




CORPORATE AND ACADEMIC SERVICES

MODULE SPECIFICATION

Part 1: Basic Data					
Module Title	Drugs and Disease				
Module Code	USSKB3-15-2	Level	2	Version	1
Owning Faculty	Health & Applied Sciences	Field	Biological, Biomedical & Analytical Sciences		
Contributes towards	BSc (Hons) Biomedical Sciences				
UWE Credit Rating	15	ECTS Credit Rating	7.5	Module Type	Standard
Pre-requisites	none		Co- requisites	none	
Excluded Combinations	USSKB4-15-2 Cell Signalling	Module Entry requirements	Not applicable		
Valid From	September 2014		Valid to	September 2020	

CAP Approval Date	28/03/2014
--------------------------	------------

Part 2: Learning and Teaching	
Learning Outcomes	<p>On successful completion of this module students will be able to:</p> <ul style="list-style-type: none"> • discuss critically pharmacokinetics (drug absorption, distribution biotransformation and excretion) and pharmacodynamic parameters, including drug administration. • Understand the drug development process including toxicity testing and adverse events • discuss critically the principles of selective toxicity and how they are exploited during the use of cytotoxic agents and antimicrobials. • explain the relationship between drug structure and function of selected cytotoxic agents and antimicrobials
Syllabus Outline	<ul style="list-style-type: none"> • Material to be covered includes: • 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, thalf, AUC and Vd. • Pharmacodynamics: receptor occupancy theory, dose response curves, agonists and antagonists, efficacy, potency & affinity and therapeutic index • Selective Toxicity. Introduction to the concept of selective toxicity and the mechanisms by which drugs achieve selectively toxic effects through

	<p>exploitation of comparative distribution, comparative biochemistry and comparative cytology. Historical perspectives will be considered along with the problem of resistance.</p> <ul style="list-style-type: none"> • 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 including methotrexate, dactinomycin, cytosine arabinoside, nitrogen mustards and tamoxifen. The structures and mechanisms of action of selected antibiotics and other antimicrobial agents. The relationship of structure to the modes of therapeutic delivery and spectra of activity. Introduction to microbial resistance mechanisms. Combined therapy - synergy and antagonism 																									
Contact Hours	<ul style="list-style-type: none"> • Students will have 2 hrs of lecture material each week for the semester, with an extra four tutorial sessions. • Lectures will cover the key material described above and tutorials will support learning by using data analysis exercise to underpin dose-response curve drawing. • Tutorials will also allow for revision session, using non-assessed quizzes to aid students in identifying gaps in understanding prior to exam revision sessions • Extra material will be made available on Blackboard to aid in further learning and will complement the teaching material delivered 																									
Teaching and Learning Methods	<p>The module will be delivered as mix of lectures and integrated tutorial sessions – with computer-learning support together with a student centred research exercise, presented as a poster to aid further learning</p> <ul style="list-style-type: none"> • Students will be expected to be independently engaged in further research indicated by the subject matter covered in the lectures and indicated by specific reading and reference lists; students will be expected to develop the content with self-directed learning. 																									
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> <table border="1"> <thead> <tr> <th colspan="5">Key Information Set - Module data</th> </tr> <tr> <td colspan="5"><i>Number of credits for this module</i></td> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> <td></td> <td style="border: 2px solid black;">15</td> </tr> <tr> <th>Hours to be allocated</th> <th>Scheduled learning and teaching study hours</th> <th>Independent study hours</th> <th>Placement study hours</th> <th>Allocated Hours</th> </tr> <tr> <td>150</td> <td>36</td> <td>114</td> <td>0</td> <td>150</td> </tr> </tbody> </table> <p>The table below indicates as a percentage the total assessment of the module which constitutes a - </p>	Key Information Set - Module data					<i>Number of credits for this module</i>									15	Hours to be allocated	Scheduled learning and teaching study hours	Independent study hours	Placement study hours	Allocated Hours	150	36	114	0	150
Key Information Set - Module data																										
<i>Number of credits for this module</i>																										
				15																						
Hours to be allocated	Scheduled learning and teaching study hours	Independent study hours	Placement study hours	Allocated Hours																						
150	36	114	0	150																						

Written Exam: Unseen written exam,
Coursework: poster
Practical Exam: none

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		50%	
Coursework assessment percentage		50%	
Practical exam assessment percentage		0%	
		100%	

Reading Strategy

All students will be encouraged to make full use of the print and electronic resources available to them through membership of the University. These include a range of electronic journals and a wide variety of resources available through web sites and information gateways. The University Library's web pages provide access to subject relevant resources and services, and to the library catalogue. Many resources can be accessed remotely. Students will be presented with opportunities within the curriculum to develop their information retrieval and evaluation skills in order to identify such resources effectively.

Any **essential reading** will be indicated clearly, along with the method for accessing it, e.g. students may be expected to purchase a set text, be given or sold a print study pack or be referred to texts that are available electronically, etc. This guidance will be available either in the module handbook, via the module information on Blackboard or through any other vehicle deemed appropriate by the module/programme leaders.

If **further reading** is expected, this will be indicated clearly. If specific texts are listed, a clear indication will be given regarding how to access them and, if appropriate, students will be given guidance on how to identify relevant sources for themselves, e.g. through use of bibliographical databases.

Indicative Reading List

Books: Selected directed reading from the following:

Rang, H.P., Dale, M.M., Ritter, J.M. and Moore, P.K. (2011) *Pharmacology*, 7th Ed., Edinburgh: Churchill Livingstone

Greenwood, D. (2007) *Antimicrobial Chemotherapy*. 5th Ed. Oxford: Oxford Journals.

Willey, J.M. Sherwood, L.M. Woolverton, C.J. (2008) *Prestcott, Harley & Klein's Microbiology*. 7th Ed. New York: McGraw Hill

Neal, M.J. (2012) *Medical Pharmacology at a Glance*. 7th Ed. Oxford: Wiley-Blackwell Publishing

Relevant Journals in Biological and Biomedical Sciences including:

Annual Review of Pharmacology.

	Annual Review of Physiology. Trends in... series of journals Current Opinion... series of journals Frontiers in... series of journals Nature Nature Reviews PLoS Reviews from the Encyclopaedia of Life Sciences
--	---

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 and data from the 'grey' literature.</p> <p>The controlled component is a written exam. The exam will be 3 hours duration which is consistent with the Department's assessment strategy for Level 2 modules. The examination provides students with the opportunity to demonstrate their knowledge and understanding of the key concepts and paradigms associated with the subject matter, to use examples and other evidence critically to support their arguments.</p> <p>The written assignment provides the opportunity for the student to complete an in-depth analysis of selected topic from the module syllabus by critically reviewing published research.</p> <p>Opportunities for formative assessment and feedback are built into the assignment and review of past exam papers.</p> <p>All work is marked in line with the Department's Generic Assessment Criteria and conforms to the 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.</p>
---------------------	--

Identify final assessment component and element		
% weighting between components A and B (Standard modules only)	A: 50	B: 50
First Sit		
Component A (controlled conditions) Description of each element	Element weighting <i>(as % of component)</i>	
1. Examination (3 hours)	100	
Component B Description of each element		
1. Poster on a selected research area	100	

Resit (further attendance at taught classes is not required)		
Component A (controlled conditions) Description of each element	Element weighting <i>(as % of component)</i>	

1. Examination (3 hours)	100
2.(etc)	
Component B Description of each element	Element weighting (as % of component)
1. Poster on selected research area	100
2.(etc)	
<p>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.</p>	