University of the West of England
BRISTOL

ACADEMIC SERVICES

MODULE SPECIFICATION

Part 1: Basic Data						
Module Title	Neuropharmacology					
Module Code	USSKCA-15-3		Level	3	Version	1
Owning Faculty	Health and Applied Sciences		Field	Department of Biological, Biomedical and Analytical 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	USSKCA-15-3	
Pre-requisites	USSKB3-15-2 Drugs & Disease or USSKAV-30-2 Drugs & Toxicology or USSKC5-30-1 Chemistry for Forensic Science and Data Analysis.		Co- requisites			
Excluded Combinations			Module Entry requirements	Equivalent prerequisite learning		
Valid From	September 2014		Valid to	September 2020		

CAP Approval Date	28/03/2014

Part 2: Learning and Teaching	
Learning Outcomes	On successful completion of this module students will be able to: • Evidence an in-depth understanding of selected neurotransmitters and neurotransmission (Component B; Component A) • Discuss in detail aspects of endogenous neuropharmacology (Component A) • Critically evaluate the manipulation of aspects of our endogenous neuropharmacology for clinical benefit or for pleasurable/competitive gain (Component A) • Demonstrate an understanding of drug synthesis & formulation and barriers to therapy of relevance to neurological conditions (Component A)
Syllabus Outline	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: • Neurotransmitters & neurotransmission: neurotransmitter criteria, classical

	neurotransmitters, novel/putative neurotransmitters, process of neurotransmission, use of neurotoxins and other neurochemicals as pharmacological tools for research. • 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. • Clinical application of neurologically active compounds e.g. NMDA receptor manipulation, analgesics, antidepressants. • Non-clinical application of neuroactive compounds e.g. sympathomimetics and beta-blockers for sporting advantage, cocaine & cannabinoids for pleasurable gain. • Drug synthesis, formulation and barriers: design of drugs (e.g. analgesics/local anaesthetics), blood-brain barrier as a barrier to treatment and drug delivery strategies to overcome this.
Contact Hours	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.
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.
Key Information Sets Information	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.

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. Indicative reading list 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, *current* advice on readings will be available via the module guide.
Indicative Reading List	*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, CURRENT advice on readings will be available via other more frequently updated mechanisms.* Indicative reading. Selected chapters from the most recent edition of: • Rang,H.P. Dale,M.M., Ritter,J.M., Flower,R. & Henderson,G. *Rang & Dale's Pharmacology.* Edinburgh: Elsevier Churchill Livingstone. • Reents,S. *Sport and Exercise Pharmacology*. Leeds: Human Kinetics • Cooper,J.R., Bloom, F.E., & Roth,R.H. *Biochemical Basis of Neuropharmacology*. Oxford: Oxford University Press • Davies, R.W. & Morris, B.J. *Molecular Biology of the Neuron*. Oxford: Oxford University Press. • Hancock, J. *Cell Signalling*. Oxford: OUP 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: • Journal of clinical neuroscience [electronic journal] • Neuron [electronic journal] • Neuropharmacology [electronic journal] • NeuroToxicology [electronic journal] • International journal of neuropsychopharmacology [electronic journal] • Neuroscience letters [electronic journal] • Journal of neuroimmune pharmacology [electronic journal]

Part 3: 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, synthesize and summarise information critically, including published research data. The controlled component is a written exam of 2 hours duration. This assessment allows students to demonstrate their ability to synthesise ideas, prioritise information and produced a structured, evidence based answer reflecting their understanding and wider research. This assessment links directly to requests from employers as they require graduates proficient at

	researching and scientific writing under pressure. The examination provides students with the opportunity to demonstrate their knowledge and understanding of the key concepts and paradigms associated with the subject matter, and to use case studies and other evidence to critically support their arguments. The written assignment provides the opportunity for the student to undertake a search of the available research literature in order to identify and evaluate 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. 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. 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. All work is marked in line with the Department's Generic Assessment Criteria and conforms with university policies for the setting, collection, marking and return of student work. Assessments are described in the Module handbook that is supplied at the start of module.

Identify final assessment component and element		
% weighting between components A and B (Standard modules only)	**A:** **60**	**B**: **40**
First Sit		
Component A (controlled conditions) **Description of each element**	**Element weighting** **(as % of component)**	
1. 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. Examination (3 hours)	100
2.(etc)	
Component B	**Element weighting**

Description of each element	(as % of component)
1. Data Analysis	100
2.(etc)	
If a student is permitted an **EXCEPTIONAL RETAKE** of the module the assessment will be that indicated by the Module Description at the time that retake commences.	