



Part one: Programme Specification

Course record information

Name and level of final award:	BSc Honours Biomedical Sciences (Sandwich)
Name and level of intermediate awards:	Diploma of HE Certificate of HE
Awarding body/institution:	University of Westminster
Status of awarding body/institution:	Recognised Body
Location of delivery:	115 New Cavendish Street
Language of delivery and assessment:	English
Course/programme leader:	Dr Anatoliy Markiv
Course URL:	http://www.westminster.ac.uk/courses/subjects/biomedical-sciences/undergraduate-courses/sandwich/u09subms-bsc-honours-biomedical-sciences
Mode and length of study:	Sandwich, 4 years
University of Westminster course code:	W50
JACS code:	
UCAS code:	B900
QAA subject benchmarking group:	<i>Biomedical Sciences</i>
Professional body accreditation:	The Institute of Biomedical Sciences (IBMS)
Date of course validation/review:	2004, 2007
Date of programme specification:	2012

Admissions requirements

Students are required to have CCC passes at A2 Level to include two Science subjects (Biology preferred) or equivalent qualifications. In addition English Language and Mathematics GCSE passes at Grade C or above are required. Students will need a good standard of English before starting your degree. If their first language and/or schooling is/was not in English, they will need a minimum IELTS score of 6.0, or a recognised equivalent. Entry into the programme at Level 5 is possible via the Assessment of Prior Certificated Learning or Assessment of Prior Experiential Learning procedures of the University for suitable entrants.

Aims of the course

- To meet the requirements of the Institute of Biomedical Science (IBMS) for membership and part fulfill the standards of education and training of the Health and Care Professions Council (HCPC).
- to promote professionalism as a fundamental attribute of academic and professional life
- To promote the students' knowledge of biological and medical sciences in order that they may analyse and understand the basis of human disease
- To enable students to apply their understanding of disease processes and diagnostic procedures in the contexts of diagnostic pathology, biomedical research and bio-industry laboratories.
- To enable students to function in, and/or relate to, the practical work undertaken in a variety of laboratory settings in biomedical sciences.
- To promote students' awareness of the impact of the advances in science and technology on diagnostic and research laboratory practice.
- To produce graduates capable of carrying out scientific research.
To develop transferable skills which will enhance the students' employment and postgraduate education prospects.

Employment and further study opportunities

Today's organisations need graduates with both good degrees and skills relevant to the workplace, i.e. employability skills. The University of Westminster is committed to developing employable graduates by ensuring that:

- Career development skills are embedded in all courses
- Opportunities for part-time work, placements and work-related learning activities are widely available to students
- Staff continue to widen and strengthen the University's links with employers in all sectors, involving them in curriculum design and encouraging their participation in other aspects of the University's career education and guidance provision
- Staff are provided with up-to-date data on labour market trends and employers' requirements, which will inform the service delivered to students.

Biomedical Sciences graduates may pursue a variety of career options in addition to NHS and private diagnostic laboratories. The broad knowledge and skills base characteristic of a BSc Biomedical Science graduate is also attractive to employers in the pharmaceutical, biotechnology and paramedical industries. Some students use this degree as an entry route to study medicine whilst others choose to further their education and career by entering postgraduate study at MSc or PhD level.

The Standards of Proficiency outlined by the HCPC play a central role in gaining admission to the Register for Biomedical Scientists and thereby gain the right to use the protected title of the profession. The role of the IBMS in this process is as an awarding body for the Certificate of Competence, by which individuals can provide evidence that they have met the competency required of the HCPC standards of proficiency, are 'fit to practise' as Biomedical Scientists and are therefore eligible to apply for professional registration with the HCPC. These standards are reproduced in their entirety in the IBMS Registration Training Portfolio. The IBMS's Certificate of Competence will only be awarded if there is supporting evidence that competence has been achieved. This evidence is presented using the Registration Training Portfolio, cross-referenced to the relevant competence or standards it supports.

Before working in the profession, all Biomedical Scientists are required to be registered with the HCPC. An accredited Biomedical Science Honours degree and successful completion of the IBMS Registration Training Portfolio for the Certificate of Competence are prerequisite for entry onto the Register.

It is vitally important for you to recognise that if you wish to be registered with the HCPC you will need to undertake further training within an approved pathology laboratory to complete the Training Portfolio. You might consider spending a year on placement in an NHS laboratory during which you gain work experience and work towards completion of your IBMS Registration Training Portfolio. Further work-based training in an appropriate clinical laboratory can allow completion of the IBMS Certificate of Competence Registration Portfolio. The IBMS, as the professional body for biomedical scientists, verifies professional competence against the Health Professions Council's *Standards of Proficiency*. The Institute then awards a Certificate of Competence that can be presented as part of an application to the HCPC to register as a Biomedical Scientist.

Career Development Centre can help you plan your future by providing quality information, advice and guidance on the options to consider when you leave the University of Westminster, and enhancing your employability while studying. Information is available on graduate work, internships, part-time work during your studies and voluntary opportunities within charities.

You may use the service at any stage but we would advise you to make contact early in your course. Register for the Vacancies and Events booking system to access full details of all vacancies and events advertised by the Career Development Centre. There are also Information Rooms based at 101 New Cavendish Street and the Harrow campus, containing a range of comprehensive careers resources.

For further information, visit <http://www.westminster.ac.uk/study/current-students/support-and-facilities/career-development-centre>

Learning outcomes

Learning outcomes are statements on what successful students have achieved as the result of learning. These threshold statements of achievement are linked to the knowledge, understanding and skills that a student will have gained on successfully completing a course.

Knowledge and understanding

At Level 4 students should be able to:

- demonstrate in their module assessments knowledge and understanding of the fundamental principles, concepts and terminology of human physiology, cell and molecular biology and organismal biology which underpin biomedical sciences;
- explain the theoretical background and demonstrate competence in a variety of laboratory procedures relevant to Biomedical Sciences.

At Level 5 students should be able to:

- demonstrate, through assessments, a broad knowledge and understanding of cell metabolism, genetics, human physiology and the immune system;
- discuss the complex intracellular processes which may result in disease;
- design experiments, analyse data and interpret results;
- explain events leading to human diseases and the principles of investigative pathology;
- demonstrate, through assessments, knowledge of the clinical laboratory environment and the assays and processes that are integral to that environment.

At Level 6 students should be able to:

- demonstrate, through assessments, a detailed knowledge of the major areas of investigative pathology, namely medical microbiology, clinical chemistry, haematology, serology, cellular pathology and immunology;
- assimilate and integrate this knowledge on disease processes and diagnostic procedures and apply it in the context of diagnostic pathology and biomedical research areas;
- design and carry out a project using standard scientific format;
- demonstrate an understanding of the impact of advances in science and technology, for example automation and molecular procedures, on the major areas of biomedical sciences

Specific skills

At Level 4 students should be able to:

- be competent in the use of SI units, basic data analysis and scientific report writing;
- be competent in standard laboratory techniques and the collection and manipulation of experimental data;

- have enhanced their basic literacy and numeracy skills as applicable in biosciences.

At Level 5 students should be able to:

- retrieve, competently, information from the literature, including interrogation of electronic databases and in the citation of literature in a review or scientific paper format;
- produce a literature review of an area in which they may undertake research and produce a Design Study for a research project;
- select appropriate statistical methods, use relevant software packages and evaluate their application to experimental data;
- devise, perform and evaluate experimental methods for investigation in biomedical sciences.

Following Clinical Laboratory Practice students should be able to:

- perform a variety of laboratory assays and activities to the satisfaction of their workplace training officer or designated trainer;
- develop professional attributes expected of a Biomedical Scientist;
- collate and present evidence demonstrating the acquisition of laboratory competencies necessary for completion of the IBMS Certificate of Competence Registration Portfolio;

At Level 6 students should be able to:

- integrate theoretical and practical aspects of medical microbiology, clinical chemistry, haematology, serology, cellular pathology and immunology;
- develop a range of skills used both in the routine diagnostic laboratories as well as the biomedical research laboratories;
- carry out independent research within a chosen area of biomedical sciences analyse and interpret results, to produce a Project

Key transferable skills

Learning Resources & Management of Information:

- **at Level 4** students are expected to be able to: access effectively library resources, University-wide and School Intranet facilities and the Internet as appropriate; undertake simple research tasks with guidance;
- **at Level 5** students are expected to further be able to manage their own learning strategy in the biosciences, making effective and critical use of the variety of resources available in particular disciplines and be able to access and use the scientific literature, including electronic databases;
- **at Level 6** students are expected to further be able to make use of sources of information with minimal guidance in the production of reviews and evaluative discussions of their own and others work.

Communication Skills:

- **at Level 4** students are expected to be able to: communicate effectively about the biosciences in a variety of course work and

examination formats, including practical reports, using IT resources as appropriate; formulate and give a short oral or poster presentation;

- **at Level 5** students are expected to further be able to: communicate through individual oral presentation using presentation appropriate to the discipline and be able to answer questions from the audience competently; use correct scientific units in reporting practical procedures or data handling problems; cite the scientific literature according to an accepted format;
- **at Level 6** students are expected to further be able to: engage effectively in debate; produce detailed and coherent Project reports.

Intellectual Skills:

- **at Level 4** students are expected to be able to apply methods and subject knowledge accurately and carefully to a given problem as appropriate to the biosciences discipline and appreciate the complexities of the issues;
- **at Level 5** students are expected to further be able to choose techniques/methods applicable for the resolution of a problem which may necessitate the integration of knowledge from different bioscience disciplines;
- **at Level 6** students are expected to further be able to identify methods/tools appropriate in the solution of a problem, justify their choice and evaluate their success.

Independent and Team Work:

- **at Level 4** students are expected to be able to: work effectively with other members of a group in problem solving and laboratory practice; manage time effectively and prioritise tasks so as to meet deadlines;
- **at Level 5** students are expected to further be able to: interact effectively within a group in the provision and receipt of information and ideas; need minimum direction in directing their own learning;
- **at Level 6** students are expected to further be able to: work and interact effectively within a group to formulate approaches to the task in hand; recognise, support or be proactive in group members' roles, particularly leadership; take responsibility for their own work and reflect on/evaluate it.

Self Evaluation and Career Management:

- **at Level 4** students are expected to be able to evaluate their own strengths and weaknesses in the subjects studied and their practice;
- **at Level 5** students are expected to further be able to: develop confidence in their own judgement in their field of study and be prepared to support/evaluate their conclusions; be aware of information sources on postgraduate study and careers;
- **at Level 6** students are expected to further be able to: apply their own judgements confidently, reflect on their actions and be active in seeking and making use of feedback; be aware of current opportunities for postgraduate study and career development and the need for forward planning; produce a high quality Curriculum Vitae .

- students should at all times approach their studies with professionalism, realising that this approach needs to be carried forward into their future professional life

Learning, teaching and assessment methods

Learning

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. Many modules make use of the online learning environment Blackboard to provide a learning resource, for example holding presentations, documents and web links.

Teaching

A number of different teaching styles may be expected, according to the nature of the subject matter covered in the different modules. At Level 4, the modules provide core knowledge and skills across the biosciences; much of the Level 4 programme is common across the School's undergraduate module scheme. The module Critical Thinking for Scientists enables all School of Life Sciences undergraduates to develop selected study and 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 and the Laboratory Research module at Level 5 which prepares students for their the final year project. In general modules are delivered using combinations of lectures, tutorials, laboratory-based practicals, problem solving and computer-based exercises and student-centred learning.

Assessment

Module assessment is frequently on the basis of examination and course work ratios of 50:50 or 60:40. Several modules in the scheme are assessed by 100% course work. Assessment methods for course work are varied and include essays, practical work, group work, presentations and reports. This variety enables students to develop skills that will prove useful in employment. The 30 credit Level 6 research Project is assessed by written thesis.

Course structure

This section shows the core and option modules available as part of the course and their credit value. Full-time Undergraduate students study 120 credits per year.

Credit Level 4				
Module code	Module title	Status	UK credit	ECTS
FSL400	Biochemistry and Molecular Biology	Core	30	15
FSL401	Cell Biology	Core	15	7.5
FSL402	Critical Thinking for Scientists	Core	15	7.5
FSL403	Human Physiology & Anatomy	Core	30	15
FBMS420	Biomedical Science	Core	15	7.5

Elective module		Option	15	7.5
Award of Certificate of Higher Education available				
Credit Level 5				
Module code	Module title	Status	UK credit	ECTS
FMAB500	Biochemistry	Core	15	7.5
FHHS500	Applied Pathophysiology	Core	15	7.5
FBMS520	Fundamentals of Disease Diagnosis	Core	15	7.5
FBMS521	Immunology	Core	15	7.5
FBMS522	Medical Genetics	Core	15	7.5
FBMS523	Professional Practice in Biomedical Sciences	Core	15	7.5
FSL500	Laboratory Research Methods	Core	30	15
Award of Diploma of Higher Education available				
Clinical Laboratory Practice (Sandwich Year)*				
*subject to successful interview and pass FBMS523. Student must also be eligible to progress to Level 6. Students who are not offered a placement will transfer to Full Time BMS programme				
Credit Level 6				
Module code	Module title	Status	UK credit	ECTS
FBMS600	Cellular Pathology	Core	15	7.5
FBMS601	Clinical Chemistry	Core	15	7.5
FBMS602	Clinical Immunology	Core	15	7.5
FBMS603	Haematology & Transfusion Science	Core	15	7.5
FBMS604	Learning From Work Experience	Core	15	7.5
FBMS605	Medical Microbiology	Core	15	7.5
FSL603	Project	Core	30	15
Award of BSc available				
Award of BSc Honours available				

Level 4 option modules:

FMAB400 Applications of Molecular and Applied Bioscience

FHHS400 Exercise & Nutritional Sciences

FHHS401 Principles and Practice of Human Nutrition

FHHS402 Principles of Pharmacology

FCMM411 Botany

Please note: Not all option modules will necessarily be offered in any one year.

Academic regulations

The BSc Honours Biomedical Sciences (Sandwich) and its intermediate awards operate in accordance with the University's Academic Regulations and the Framework for Higher Education Qualifications in England, Wales and Northern Ireland published by the Quality Assurance Agency for Higher Education (QAA) in 2008.

All students should make sure that they access a copy of the current edition of the general University handbook called Essential Westminster, which is available at westminster.ac.uk/essential-westminster. The following regulations should be read in conjunction with Section 17: Modular Framework for Undergraduate Courses and relevant sections of the current Handbook of Academic Regulations, which is available at westminster.ac.uk/academic-regulations

Award

To qualify for the award of BSc Honours Biomedical Sciences (Sandwich) ,a student must have:

- obtained at least 360 credits including:
 - passed 75credits at credit Level 4 or higher and achieved at least a condoned credit in each of the remaining modules worth 45 credits at Level 4; and
 - passed a minimum of 120 Credits at credit Level 5 or higher; and
 - passed a minimum of 120 credits at credit Level 6 or higher.
- attempted modules with a maximum value of 330 credits at credit Levels 5 and 6; and
- Have achieved a pass in the core module Biomedical Science at level 4, in the core modules Disease Investigation and Applied Pathophysiology at level 5 and in the five core modules Clinical Chemistry, Haematology + Transfusion Science, Cellular Pathology, Clinical Immunology and Medical Microbiology at level 6.

The class of the Honours degree awarded is decided by two criteria, the average of the best 105 credits passed at credit Level 6 being in the range of the class to be awarded, and the average of the next best 105 credits passed at credit Levels 5 and 6 provided the next best 105 credits passed are no more than one classification below this.

Support for students

Upon arrival, an induction programme will introduce students to the staff responsible for the course, the campus on which they will be studying, the Library and IT facilities and to the Faculty Registry. Students will be provided with the Course Handbook, which provides detailed information about the course. Students are allocated a personal tutor who can provide advice and guidance on academic matters.

Learning support includes four libraries, each holding a collection of resources related to the subjects taught at their Faculty. Students can search the entire library collection online through the Library Search service to find and reserve printed books, and access electronic resources (databases, e-journals, e-books).

Students can choose to study in the libraries, which have areas for silent and group study, desktop computers, laptops for loan, photocopying and printing services. They can also choose from several computer rooms at each campus where desktop computers are available with the general and specialist software that supports the courses taught at their Faculty. Students can also securely connect their own laptops and mobile devices to the University wireless network.

The University uses a Virtual Learning Environment called Blackboard where students access their course materials, and can communicate and collaborate with staff and other students.

[Student Affairs](#) provide advice and guidance on accommodation, financial and legal matters, personal counselling, health and disability issues, careers and the chaplaincy providing multi-faith guidance. The Student Affairs Hub is located at 101 New Cavendish Street, Cavendish House (1st Floor), with an additional office located at the Harrow Campus.

<http://www.westminster.ac.uk/study/new-students/when-you-arrive>

The [University of Westminster Students' Union](#) also provides a range of facilities to support all students during their time at the University. <http://www.uwsu.com/>

Reference points for the course

Internally

The University of Westminster's Mission Statement, Quality Assurance Handbook and Modular Framework inform the programme's establishment of quality and good practice, together with Teaching & Learning Policy statements.

A key element in this programme is the provision of both a broad subject range of modules and challenging research Projects. Delivery of such a programme is linked to the research expertise of the academic staff of the Department of Biomedical Sciences.

Externally

The QAA Biomedical science Benchmark statement describes the skills and attributes that Honours graduates in the area of Biomedical sciences should possess.

The South East England Consortium (SEEC) of 37 HE institutions has produced a set of Level descriptors, the use of which the University has adopted as good practice throughout its courses.

The Institute of Biomedical Science (IBMS), as the accrediting professional body for this degree programme, provides the relevant review guidelines in *Criteria and Requirements for Accreditation and re-accreditation of BSc (Hons) Degrees in Biomedical Science (2010)*.

Professional body accreditation

The course BSc (Hons) Biomedical Sciences (Sandwich) is accredited by a professional statutory body (PSB) the Institute of Biomedical Sciences (IBMS)

For additional information visit their website: <http://www.ibms.org>

Biomedical Scientist title is protected and can only be used by people on the Health and care Professional Council (HCPC) Register. Honours graduates can expect to become registered with the HCPC as Biomedical Scientists provided they fulfil the additional HCPC requirements of competencies through suitable employment and undertaking the IBMS certificate of competence.

For additional information visit their website: <http://www.hcpc-uk.org.uk>

BSc (Hons) Biomedical Sciences (Sandwich) courses recognised by the Society of Biology.

For additional information visit their website: <http://www.societyofbiology.org>.

Quality management and enhancement

Course management

The management structure supporting the BSc (Hons) Biomedical Sciences (Sandwich) course is as follows:

Dean of Faculty: Professor Jane Lewis (e-mail: lewisjm@westminster.ac.uk) who holds overall responsibility for the Undergraduate Programme and for all other courses run by the Faculty of Science and Technology.

Heads of Departments: who are responsible for providing modules in their subject areas and managing the staff who deliver them:

Biomedical Sciences: Dr John Murphy (E: j.murphy@westminster.ac.uk)
Interim acting till new HoD takes up post.

Life Sciences: Prof. Annie Bligh (E: a.bligh@westminster.ac.uk)

Faculty Director for Learning, Teaching: Dr Mark Clements (E: M.O.Clements@westminster.ac.uk) who has responsibility for the enhancement and development of learning and teaching within the Faculty of Science and Technology.

Faculty Director for Quality Assurance and Enhancement: Dr Mark Baldwin (E: M.Baldwin@westminster.ac.uk) who has responsibility for ensuring the quality of the courses within the Faculty of Science and Technology.

Course approval, monitoring and review

The course was initially approved by a University Validation Panel in 2012. The panel included internal peers from the University and external subject specialists from academia and industry to ensure the comparability of the course to those offered in other universities and the relevance to employers. Periodic course review helps to ensure that the curriculum is up-to-date and that the skills gained on the course continue to be relevant to employers.

The course is monitored each year by the Faculty to ensure it is running effectively and that issues which might affect the student experience have been appropriately addressed. Staff will consider evidence about the course, including the outcomes from each Course Committee, evidence of student progression and achievement and the reports from external examiners, to evaluate the effectiveness of the course. The Annual Monitoring Sub-Committee considers the Faculty action plans resulting from this process and the outcomes are reported to the Academic Council, which has overall responsibility for the maintenance of quality and standards in the University.

Student involvement in Quality Assurance and Enhancement

Student feedback is important to the University and student views are taken seriously. Student feedback is gathered in a variety of ways. The most formal mechanism for feedback on the course is the Course Committee. Student representatives will be elected to sit on the Committee to represent the views of their peer group in various discussions. The University and the Students' Union work together to provide a full induction to the role of the course committee.

All students are invited to complete a Module Feedback Questionnaire before the end of each module. The feedback from this will inform the module leader on the effectiveness of the module and highlight areas that could be enhanced. The University also has an annual Student Experience Survey, which elicits feedback from students about their course and University experience.

Students meet with review panels when the periodic review of the course is conducted to provide oral feedback on their experience on the course. Student feedback from course committees is part of the Faculty's' quality assurance evidence base.

For more information about this course visit:

<http://www.westminster.ac.uk/courses/subjects/biomedical-sciences/undergraduate-courses/sandwich/u09subms-bsc-honours-biomedical-sciences>

Please note: This programme specification provides a concise summary of the main features of the course and the learning outcomes that a student might reasonably be expected to achieve and demonstrate if s/he takes full advantage of the learning opportunities that are provided. This specification should be read in conjunction with the Course Handbook provided to students and Module Handbooks, which provide more detailed information on the specific learning outcomes, content, teaching, learning and assessment methods for each module.

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