University of the West of England
BRISTOL

CORPORATE AND ACADEMIC SERVICES

MODULE SPECIFICATION

Part 1: Basic Data						
Module Title	Applied Immunology					
Module Code	USSJ6A-30-M		Level	M	Version	3
Owning Faculty	Health and Life Sciences		Field	Applied Sciences		
Contributes towards	MSc Biomedical Science Compulsory for MSc Biomedical Science (Immunology)					
UWE Credit Rating	30	ECTS Credit Rating	15	Module Type	Standard	
Pre-requisites			Co- requisites			
Excluded Combinations			Module Entry requirements			
Valid From	Sept 2012		Valid to	September 2018		
CAP Approval Date	30th May 2012					

Part 2: Learning and Teaching	
Learning Outcomes	On successful completion of this module (components A (exam) and B (coursework)) students will be able to critically evaluate and discuss the following topics: • the role, application, modification and or generation of antibodies • the role of cytokines in the regulation of the immune system • the origin of autoimmunity in the light of current research • the role of cell-cell interactions in the immune system • developments in immunodiagnosis and immunotherapy • dysfunction of the immune system and associated disease states In component B (coursework), students will also be able to: • prepare and deliver an oral slide presentation and associated abstract related to one of the above topics; to answer questions on the topic and to practice generating questions.
Syllabus Outline	• <u>Molecular immunology</u> The structure of antibodies and genetics of antibody diversity. Production of cytokines, modes of action, types of cytokine. T helper cell subpopulations. Role of cytokines in T and B cell activation, humoral and cell mediated immunity. Intracellular receptor signaling. • <u>Cellular immunology.</u> Cell-cell interactions. Receptors involved in cell activation pathways. Antigen presentation. Mucosal immunology. Microbial immunology and vaccination. Induction of tolerance; central and peripheral. Tolerance and autoimmunity. Autoimmune disease and allergy; induction and disease mechanisms. Transplant rejection and immunosuppression

	• <u>Applied immunology</u> Application of antibodies in immunodiagnostics and current technology. Antibody engineering and use of monoclonal and other synthesized antibodies. Applications of antibodies and cytokines in the treatment of diseases. Chemotherapy.
Contact Hours/Scheduled Hours	• 43h of LECTURES, including approximately 9 tutorial sessions taught and led by staff in class • Approximately 16h of SEMINARS (depending on class size), delivered through undergraduate student presentations, aligned with specific aspects of previous lecture, to encourage expansion and discussion of recent findings. • 6h of M –LEVEL TUTORIALS building on specific aspects of the L3 taught material, with each of the staff members individually. These encourage higher order activities such as reading specific journal articles and recent review papers in advance for group discussion. • 7h of M-LEVEL CRITQUE(depending on class size) where each student prepares a critique of 3-4 key papers on a selected relevant topic and delivers an oral presentation to the class, with time for questions and answers. • At least 5h of additional subject specific teaching given by experts in a range of applied immunology topics, delivered in a 'CONFERENCE' style
Teaching and Learning Methods	The module will be delivered through scheduled learning using keynote lectures supported by tutorials and seminars. Emphasis will be placed on student-centered learning using indicative lists, research papers and journals. Students will also undertake some self-directed learning through a critical review of an agreed topic area and presentation of their findings in a seminar presentation. Students on the module will also be required to attend a conference week at an appropriate time in the year (dependent on changes to the academic calendar). During this week a range of visiting lecturers will be brought in to give keynote lectures (for example based on their clinical practice) or research focused lectures that map to the syllabus content. The conference week will also give students an experience of what it is like to attend a scientific conference, with an intensive schedule of talks across the week to be attended.
Reading Strategy	At Masters level students are expected to demonstrate the ability to find information, assess its relevance and utilise it in their studies in an independent manner; however the programme team recognise that students entering the programme may be at different levels of the development of the skills required to undertake this successfully. Therefore module leaders will provide you with a starting point in terms of core readings and the lecture material will also give you a strong starting point. However it is in the area of further reading that you need to show the independence of skills and of knowledge development, so you will need to find the Further Readings yourself. However, the skills required to do this are covered during the early stages of the course, during induction week you will have a library induction session, in the Research Methods and Practical Skills module that you take during the first semester we will cover how to undertake a literature search and how to assess and use the material you find appropriately. The programme tutorials will provide opportunities for you to further develop these skills and to ask any questions that you have. Further support and guidance is available through the library which runs workshops that you can sign up to, and also has advice in its website. Module leaders will give you a clear indication of any essential reading, and point you towards the appropriate textbooks and journals for their discipline. This will usually be in the form of a reading list in the module guide; the indicative list on this module specification is as it states indicative as the relevant available books and journals can change regularly – and the module specification is a document

	written only once when a module is modified and can last for many years. So it is important that you refer to the reading list for your specific year group as the definitive document. 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.
Indicative Reading List	Textbooks – current editions of • "Immunology", Goldsby R.A., Kindt T.J., Osbourne B.A. & Kuby J. (Freeman) • "Immunology", Male D.K., Brostoff J., Roth D.E. & Roitt I.V. (Mosby) • "Cellular and Molecular Immunology", Abbas A.K., Lichtman A.H. & Pillai S. (Elsevier Saunders) • "Advanced Immunology", Male D.K, Cooke A., Owen M., Trowsdale J. & Champion B. (Mosby) **Journals:** • Annual Review in Immunology • Cell • Current Opinion in Immunology • Immunology • Immunology Today • Journal of Biological Chemistry • Journal of Cell Biology • Journal of Immunology • Nature • Science

Part 3: Assessment	
Assessment Strategy	All specialist subject modules on the MSc BMS programme have a 50:50 weighting of course work to final exam. Coursework as decided by the module leader in line with the programme assessment strategy. **First and Second Attempt** Component A: Examination (3 hours) Essays requiring critical analysis or discussion are readily used to assess whether the learning outcomes for the module have been achieved across a broad range of topics. The essays are marked against clearly defined marking criteria. Component B: Oral Presentation (in class assessment on an individual basis) Assessment via a 20 min presentation plus questions enables the student to be assessed for their oral communication and presentation skills, in addition to their written skills. As a second skill based assessment students will also produce an abstract of the topic. Formative feedback is given throughout discussions during tutorials and seminars. Summative feedback is given on each aspect of the assessed seminars (slide content and layout, oral delivery, ability to answer questions), through a feedback score sheet and through verbal elaboration.

Identify final assessment component and element	**Examination**	
% 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** **(as % of component)**
1. Examination – final assessment	100
Component B **Description of each element**	**Element weighting** **(as % of component)**
1. Oral presentation (30 minutes) and associated abstract	100

Resit (further attendance at taught classes is not required)	
Component A (controlled conditions) **Description of each element**	**Element weighting** **(as % of component)**
1. Examination – resit paper	100
Component B **Description of each element**	**Element weighting** **(as % of component)**
1. Oral presentation and associated abstract	100

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.