UNIVERSITY OF
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WESTMINSTER⌗

PROGRAMME SPECIFICATION

Course record information

Name and level of final award	**MSc Applied Biotechnology** The MSc. Applied Biotechnology is a postgraduate degree that is Bologna FQ-EHEA second cycle degree or diploma compatible.
Name and level of intermediate awards	Postgraduate Diploma Applied Biotechnology Postgraduate Certificate Applied Biotechnology
Awarding body/institution	University of Westminster
Teaching Institution	University of Westminster
Status of awarding body/institution	Recognised Body
Location of delivery	Cavendish Campus
Language of delivery and assessment	English
Mode, length of study and normal starting month	One year full time, two years part time day. September start.
QAA subject benchmarking group(s)	N/A
Professional statutory or regulatory body	N/A
Date of course validation/Revalidation	April 2019
Date of programme specification approval	June 2019
Valid for cohorts	from 2019/20
Course Leader	Dr. Godfrey Kyazze
Course URL	westminster.ac.uk/courses/postgraduate
Westminster course code	PMBIO01F (FT) PMBIO01P (PT)
HECoS code	100134
UKPASS code	

Admissions requirements

There are standard minimum [entry requirements](#) for all postgraduate 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: westminster.ac.uk/courses/postgraduate/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: westminster.ac.uk/recognition-of-prior-certified-learning.

Aims of the course

The MSc. Applied Biotechnology has been designed to produce graduates who have the understanding, knowledge, skills and practical experience in the field of applied biotechnology to enable them to become professionals capable of making important contributions as required by the biosciences sector. It also aims to enable students to understand the research process at postgraduate level and to apply this knowledge to research and problem solving in the field of Applied Biotechnology. Students will be able to explore specialist subject interests in Applied Biotechnology through their option module choices and develop the transferable qualities and skills required for employment or research in the biosciences sector.

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.

Graduates from the MSc Applied Biotechnology normally find employment in the biotechnology industry e.g. in upstream/downstream processing, Quality Assurance, Quality Control, Microbiology, Technology Transfer, Research and Development, and Regulatory Affairs. Some may continue their academic career to PhD Degree.

Course learning outcomes

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

Knowledge and understanding (KU)

On successful completion of the course, students will be able to:
- Demonstrate a detailed knowledge and understanding of the principles and applications of Biotechnology.
- Have developed competence, confidence and an enquiring investigative approach.
- Integrate information from diverse sources relevant to Applied Biotechnology.
- Critically discuss the principles and current trends in molecular biology e.g. 'omics, synthetic biology, genome editing etc.
- Demonstrate a deep understanding of the application of established and emerging molecular biology techniques to diverse areas of biotechnology
- Critically discuss industrial practice in the production, using microbes or mammalian cells, of pharmaceuticals, foodstuffs, healthcare and agricultural products, covering commercial matters and the importance of patenting intellectual property;
- Assess and evaluate biotechnology processes with regards to their impact on business practices; issues relevant and important to industrial practices such as commercial exploitation of scientific ideas; regulations, industrial safety and funding sources; business opportunities in biotechnology;

Specific skills (SS)

On successful completion of the course, students will be able to:
- operate small-scale and large-scale fermenters and evaluate their operation;
- critically discuss the design and operation of bioreactors, "Good Manufacturing Practice" and quality issues;
- critically discuss upstream processing necessities and preparations for different types of fermenters and fermentations;
- discuss how a large scale bioprocess industry operates based on an industrial visit;
- critically examine current issues such as patents and data protection as they relate to biotechnology;
- implement an action plan, monitor and evaluate progress against specific criteria;
- devise, perform and evaluate experimental methods for investigation in Biotechnology;
- utilize hands-on experience to use and critically evaluate a range of biotechnology applications;
- critically analyse selected biotechnology problems at the place of work;
- examine safety aspects and assess risk associated with the bio-sector;
- reflect critically on the relationship between theory and practice;
- devise, organise and conduct an independent research project

Key transferable skills (KTS)

On successful completion of the course, students will be able to:
- work effectively with a group as a leader or member, to produce team seminars

- use a full range of learning resources in making literature searches via the library, PubMed and other reputable internet sources, and in using on-line teaching material, word processors, spreadsheets, and databases;
- show self-evaluation skills, reflecting on their own and others' functioning via coursework feedback, project reports, critical reviews of scientific articles and peer evaluation;
- manage information effectively by competently undertaking research tasks and compiling reviews and discussion essays;
- show autonomy by acting as an independent and self-critical learner, managing requirements and undertaking research tasks with minimum guidance;
- communicate effectively by means of oral, written and poster presentations, using print and electronic resources, reporting information, ideas and actions clearly, autonomously and competently;
- demonstrate problem solving skills by interpreting data, designing and carrying out projects and experimental work, and making professional use of others where appropriate.

Learning, teaching and assessment methods

Learning: The university views the student as being at the centre of the learning process and students are expected to take responsibility for their own learning, to further develop skills acquired at undergraduate or professional level and to construct knowledge through active engagement with learning resources provided, university staff and their peers.

Teaching: A variety of teaching methods and approaches are utilized throughout the course, including formal lectures, practical sessions, tutorials (student-centred learning activities), poster presentations and oral presentations. These combined teaching approaches aim to improve both students' knowledge of Biotechnology, as well as helping to develop their critical faculties through an experiential approach. In addition, the key communication skills required by any professional scientist are developed throughout the course. Teaching methods are flexible and make use of a variety of media. Data projectors are present in all lecture and tutorial rooms attached to a fixed PC but with the option for lecturers to attach their own laptop if preferred. All rooms are also equipped with visualisers and whiteboards to allow a variety of interactive teaching styles. The University is also equipped with the Blackboard Virtual Learning Environment (VLE) which functions both at a course and modular level with every course and module having a dedicated Blackboard site, all accessible from the user's homepage. Module Blackboard sites acts as a focal point for interaction between staff and students away from the classroom environment. They contain administrative and teaching content for the module, allow students to participate in learning activities and interact with staff and their peers in open discussion fora. Blackboard is also used to manage the online submission of coursework, plagiarism checking and return of student marks via the grade centre, improving the flexibility of student access and learning.

Assessment: Each module in the programme has its own aims and teaching, learning and assessment methods that have been set up to facilitate its learning outcomes. Module assessment is typically either on the basis of 50% examination and 50% coursework, or else 100% coursework. Assessment methods are varied and include essays, practical reports, oral presentations, short articles (e.g. newspaper articles)

Course structure

This section shows the core and option modules available as part of the course and their credit value. Full-time Postgraduate students study 180 credits per year.

Credit Level 7				
Module code	**Module title**	**Status**	**UK Credit**	**ECTS**
7BIOM039W	Advanced Molecular Biology	Core	20	10
7BIOL001W	Fermentation Technology	Core	20	10
7BIOT002W	Industrial and Environmental Biotechnology	Core	20	10
Award of Postgraduate Certificate available				
Module code	**Module title**	**Status**	**UK credit**	**ECTS**
7BIOT004W	Science, Technology and Commercialisation	Core	20	10
Plus any two of the modules shown below				
7BIOM041W	Bioinformatics	Option	20	10
7HMDS002W	Communicating Science	Option	20	10
7PHYM011W	Introduction to Pharmacology and Drug Development	Option	20	10
7BIOM025W	Molecular and Cellular Therapeutics	Option	20	10
7BIOM036W	Regenerative Medicine	Option	20	10
7BIOM037W	Systems Biology	Option	20	10
Award of Postgraduate Diploma available				
Module code	**Module title**	**Status**	**UK credit**	**ECTS**
7BIOM033W	Postgraduate Research Methods	Core	20	10
7BIOM032W	Postgraduate Project	Core	40	20
Note: 7BIOM032W may be exchanged for a 60 credit Extended Postgraduate Project (7BIOM016) (with prior agreement of course leader and proposed project supervisor) in which case only one 20 credit level 7 option module will be taken.				
Award of MSc available				

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

Professional Body Accreditation or other external references

There is no specific professional, statutory or regulatory body for the biotechnology industry but the development of this course has been informed by the recently released UK Bioeconomy strategy "Growing the Bioeconomy" (HM Government, 2018). The broad aim of this strategy is to foster UK economic development and improve lives by harnessing the power of biotechnology and synthetic biology and this is reflected in the aims and learning outcomes of this course.

Academic regulations

The current Handbook of Academic Regulations is available at westminster.ac.uk/academic-regulations. In some cases course specific regulations may be applicable.

How will you be supported in your studies?

Course Management

The management structure supporting the course is as follows:
- The Course leader is responsible for day to day running and overall management of the course and development of the curriculum.
- The Course Leader is supported by the Director of Learning, Teaching and Quality for the School of Life Sciences who is responsible for the development of the courses and learning environment within the School and maintaining academic standards.
- The Head of the School of Life Sciences, holds overall responsibility for all the courses run by the School of Life Sciences and management of staff and facilities within the School.
- The School of Life Sciences is part of the College of Liberal Arts and Sciences within the University of Westminster.

The management structure is further supported by the Course Team. Its membership is as follows:
- A Course Leader and Deputy Course Leader
- The full-time staff teaching on the course, including Module Leaders and representatives of all major subject areas
- Visiting lecturers and outside advisors, where appropriate.

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 westminster.ac.uk/blackboard.

Learning Support

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. Students[1] 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 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 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 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 in 2014. The panel included internal peers from the University, academic(s) from another university and a representative from industry. This helps to ensure the comparability of the course to those offered in other universities and the relevance to employers.

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 evidence of student achievement, reports from external examiners in order to evaluate the effectiveness of the course.

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.

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[1] Students enrolled at Collaborative partners may have differing access due to licence agreements.

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. Student 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 student representatives.
- There are also School Staff Student Exchange meetings that enable wider discussions 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.
- The University also has an annual Postgraduate Taught Experience Survey or PTES which helps us compare how we are doing with other institutions, to make changes that will improve what we do in future and to keep doing the things that you value.