles.

### Further readings

Students are expected to identify all other reading relevant to their chosen research topic for themselves. They will be encouraged to read widely using the library search, a variety of bibliographic and full text databases, and Internet resources. Many resources can be accessed remotely.

### Access and skills

The development of literature searching skills is supported by a Library seminar provided within the first semester. These level three skills will build upon skills gained by the student whilst studying at levels one and two. Additional support is available through the Library Services web pages, including interactive tutorials on finding books and journals, evaluating information and referencing. Sign-up workshops are also offered by the Library.

	<p>Indicative reading list</p> <p>The following list is offered to provide validation panels/accrediting bodies with an indication of the type and level of information students may be expected to consult. As such, its currency may wane during the life span of the module specification. However, as indicated above, <i>current</i> advice on readings will be available via the module guide.</p>
Indicative Reading List	<p>Indicative reading.</p> <p>Selected chapters from the most recent edition of:</p> <ul style="list-style-type: none"> <li>• Rang,H.P. Dale,M.M., Ritter,J.M., Flower,R. &amp; Henderson,G. <i>Rang &amp; Dale's Pharmacology</i>. Edinburgh: Elsevier Churchill Livingstone.</li> <li>• Reents,S. <i>Sport and Exercise Pharmacology</i>. Leeds: Human Kinetics</li> <li>• Cooper,J.R., Bloom, F.E., &amp; Roth,R.H. <i>Biochemical Basis of Neuropharmacology</i>. Oxford: Oxford University Press</li> <li>• Davies, R.W. &amp; Morris, B.J. <i>Molecular Biology of the Neuron</i>. Oxford: Oxford University Press.</li> <li>• Hancock, J. <i>Cell Signalling</i>. Oxford: OUP</li> </ul> <p>Students will be encouraged to access research papers and reviews from peer-reviewed journals. UWE has a wide range of electronic journals available including the following selected titles:</p> <ul style="list-style-type: none"> <li>• Journal of clinical neuroscience [electronic journal]</li> <li>• Neuron [electronic journal]</li> <li>• Neuropharmacology [electronic journal]</li> <li>• NeuroToxicology [electronic journal]</li> <li>• International journal of neuropsychopharmacology [electronic journal]</li> <li>• Neuroscience letters [electronic journal]</li> <li>• Journal of neuroimmune pharmacology [electronic journal]</li> </ul>

Part 3: Assessment	
Assessment Strategy	<p>The Assessment for this module is designed to test the breadth and depth of students' knowledge, as well as their ability to analyse, synthesize and summarise information critically, including published research data.</p> <p>The controlled component is a single seen question, which requires students to choose one 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. Although the essay is judged to require 1.5 to 2h to produce, a 3h 'space' is scheduled to provide all students the time needed to generate their essay, thereby supporting inclusivity.</p> <p>The written assignment provides the opportunity for the student to undertake a search of the available research literature in order to identify and evaluate</p>

	<p>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; application of evidence to set question; and referencing skills.</p> <p>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.</p>
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Identify final assessment component and element	Component A	
% weighting between components A and B (Standard modules only)	A: 60	B: 40
<b>First Sit</b>		
Component A (controlled conditions) Description of each element	Element weighting (as % of component)	
1. Seen examination (3 hours)	100	
2.(etc)		
Component B Description of each element	Element weighting (as % of component)	
1. Data Analysis	100	
2.(etc)		

Resit (further attendance at taught classes is not required)	
Component A (controlled conditions) Description of each element	Element weighting (as % of component)
1. Seen examination (3 hours)	100
2.(etc)	
Component B Description of each element	Element weighting (as % of component)
1. Data Analysis	100
If a student is permitted an <b>EXCEPTIONAL RETAKE</b> of the module the assessment will be that indicated by the Module Description at the time that retake commences.	

#### FOR OFFICE USE ONLY

First CAP Approval Date	28/3/2014			
Revision	31 October	Version	2	<a href="#">Link to RIA 12429</a>

ASQC Approval Date	2017			
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