UNIVERSITY OF
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Faculty of Science and Technology

DEPARTMENT OF BIOMEDICAL SCIENCES

BIOSCIENCES UNDERGRADUATE
BSC BIOMEDICAL SCIENCE
BSC HUMAN & MEDICAL SCIENCE
PROGRAMME HANDBOOK

Definitive September 2014

2 HOW YOU ARE TAUGHT

2.1 TEACHING AND LEARNING STRATEGY FOR THE COURSE

All courses within the Faculty of Science and Technology are designed to prepare you for professional life. The future world of work will demand people who can respond to and participate in change. Increasingly this will require you to be more flexible in patterns of employment with individuals taking responsibility for their own career development. Learning and understanding, and the development of critical skills in your chosen discipline will be guided by your progression through each Level of your programme. Skills development is centred on fundamental biological/ biochemical knowledge and numerical skills but you will also develop additional skills that are directly transferable to the workplace such as team-working and communication skills.

Modules are designed to encourage you to take responsibility for your own learning and to develop practical and applied awareness of the challenges of scientific work. Each module has its own combination of learning opportunities (e.g. lectures, tutorials, laboratory-based practicals, problem solving and computer-based exercises) that together with student-centred learning promote engagement with the subject material. A number of different teaching styles may be encountered according to the nature of the subject matter covered in the different modules.
You are encouraged to engage actively in your own learning and to reflect on your learning and development needs through personal development planning.

Credit Level 3. Teaching at Credit Level 3 will support you in the acquisition of scientific knowledge and study skills necessary to meet the entry requirements of your chosen undergraduate degree pathway. The core modules will be taught using lectures where you will gain knowledge and understanding of fundamental principles and concepts of biology, chemistry, maths and physics relevant to the Biosciences whilst technical skills are gained through practical and tutorial sessions.

Credit Level 4
Teaching at Credit Level 4 will support you in your transition to Higher Education from a didactic mode of delivery to student-centred approaches. Modules provide core knowledge and skills across the biosciences with much of the Level 4 programme being common across the Biosciences undergraduate module scheme. The module Critical Thinking for Scientists enables you to develop selected key skills that form a basis for continued development in higher levels of the programmes. General laboratory skills are embedded within core modules at Level 4.

Credit Level 5
At Credit Level 5 you are expected to take more responsibility for your own learning. The core modules you study develop a broader understanding of subject discipline enabling you to apply this knowledge to biological problems. The Laboratory Research module at Level 5 will prepare you with practical and theoretical research skills required for your final year project.

Credit Level 6
At Credit Level there is an expectation that you will be able to engage proactively with your own learning and understand how your learning relates

to that of others. You will gain specialist knowledge of your subject disciplines and will be expected to be able to research, identify and apply appropriate information to biological problems.

In summary, the teaching and learning strategy used will develop your intellectual abilities; your knowledge; your practical skills; your powers of creativity; analysis; synthesis and evaluation; and key transferable skills. This will be achieved using combinations of lectures, tutorials, laboratory-based practical sessions and will involve elements of problem solving and computer-based exercises to support student-centred independent learning.

2.2 THE SKILLS STRATEGY FOR THE PROGRAMME

The Faculty offers an undergraduate programme intended to provide its students with the range of skills and the knowledge required to effectively contribute to professional life as a bio scientist. This experience focuses on both the development of academic and practical skills relevant to the work place. The programme specifications at the end of this handbook set out the range of subject specific and transferable skills that are developed and assessed as students move through different levels of the programme. Also included in the Appendix 6 a programme 'skills map' which identifies which skills are taught, practised and assessed in each module.

Your studies are designed to prepare you for professional life within your discipline area as well as developing your transferable skills relevant to a wide range of professions. You will gain professional work place competencies such as practical skills, the ability to research and problem-solve with confidence. As you progress through the different Credit Levels of your programme you will be provided with opportunities to develop your employability skills. These opportunities are embedded throughout the scheme. You will be encouraged to keep an electronic professional development portfolio throughout your studies where you will collate evidence of the skills you have acquired. This portfolio will be yours to take and use after your graduation.

2.3 BLACKBOARD

Blackboard is an online learning system and every course and module has a Blackboard site which is used in a variety of ways to underpin course delivery and your learning. For example key learning materials are typically made available in Blackboard sites and all online coursework submissions are made through Blackboard. Your tutors use blackboard as the main way of communicating with you.

Each Faculty Registry also has a Blackboard site, where you'll find course handbooks, enrolment and module registration information, exam timetables, and more.

Blackboard is available at learning.westminster.ac.uk and Blackboard help for students is available via the 'Help' link at the top right of every Blackboard page. You can also access Blackboard on a smartphone or tablet device by

downloading the appropriate app – just visit the app store for your device and search for Blackboard Mobile Learn. For further information on Blackboard Mobile please visit http://bit.ly/Bbmobile

2.4 EMPLOYABILITY AND WORK PLACEMENT OPPORTUNITIES

Some courses within the Bioscience Undergraduate Programme offer specific work placement opportunities within the programme of study. For other courses you can participate in work placement opportunities through the choice of the elective module 3ENV633 Work Experience & Career Management Skills. This module enables you to develop additional skills for graduate employment through a work placement completed over the summer between Credit Levels 5 & 6. The module aims to improve your self-confidence and self-marketing capabilities.

Other work experience opportunities exist within the Faculty. We have a strong track record of attracting externally funded summer studentship bursaries enabling students to gain laboratory experience over the summer between Credit Levels 5 & 6. Opportunities to participate in these programmes are advertised to Credit Level 5 students towards the end of the first semester. A new scheme will also be introduced within the Faculty providing opportunities to shadow PhD students and technical staff working in the research laboratories.

The Department of Biomedical Science has a dedicated Employability co-ordinator who organises careers events. Additional information can be found in the Careers section of the Life Sciences Activities and Resources Blackboard site where internship and other job opportunities are advertised.

2.5 THE STUDENT CHARTER

The University of Westminster Student Charter was produced jointly by the University and the Students Union. The Charter sets out the University's responsibilities to you and highlights what we expect from you in return. The Charter also offers an overview of the University support and resources available to you, with more details to be found in its companion publication – our student handbook Essential Westminster. The student charter is available at westminster.ac.uk/student-charter.

2.6 THE DEAN'S LIST

Students who score over 70 % average across all of their modules at a particular Level will be added to the Dean's list. The Dean's list students receive a certificate and are invited to some events run by the Dean usually focussed on career development.

2.7 The University of Westminster and the Faculty of Science and Technology celebrates the rich diversity of its students and staff. It is fully committed to creating and maintaining a stimulating and supportive learning and working environment based on mutual respect, dignity and trust. We believe that this enables all staff and students to reach their full personal and professional potential regardless of their race, nationality, age, ethnic or national origins, sexual orientation, marital status, disability, gender, religion or belief.

9 PROGRAMME SCHEME, COURSE AIMS AND COURSE SCHEMES

This section provides an overview of the Biosciences Undergraduate Programme scheme, an introduction to individual courses, the individual course aims and course programmes.

9.1 BIOSCIENCES UNDERGRADUATE PROGRAMME SCHEME

The Biosciences Undergraduate Programme Scheme comprises of 16 courses and a Credit Level 3 foundation year. A summary of the core and option modules for each of the Credit Levels of the programme are summarised in the following tables:

In all the diagrams ■ Core □ Option

Level 3

MODULE CODE	MODULE TITLE	APPLIED BIOMEDICAL SCIENCE	BIOMEDICAL SCIENCES F/T	BIOMEDICAL SCIENCES sandwich	HUMAN NUTRITION	HUMAN NUT. (NUT. & EXERCISE SCI.)	HUMAN & MEDICAL SCIENCE	PHARMACOLOGY & PHYSIOLOGY	BIOCHEMISTRY	BIOLOGICAL SCIENCES	BIO. SCI. (MICROBIOLOGY)	BIO. SCI. (BIOTECHNOLOGY)	BIO. SCI. (MOL. BIOL.& GENETICS)	BIO. SCI (CANCER BIOLOGY)	BIO. SCI (FORENSIC BIOLOGY)
FLSF301	Processes in Biology		■	■	■	■	■	■	■	■	■	■	■	■	■
FLSF302	Chemistry for Life Sciences		■	■	■	■	■	■	■	■	■	■	■	■	■
FLSF303	Introduction to Physiology & Anatomy		■	■	■	■	■	■	■	■	■	■	■	■	■
FLSF304	Maths & Physical Sciences for Life Sciences		■	■	■	■	■	■	■	■	■	■	■	■	■
FLSF305	Academic Skills for Life Sciences		■	■	■	■	■	■	■	■	■	■	■	■	■
FLSF306	Perspectives in Health Care		□	□	□	□	□	□	□	□	□	□	□	□	□
FLSF307	Bioscience in Action		□	□	□	□	□	□	□	□	□	□	□	□	□

FSLF306 Issues in Health Care is an option module for the Complementary Medicine Scheme. Students studying the Bioscience Undergraduate Programme will be expected to take FSLF307 Science in Action.

Level 4

MODULE CODE	MODULE TITLE	APPLIED BIOMEDICAL SCIENCE	BIOMEDICAL SCIENCES F/T	BIOMEDICAL SCIENCES sandwich	HUMAN NUTRITION	HUMAN NUT. (NUT. & EXERCISE SCI.)	HUMAN & MEDICAL SCIENCE	PHARMACOLOGY & PHYSIOLOGY	BIOCHEMISTRY	BIOLOGICAL SCIENCES	BIO. SCI. (MICROBIOLOGY)	BIO. SCI. (BIOTECHNOLOGY)	BIO. SCI. (MOL. BIOL.& GENETICS)	BIO. SCI (CANCER BIOLOGY)	BIO. SCI (FORENSIC BIOLOGY)
FSLS400	Biochemistry and Molecular Biology	■	■	■	■	■	■	■	■	■	■	■	■	■	■
FSLS401	Cell Biology	■	■	■	■	■	■	■	■	■	■	■	■	■	■
FSLS402	Critical Thinking for Scientists	■	■	■	■	■	■	■	■	■	■	■	■	■	■
FSLS403	Human Anatomy and Physiology	■	■	■	■	■	■	■	■	■	■	■	■	■	■
FMAB400	Applications of Molecular & Applied Biosciences								■		■	■	■	■	■
FHHS400	Exercise & Nutritional Sciences				■	■									
FHHS401	Principles and Practice of Human Nutrition				■	■									
FBMS420	Biomedical Sciences		■	■											
FHHS402	Principles of Pharmacology						■	■							
FCMM411	Botany														
FBMS421	Work-Based Learning 1	■													

Level 5

MODULE CODE	MODULE TITLE	APPLIED BIOMEDICAL SCIENCE	BIOMEDICAL SCIENCES F/T	BIOMEDICAL SCIENCES sandwich	HUMAN NUTRITION	HUMAN NUT. (NUT. & EXERCISE SCI.)	HUMAN & MEDICAL SCIENCE	PHARMACOLOGY & PHYSIOLOGY	BIOCHEMISTRY	BIOLOGICAL SCIENCES	BIO. SCI. (MICROBIOLOGY)	BIO. SCI. (BIOTECHNOLOGY)	BIO. SCI. (MOL. BIOL.& GENETICS)	BIO. SCI (CANCER BIOLOGY)	BIO. SCI (FORENSIC BIOLOGY)
FMAB500	Biochemistry	■	■	■	■		■	■	■		■	■	■	■	■
FMAB501	Bioinformatics								■		■	■	■		□
FMAB502	Biological & Organic Chemistry								■			□			
FMAB503	Cancer Biology								□					■	
FMAB504	Molecular Genetics								■			□	■		□
FMAB505	Processes in Pathology													■	■
FMAB506	Recombinant DNA Applications								□			■	■		■
FMAB507	Techniques in Forensic Biology														■
FMAB508	The Microbial World								□		■	■			
FHHS500	Applied Pathophysiology	■	■	■										■	
FHHS501	Cell Communication						■	■	□						
FHHS502	Health Behaviour				■	■									
FHHS503	Human Nutrition				■	■									
FHHS504	Organ Systems Pharmacology						■	■							
FHHS505	Physiology For Health Sciences				■	■	■	■							
FHHS506	Physiology of Exercise					■									
FBMS520	Fundamentals of Disease Diagnosis	■	■	■					□		■	□			□
FBMS521	Immunology	■	■	■					□		■	□			□
FBMS522	Medical Genetics	■	■	■					□			□	■	■	□
FBMS523	Professional Practice in Biomedical Sciences			■											
FBMS524	Research Methods	■													
FBMS525	Work Based Learning 2	■													
FSLS500	Laboratory Research Methods		■	■	■	■	■	■	■	■	■	■	■	■	■

Level 6

	LEVEL 6																
MODULE CODE	MODULE TITLE	APPLIED BIOMEDICAL SCIENCE	BIOMED. SCI. F/T	BIOMEDICAL SCIENCES sandwich	HUMAN NUTRITION	HUMAN NUTRITION (NUT. & EXERCISE SCI.)	HUMAN & MEDICAL SCIENCE	PHARMACOLOGY & PHYSIOLOGY	BIOCHEMISTRY	BIOLOGICAL SCIENCES	BIOLOGICAL SCIENCES (MICROBIOLOGY)	BIOLOGICAL SCIENCES (BIOTECHNOLOGY)	BIOLOGICAL SCIENCES (MOL. BIOL.& GENETICS)	BIOLOGICAL SCIENCES (CANCER)	BIOLOGICAL SCIENCES (FORENSIC BIOLOGY)
FMAB600	Forensic Science in the Courts														■
FMAB601	Advanced Cancer Biology						□		□					■	
FMAB602	Applied Microbiology										■	■			
FMAB603	Current Topics in Biochemistry & Molecular Biology								■		□	□	■	□	□
FMAB604	DNA identity and Disease								□			□	■	□	■
FMAB605	Enzymes: Mechanisms and Control								■			□			
FMAB606	Forensic Toxicology & Anthropology														■
FMAB607	Biochemical Evolution and Molecular Engineering								■		□	□	□		
FMAB608	Molecular Therapeutics						□					□	■	■	
FMAB609	Protein Biochemistry								■			□	□		
FMAB610	Working a Crime Scene														■
FHHS600	Applied & Clinical Nutrition				■	■									
FHHS601	Central Nervous System Pharmacology						□	■							
FHHS602	Clinical Investigation						■								
FHHS603	Current Topics in Exercise Physiology				□	■									
FHHS604	Disorders of Homeostasis and Metabolism				□		■								
FHHS605	Drug Discovery & Development						□	■						□	
FHHS606	Endocrinology & Reproduction				□		■								
FHHS607	Food Science in Nutrition				■										
FHHS608	Immunopharmacology						□	■							
FHHS609	Nutrition & Performance				□	■									
FHHS610	Public Health				■	□									
FHHS611	Topics in Neuroscience						□	■							
FHHS612	Xenobiotic Metabolism and Toxicology						□	■	□			□		□	□
1PSY642	Psychology of Sport, Exercise and Performance					□									
FBMS600	Cellular Pathology	■	■	■										■	
FBMS601	Clinical Chemistry	■	■	■										□	
FBMS602	Clinical Immunology	■	■	■								□			
FBMS603	Haematology & Transfusion Science	■	■	■											
FBMS604	Learning from Work Experience			■											
FBMS605	Medical Microbiology	■	■	■							■				
FBMS606	Medical Parasitology										□				
FBMS607	Work Based Learning 3	■													
FSLS600	Enterprise for Life Sciences						□		□		□	■	□		□
FSLS601	Work Experience & Career Management Skills				□	□	□		□		□	□	□		□
FSLS602	Current Issues in Bioethics				□		□								□
FSLS603	Project A *30 credit*	■	■	■	■	■	■	■	■	■	■	■	■	■	■
FSLS604	Project B *60 credit*														

NOTE: Module Proformas can be found in the separate ‘module pro-forma’ document for purposes of the review. Students will have access to the pro-formas through the Faculty Registry Blackboard site.

9.2 FOUNDATION YEAR FOR SCHOOL OF LIFE SCIENCES UNDERGRADUATE PROGRAMMES

Course Leader: Stephen Reed; Room: C1.28; Tel Extn: 64155; e-mail: reeds@westminster.ac.uk

Introduction

Welcome to the Faculty of Science & Technology and a very warm welcome to you at the start of your studies at Westminster. The staff and our continuing students are delighted that you will be joining us. Our community here is a large and diverse one, mirroring the population of London itself. There are students from a very wide range of countries and backgrounds, taking courses from first degree to PhD level in a great many different subjects. For that reason alone, I think you will find it an exciting place to be. Once you arrive at the University, staff will do their best to answer any questions you have, so please do not hesitate to ask.

The University of Westminster and Faculty of Science & Technology offer a range of student support and guidance structures which will help you get the most from your studies and also to help you if you run into challenging times. Some of these support mechanisms will be explained to you during the orientation programme in September.

The Life Sciences Foundation (LSF) programme aims to provide 'A' level equivalent studies in basic sciences to enable students without traditional qualifications access to any of our undergraduate courses. In addition to core modules in Biology, Chemistry, Physiology and Maths & Physical Science, you will engage in a Study Skills module (including IT) and a specially designed career-related module. We use a varied package of assessments to enable all students to show their competence and achievements. Many Level 3 students find the year a useful way to settle into the discipline of learning and time management before embarking on their chosen degree pathway.

Course Aims:

- to ensure that enrolled students acquire the level of scientific knowledge and study skills necessary to meet the entry requirements of their chosen undergraduate degree pathway
- pathway specific aims dependent on chosen BSc course and final award

Course Programme:

Core Modules		
FSLF301	Processes in Biology	30 credit
FSLF302	Chemistry for Life Sciences	30 credit
FSLF303	Introduction to Physiology & Anatomy	15 credit
FSLF304	Maths & Physical Science for Life Sciences	15 credit
FSLF305	Academic Skills for Life Sciences	15 credit
Option	*Choose one from**	
FSLF306	Perspectives in Healthcare	15 credit
FSLF307	Bioscience in Action	15 credit

*Option module is dependent on target award

More detailed information about each of the modules can be found in the respective module pro-formas which can be accessed via the School Registry Blackboard site.

9.6 BSc (HONOURS) HUMAN & MEDICAL SCIENCE

Course Leader: Dr Maria Ashioti; Room: C1.43; Tel Extn: 64133; e-mail: M.Ashioti@westminster.ac.uk

Introduction

Welcome to the BSc (Hons) Human Medical Science course in the Faculty of Science & Technology. The recent rapid growth in knowledge and technology has led to an enhanced understanding of human function in health and disease. These have led to significant developments in the understanding of disease pathology and the subsequent diagnosis, which are two core elements of this course which you will study. This degree integrates biological and medical sciences in order to understand human structure, function, development and behaviour, providing ideal preparation to take up employment opportunities including working in healthcare, research institutions, industry and the scientific or medical civil services. You will also develop the skills and knowledge required for the graduate-entry programmes into medicine.

Course aims:

- to provide students through their core and other modules with the associated knowledge and skills which support the study of human medical science.
- to provide students through their core and other modules with a broad and balanced knowledge of human physiology & anatomy and appropriate practical skills.
- to enable students to follow particular subject interests within human medical sciences through their option module choices.
- to develop in students the ability to apply their physiological & anatomical knowledge and skills to the solution of theoretical and practical problems in human medical science.
- to develop in students a range of transferable skills which will be of value in their potential future employment.
- to provide students with a knowledge and skills base from which they can proceed to further studies in physiology or allied areas.
- to produce graduates capable of carrying out scientific research.
- to enable students to appreciate the importance of physiology in a medical, economic, environmental and social context.
- to engender a sense of enthusiasm for human medical science by providing a challenging and intellectually stimulating teaching and learning experience.
- to promote professionalism as a fundamental attribute of academic and professional life.

Course Programme

This programme is designed to be studied in a full-time mode over 3 years.

Credit Level 4

Core Modules		
FSLS400	Biochemistry and Molecular Biology	30 credit
FSLS401	Cell Biology	15 credit
FSLS402	Critical Thinking for Scientists	15 credit
FSLS403	Human Anatomy & Physiology	30 credit
FHHS402	Principles of Pharmacology	15 credit
	Elective module	15 credit

Credit Level 5

Core Modules		
FMAB500	Biochemistry	15 credit
HHS501	Cell Communication	15 credit
FHHS504	Organ Systems Pharmacology	30 credit
FHHS505	Physiology for Health Sciences	15 credit
FSLS500	Laboratory Research Methods	30 credit
	Elective Module	15 credit

Credit Level 6

Core Modules		
FHHS602	Clinical Investigation	15 credit
FHHS604	Disorders of Homeostasis & Metabolism	15 credit
FHHS606	Endocrinology & Reproduction	15 credit
FSLS603	Project	30 credit
Option Modules	*Two modules from:*	
FMAB601	Advanced Cancer Biology	15 credit
FMAB608	Molecular Therapeutics	15 credit
FHHS601	Central Nervous System Pharmacology	15 credit
FHHS605	Drug Discovery & Development	15 credit
FHHS608	Immunopharmacology	15 credit
FHHS611	Topics in Neuroscience	15 credit
FHHS612	Xenobiotic Metabolism and Toxicology	15 credit
FSLS600	Enterprise for Life Sciences	15 credit
FSLS601	Work Experience & Career Management Skills	15 credit
FSLS602	Current Issues in Bioethics	15 credit
	Elective module	15 credit

More detailed information about each of the modules can be found in the respective module pro-formas which can be accessed via the Faculty Registry Blackboard site.