Programme Specification: Biomedical and Physiological Sciences

UNIVERSITY OF WESTMINSTER

Course record information

Name and level of final award	• Foundation Degree - Biomedical and Physiological Sciences DL The award is Bologna FQ-EHEA first cycle degree or diploma compatible
Name and level of intermediate awards	• Certificate of Higher Education (CertHE) - Biomedical and Physiological Sciences
Awarding body/institution	University of Westminster
Teaching institution	University of Westminster
Status of awarding body/institution	Recognised Body
Location of delivery	Primary: Central London Secondary/Tertiary Locations: Open learning
Language of delivery and assessment	English
QAA subject benchmarking group(s)	QAA Foundation Degree Characteristics Statement https://www.qaa.ac.uk/docs/qaa/quality-code/foundation-degree-characteristics-statement-2020.pdf?sfvrsn=6fc5ca81_10
Professional statutory or regulatory body	Approved by the Institute of Biomedical Science (IBMS) https://www.ibms.org (Reapproval pending spring/ summer 2022)
Westminster course title, mode of attendance and standard length	• FD in Biomedical and Physiological Sciences DL, Open/Distance Learning, September start - 3 years standard length
Valid for cohorts	From 2022/3

Additional Course Information

Students undertaking the FDSc Biomedical and Physiological Sciences pathway must be in full or part-time employment within an area aligned to healthcare diagnostics either within a hospital, industry or research setting.

Admissions requirements

There are standard minimum entry requirements for all undergraduate courses. Students are advised to check the standard requirements for the most up-to-date information. For most courses a decision will be made on the basis of your application form alone. However, for some courses the selection process may include an interview to demonstrate your strengths in addition to any formal entry requirements. More information can be found here: https://www.westminster.ac.uk/study/undergraduate/how-to-apply

Recognition of Prior Learning

Applicants with prior certificated or experiential learning at the same level of the qualification for which they wish to apply are advised to visit the following page for further information:

https://www.westminster.ac.uk/current-students/guides-and-policies/student-matters/recognition-of-prior-learning

Aims of the programme

This FdSc Biomedical and Physiological Sciences is suitable for those employed on a full-time or part-time basis as support workers, associate practitioners or technical staff in either a healthcare environment or an associated industry who wish to further their career prospects.

The FdSc Biomedical and Physiological Sciences has been developed in partnership with healthcare employers and is designed to:

- Provide students with a comprehensive, current and relevant programme of study delivered in a rich learning environment that is inclusive, supportive and equitable, enabling and encouraging all students to achieve their individual potential without impediment.
- Provide an appropriate academic and professional qualification for the post currently called Associate Practitioner Healthcare Scientist (National School of Healthcare Science, 2017) employed within the UK National Health Service and the related private sector. It is designed for new entrants to the profession as well as existing practitioners wanting continuing professional development.
- Provide an appropriate academic and professional qualification to those currently employed in technical roles within industries related to human or animal healthcare provision.
- Provide graduates with information regarding legislation and guidelines that relate to healthcare provision in their country of employment.
- Respond to the changing training needs of healthcare science professions by offering a blended learning experience of e-learning, work-based learning and limited block attendance at university.
- Develop the confidence of the graduates so that they can successfully apply, in the workplace, the knowledge and skills developed on this course.
- Equip graduates with the knowledge, understanding and academic skills to progress onto a BSc Honours programme through further study.
- Enable students to contextualise scientific knowledge and opinion within a historical, geographical and cultural framework, referencing current expected standards of equality, diversity and inclusivity.
- Facilitate student personal development planning (PDP) by the inclusion of reflective practice and portfolio production, this can serve the dual purpose of evidence for continuing professional development and professional competency evidence.
- Widen participation and lifelong learning by recruiting such professionals who have not previously studied at an institution of higher education.
- Provide the opportunity for overseas students, for example in sub-Saharan Africa, who are currently working in diagnostic or research laboratories to obtain an internationally recognised qualification by studying a course offered in their own countries.

Employment and further study opportunities

University of Westminster graduates will be able to demonstrate the following five Graduate Attributes:

- Critical and creative thinkers
- Literate and effective communicator
- Entrepreneurial
- Global in outlook and engaged in communities
- Social, ethically and environmentally aware

University of Westminster courses capitalise on the benefits that London as a global city and as a major creative, intellectual and technology hub has to offer for the learning environment and experience of our students.

The development of these graduate attributes is oriented towards employability upon completion of the course and these five attributes are aligned to various Course Learning Outcomes as shown in the table later in this document.

Whilst graduate attributes are acquired through a number of different modules throughout your course, all courses in the School of Life Sciences also have an integrated framework of employability skills at both levels 4 and 5. This framework is intended to enable students to develop key skills which will equip them for career progression and/or further study following graduation. The specific modules for implementing this framework are Professional Development in Science (Level 4) and the work based learning modules, in particular, Delivering Healthcare (Level 5). Along with subject specific knowledge and skills however, other modules in the course also incorporate Key Transferable Skills, which complement the employability skills in this framework and are applicable to a wide range of future careers, further study and many other activities. The key employability related skills students will develop through the course include subject specific skill applicable to the many branches of the life sciences and skills that are transferrable to a variety of scenarios. These include: the ability to critically analyse scientific literature and to discuss and correctly cite those sources; gaining competence in laboratory and other practical/ investigative techniques relevant to your specialism; the ability to process, analyse, interpret and present a variety of data types including the appropriate statistical analysis of that data using a variety of software packages including Microsoft office; teamworking and leadership skills from group work in practical classes/ workshops and group presentation tasks; presentation skills in a variety of formats (e.g. posters, oral presentations, infographics).

Students undertaking the FDSc Biomedical and Physiological Sciences pathway must be in full or part-time employment within an area aligned to healthcare diagnostics either within a hospital, industry or research setting. The credit-bearing work-based learning modules, Practice-Based Learning, Delivering Healthcare and Advanced Practice-Based Learning, inherent in the course complement the training being undertaken in the workplace. Encouraging reflection and the development of a deeper understanding with broader exploration of all aspects of the student's role in the workplace. The content of the work-based learning modules also enables students to explore organisational and national policies and procedures with respect to the influence on their day-to-day activities. The necessity to complete the course work-based learning modules may also provide a opportunity for shadowing or training within a new area to align with module requirements. Within the UK, a level 5 FDSc is an accepted standalone qualification for the Associate Practitioner post.

What will you be expected to achieve?

Learning outcomes are statements on what successful students have achieved as the result of learning. These are threshold statements of achievement the learning outcomes broadly fall into four categories:

- The overall knowledge and understanding you will gain from your course (KU)
- Graduate attributes are characteristics that you will have developed during the duration of your course (GA)
- Professional and personal practice learning outcomes are specific skills that you will be expected to have gained on successful completion of the course (PPP)
- Key transferable skills that you will be expected to have gained on successful completion of the course. (KTS)

Level 4 course learning outcomes: upon completion of Level 4 you will be able to:

- CLO4.1 Evidence a broad understanding of concepts and terminology in biochemistry, molecular biology and genetics, including; structure and function of biomolecules, cellular metabolism, and the structure, function and regulation of genes, Communicate about how understanding in these areas can contribute to sustainable development goals for people and the planet, now and into the future. (KU GA)
- CLO4.2 Demonstrate a broad understanding of concepts and terminology with respect to; prokaryotic and

eukaryotic cell biology and life cycles, biodiversity, natural selection and the evolution of organisms. (KU GA)

- CLO4.3 Use correct terminology to demonstrate broad knowledge and understanding of the of the human body; its component parts and major systems, their structures, functions and controls. (KU GA)
- CLO4.4 Explain the need to establish and maintain a safe and legally compliant practice environment. Demonstrate awareness of governance and of key principles and processes necessary to do so, including relevant parts of ; the Health and Safety at Work Act 1974, the Data Protection Act 2018, the Equality Act 2010, the Human Tissue Act 2004 and the work of the Human Tissue Authority. The correct use of the International System of Units (SI), local quality assurance practice and processes, and external quality and competence standards. (KU GA)
- CLO4.5 Use standard laboratory techniques to safely work with laboratory equipment and reagents. Collect, assess and present simple experimental data, demonstrating expertise in basic numeracy and statistics skills. Evaluate your own strengths and weaknesses in the subjects studied to show professional development. (GA PPP)
- CLO4.6 Evidence knowledge and understanding of; safe sample handling, preparation, staining techniques and the use of microscopy to visualise biological structures. (KU GA)
- CLO4.7 Increase your own knowledge base through the ability to assess the quality of information sources, access library resources, and appropriate online material and undertake simple research tasks. Demonstrate the ability to communicate using various written, oral and audio-visual methods, acknowledging academic standards, professional protocols and a range of audiences. (GA PPP KTS)
- CLO4.8 Effectively work with others on common tasks, demonstrate problem solving and time management skills, the ability to recognise factors affecting team performance and an understanding of the need for self-reflection. Show an awareness of careers in Biosciences and begin professional development practices to enhance employability. (KU GA PPP KTS)
- CLO4.9 Demonstrate the acquisition of specialist knowledge related to the clinical laboratory environment. For example, professional and regulatory body roles and standards, health and safety in the workplace, equipment maintenance and use, quality assurance procedures and processes, service provision communications, information governance as applicable to healthcare settings. (KU GA PPP KTS)

Level 5 course learning outcomes: upon completion of Level 5 you will be able to:

- CLO5.1 Evidence detailed knowledge of microorganism biodiversity, host-pathogen interactions at molecular, organismal and population levels, body response mechanisms and how they affect human health. (KU GA)
- CLO5.2 Evidence detailed understanding of the complex processes and events leading to human diseases and the principles of a system-led approach to the study of disease and its treatment. (KU GA)
- CLO5.3 Demonstrate high level understanding of human genetics and patterns of inheritance. Outline methods of genetic testing and screening. Reflect upon best practice to capitalise upon diversity, support equality and inclusion, and acknowledge the ethical and social implications of current and historic scientific research and publication. In turn, appreciate the value of drawing upon diverse approaches and perspectives to achieve goals. (KU GA)
- CLO5.4 Demonstrate a detailed knowledge of disease mechanisms involved in regulation of homeostasis; causes and consequences of pathological conditions which affect human wellbeing. (KU GA)
- CLO5.5 Evidence awareness of current UK legislations, British, European and International Standards that govern and effect pathology and biomedical laboratory practice, the importance and ability to maintain confidentiality and to obtain informed consent. (GA PPP)
- CLO5.6 Devise and perform experiments to provide new information, evaluate experimental methods for investigation in biomedical sciences, select appropriate statistical methods, use relevant software packages and evaluate their application to experimental data. (KU GA PPP)
- CLO5.7 Effectively manage your own learning strategy in the biomedical sciences, making effective and critical use of the variety of resources available and be able to access and use scientific literature, including electronic databases. (KU GA PPP KTS)
- CLO5.8 Demonstrate the acquisition of specialist knowledge related to the clinical laboratory environment. For example, aligning the pathophysiology of a named disease with local diagnostic testing, basic troubleshooting of internal quality control failures, local multidisciplinary team meetings, the formatting and review of local standard operating procedures, communication strategies for selected workplace scenarios. (KU GA PPP KTS)

How will you learn?

Learning methods

You will be encouraged to become self-motivated and independent learners. The curriculum has been designed to meet the professional needs of healthcare practitioners who are both working and learning in an ever changing professional environment. The course acknowledges your professional requirements to manage your personal development and career planning. The course offers blended learning: the majority of the modules will be delivered in our virtual learning environment, Blackboard, where emphasis will be placed on encouraging you to communicate with each other, as well as with tutors, to develop and sustain a learning community during your studies. It is also planned to involve your workplaces as part of your learning experience. In three modules, the content is integrated with requirements placed upon you as part of your career progression. You will require between 12 and 20 hours of study per academic calendar week to meet the course requirements.

The School of Life Sciences is committed to the University of Westminster Equality, Diversity and Inclusion (EDI) policy with a local implementation based on three central elements:

- ***Our commitment*** *is to ensure an inclusive, safe and supportive learning, working and social environment which enables scientific research and teaching to flourish and encourages our future scientists to grow and realise their true potential.*
- ***Our goal*** *is to empower all students and staff to critically reflect on their understanding and positionality, with respect to the wide-ranging global scientific perspectives (past and present); encouraging the open debate of differing points of view.*
- ***Our pledge*** *is to respect and value our diverse Life Sciences community (within and beyond the University of Westminster) and foster an equitable culture as we move forward in the field.*

These three elements inform and direct all of our learning, teaching and research activities and have been central to our course design process as can be seen in the learning outcomes at module and course level. All staff and students in the school of Life Sciences are expected to embrace and respect these values.

Teaching methods

There are two main teaching approaches employed for the course: e-learning delivered through Blackboard and work-based learning. Academic staff with expertise in online learning have been involved at all times in the development of e-learning materials and will also play a key role in maintaining accessibility of teaching materials in Blackboard for you.

Work-based learning will involve the relevant module leader, a work-based tutor and yourself working together to ensure that you receive appropriate support and development opportunities. This will ensure the relevant module teaching can respond to your changing professional needs throughout the course. It will also facilitate input of employers into the teaching and assessment of the FdSc Biomedical and Physiological Sciences. Technical skills from your employment can be evidenced in the work-based learning modules.

Assessment methods

Assessment has been planned as an integral part of the learning process, ensuring achievement of specific learning outcomes. Where modules are the same in content as those taught to first and second year undergraduate life science students attending the University, the same assessment strategy will be followed. A range of assessment methods are employed including online presentations, practical reports, essays and multiple choice questions. For modules unique to this course i.e. Practice-based Learning, Advanced Practice-based Learning and Delivering Healthcare the assessment strategy will ensure linkage with your requirements for the development of skills and knowledge required for your workplace roles.

The Practice-based Learning modules will offer a flexible approach in that the pre-determined assessments will be completed in a timely manner to align with your workplace training rotation. The underpinning knowledge required for these modules will be provided within the subject specific modules and Delivering Healthcare.

Formative feedback is also given throughout modules in tutorials, group discussions, and in the laboratory practical sessions. It is designed to inform you of areas for improvement, and of current strengths which are to be nurtured and developed.

Graduate Attribute	Evident in Course Outcomes
Critical and creative thinker	CLO4.1, CLO4.5, CLO4.7, CLO4.9, CLO5.3, CLO5.6, CLO5.7
Literate and effective communicator	CLO4.1, CLO4.2, CLO4.3, CLO4.6, CLO4.7, CLO4.8, CLO4.9, CLO5.1, CLO5.2, CLO5.5, CLO5.6, CLO5.7, CLO5.8
Entrepreneurial	
Global in outlook and engaged in communities	CLO4.1, CLO4.4, CLO4.8, CLO4.9, CLO5.3, CLO5.5, CLO5.8
Socially, ethically and environmentally aware	CLO4.1, CLO4.2, CLO4.9, CLO5.3, CLO5.4, CLO5.7, CLO5.8

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. Course structures can be subject to change each academic year following feedback from a variety of sources.

Modules are described as:

- **Core** modules are compulsory and must be undertaken by all students on the course.
- **Option** modules give you a choice of modules and are normally related to your subject area.
- **Electives**: are modules from across the either the whole University or your College. Such modules allow you to broaden your academic experience. For example, where electives are indicated you may choose to commence the study of a foreign language alongside your course modules (and take this through to the final year), thereby adding further value to your degree.
- Additional information may also be included above each level for example where you must choose one of two specific modules.

Modules

Level 4

Module Code	Module Title	Status	PT Year (where applicable)	UK credit	ECTS
4BIOM005W	Professional Development in Science (DL Version)	Core		20	10
4BIOL002D	Cell Biology	Core	1	20	10
4PHYM001D	Human Physiology	Core	1	20	10
4BIOM002D	Practice-Based Learning	Core	1	20	10
4BICH001D	Biochemistry	Core	2	20	10
4BIOM004D	Functional Anatomy	Core	2	20	10

Level 5

Module Code	Module Title	Status	PT Year (where applicable)	UK credit	ECTS
5BIOM007D	Applied Pathobiology	Core	2	20	10
5HMDS002D	Delivering Healthcare	Core	2	20	10
5BIOM006D	Advanced Practice-Based Learning	Core	3	40	20
5BIOM008D	Infection and Immunity	Core	3	20	10
5BIOM001D	Medical Genetics and Genomics	Core	3	20	10

Please note: Not all option modules will necessarily be offered in any one year. In addition, timetabling and limited spaces may mean you cannot register for your first choice of option modules.

Professional body accreditation or other external references

The FdSc Biomedical and Physiological Sciences is approved by the Institute of Biomedical Science (IBMS), the professional body for biomedical scientists. This approval is a process of peer review and recognition by the profession of the achievement of quality standards for delivering the FdSc Biomedical and Physiological Sciences programme which conforms to part (L4 & L5) of the QAA subject benchmark statement for biomedical science (October 2019). It also confirms that the course offers industry focused and professionally oriented learning, high quality work experience, and maintains engagement with its graduates as they develop their careers.

Course management

Your course is one of a number of programmes in the School of Life Sciences, part of the College of Liberal Arts and Sciences within the University of Westminster, and is managed by a designated course leader. In addition to the course specific role of the course leader, the Head of School, other senior school staff and the Associate Heads of College, also provide support and management at their respective levels. The course leader is also collectively supported in the management and running of the course by the course teaching team through their responsibilities for individual modules and contributions to planning. You will meet your course leader, teaching team and members of the school senior management during arrivals week, a programme of events designed to help you with enrolment, registration, and orientation to the university, its processes and the culture of higher education.

The course is monitored each year by the course leader and senior members of the School and College to ensure that it is running effectively and that issues that might affect the student experience have been appropriately addressed. Each course will have Course Representative meetings throughout the year and staff will consider the outcomes from these meetings, evidence of student progression and achievement and the external examiner's reports to evaluate the effectiveness of the course. All courses are reviewed annually as part of the School, College and University Annual Monitoring processes, reporting finally to the Academic Council of the University which has overall responsibility for the maintenance of quality and standards in the University.

Academic regulations

The current Handbook of Academic Regulations is available at westminster.ac.uk/academic-regulations.

Course specific regulations apply to some courses.

Academic Support

Upon arrival, an induction programme will introduce you to the staff responsible for the course, the campus on which you will be studying, the Library and IT facilities, additional support available and to your Campus Registry. You will be provided with the Course Handbook, which provides detailed information about the course. Each course has a course leader or Director of Studies. All students enrolled on a full-time course and part time students registered for more than 60 credits a year have a personal tutor, who provides advice and guidance on academic matters. 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. Further information on Blackboard can be found at https://www.westminster.ac.uk/current-students/studies/your-student-journey/when-you-arrive/blackboard

The Academic Learning Development Centre supports students in developing the skills required for higher education. As well as online resources in Blackboard, students have the opportunity to attend Study Skills workshops and one to one appointments. Further information on the Academic Learning Development Centre can be found at westminster.ac.uk/academic-learning-development.

Learning support includes four libraries, each holding a collection of resources related to the subjects taught at that site. Students1 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 in their College. Students can also securely connect their own laptops and mobile devices to the University wireless network.

Support Services

The University of Westminster Student and Academic Services department provide advice and guidance on accommodation, financial and legal matters, personal counselling, health and disability issues, careers, specialist advice for international students and the chaplaincy providing multi-faith guidance. Further information on the advice available to students can be found at https://www.westminster.ac.uk/student-advice

The University of Westminster Students' Union also provides a range of facilities to support students during their time at the University. Further information on UWSU can be found at https://www.westminster.ac.uk/students-union

How do we ensure the quality of our courses and continuous improvement?

The course was initially approved by a University Validation Panel. University Panels normally include internal peers from

the University, academic(s) from another university. a representative from industry and a Student Advisor.

The course is also monitored each year by the College 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 evidence of student surveys, student progression and achievement and reports from external examiners, in order to evaluate the effectiveness of the course and make changes where necessary.

A Course revalidation takes place periodically to ensure that the curriculum is up-to-date and that the skills gained on the course continue to be relevant to employers. Students meet with revalidation panels to provide feedback on their experiences. Student feedback from previous years is also part of the evidence used to assess how the course has been running.

How do we act on student feedback?

Student feedback is important to the University and student views are taken seriously. Student feedback is gathered in a variety of ways.

- Through student engagement activities at Course/Module level, students have the opportunity to express their voice in the running of their course. Course representatives are elected to expressly represent the views of their peers. The University and the Students' Union work together to provide a full induction to the role of the course representatives.
- There are also School Representatives appointed jointly by the University and the Students' Union who meet with senior School staff to discuss wider issues affecting student experience across the School. Student representatives are also represented on key College and University committees.;
- All students are invited to complete a 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.
- Final year Undergraduate students will be asked to complete the National Student Survey which helps to inform the national university league tables.

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 they take full advantage of the learning opportunities that are provided. This specification is supplemented by the Course Handbook, Module proforma and Module Handbooks provided to students.

Additional Details

Course Induction

New starters on the Foundation Degree in Biomedical and Physiological Sciences participate in a single day online induction plus follow up activities that will equip them with the necessary information and information technology skills to enable successful study on the course. By the end of the Induction students will know:

- Their course leader and members of the course team
- Who to go to for advice, guidance and support
- The purpose and organisation of the Course Forums
- The structure of the course and what they can expect to gain from it
- Explanation of key terminology associated with study in higher education
- The organisation and use of Blackboard for the course
- How to access University e-mails and practice at sending an email via the University system
- How to access and use Blackboard with live practice sessions for disussion boards, online tests and coursework submission.
- How to access Service Desk support if experiencing problems with Blackboard or e-mail access
- How to use the electronic University of Westminster Library functions
- Specific details of the course timetable.

The students will be able to continue with practice activities post Induction to enable confident access and correct use of all the course learning resources.

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