



Postgraduate Programme Specification

Session	2025/26	Last Modified	04/11/24
Named Award Title	MSc Advanced Biomedical Science		
Award Title for Each Award	MSc Advanced Biomedical Science PG Dip Advanced Biomedical Science PG Cert Advanced Biomedical Science		
Date of Approval	February 2022		
Details of Cohort Applies to	All those entering Level 11 September 2022		
Awarding Institution	University of the West of Scotland	Teaching Institution(s)	University of the West of Scotland
Language of Instruction & Examination		English	
Award Accredited by		Institute of Biomedical Science	
Maximum Period of Registration		All assessments, re-assessments and re attendance for a module must occur within 2 years of taking the module. A period of authorised interruption shall be discounted from the two-year assessment period.	
Duration of Study			
Full-time	1 year	Part-time	2 years
Placement (compulsory)	No		
Mode of Study	<input checked="" type="checkbox"/> Full-time <input checked="" type="checkbox"/> Part-time		
Campus	<input type="checkbox"/> Ayr <input type="checkbox"/> Dumfries	<input checked="" type="checkbox"/> Lanarkshire <input type="checkbox"/> London <input type="checkbox"/> Paisley	<input checked="" type="checkbox"/> Online / Distance Learning <input type="checkbox"/> Other (specify)
School	Health and Life Sciences		
Divisional Programme Board	Biological Sciences Health		
Programme Leader	Andrew MacKenzie		

Admissions Criteria

Candidates must be able to satisfy the general admission requirements of the University of the West of Scotland as specified in Chapter 2 of the University Regulatory Framework together with the following programme requirements:

Appropriate Undergraduate Qualifications:

Applicants will typically possess a degree or equivalent. In the absence of a degree, where entry requirements do not conform to the general entry requirements, other evidence can be considered on an individual basis in line with Regulations 2.13 – 2.36 (Recognition of Prior Learning – RPL / Recognition of Credit).

Applicants must have gained a second-class BSc in Biomedical Science, Bioscience or a related science degree e.g. Biology, Anatomy, Genetics, Physiology, etc.

Other Required Qualifications/Experience

Applicants may also be considered with other academic, vocational or professional qualifications deemed to be equivalent. E.g. Ordinary degree with 3 years working as an Medical Laboratory Assistant. Entry decisions is made on a case-by-case basis

Further desirable skills pre-application

In order to meet IBMS criteria applicants whose first language is not English should have attained the equivalent of an IELTS score of at least 7.0 (with no component less than 6.5). Information on other English language test scores is available from Admissions

General Overview

The MSc Advanced Biomedical Science is an innovative programme designed to provide advanced training in the biomedical sciences. The focus of the programme is the application of research technologies to the biomedical sciences with an emphasis on ensuring that students develop advanced knowledge and skills which can be applied in research, biological sciences and NHS laboratories.

The course is designed to complement current initiatives within the healthcare sector which place considerable emphasis on attaining diagnostic excellence, maintaining continued professional development (CPD) and developing an evidence-based approach to professional practice. This necessitates a focused and positive attitude towards research and development, providing the opportunity for health professions to undertake better-informed practice but requiring development of new skills such as effective literature searching and critical appraisal. This course aims to support this development by providing enhancement to the research technology knowledge-base and through this providing the advanced knowledge and skills which will ultimately produce improvements to research, diagnosis and monitoring of disease pathology, core to the biomedical sciences. Students will have the opportunity to study the latest research technologies and apply them to their chosen specialist area of interest or pathology with a programme that is designed to not only be vocationally relevant by providing the latest advancements in research within biomedical science, but also in consideration of personal development too.

Candidates will normally apply from the following categories and there shall be slight deviations in modules and delivery approaches depending on the stream relevant to the individual:

Stream A: students who are UK-based registered biomedical scientists (or on a clear path to becoming a registered biomedical scientist i.e. employed for duration of MSc by an appropriate healthcare provider, most commonly an NHS IBMS-approved training site).

Stream B: students who have an IBMS-accredited undergraduate degree.

Stream C: students who have an undergraduate degree not-accredited by IBMS.

The programme is delivered at the Lanarkshire campus and is available as a distance learning (DL) option for Stream A students only (i.e. a modular pathway exists to allow a fully online version of the programme for Stream A students). Such students must ensure that they have sufficient IT facilities and infrastructure to undertake modules fully online. Those who opt for a distance learning route should avoid Advanced Laboratory Techniques module (which is taught on-campus only). Stream A students are welcome to undertake the whole programme on campus if they wish.

The full time MSc programme will consist of six taught modules over two terms and a research project undertaken in the third term. Modules include subject areas in Clinical Immunology, Genetic Analysis in Biomedical Science, Disease: Detection, Monitoring and Therapy, Biomedical Science Quality Management, and Advanced Laboratory Techniques. Some students also have the option to undertake modules in statistics, service quality and management, which are of considerable importance in biomedical science and allied fields. Completion of these modules along with the Research Design module and Masters Research Project module will provide students with a strong ability to bridge research theory with application in emerging fields of biomedical research.

The course is designed primarily for students who have an Honours BSc in Biomedical Science or appropriate biology related field with the title of the degree reflecting the primary aim of providing candidates with the high levels of knowledge and skills required to gain or advance employment within biomedical science. In addition, it is designed to create research opportunities and transferable skills which are beneficial to all. The MSc Advanced Biomedical Science is part of a long-term strategy to enhance health-related research and teaching within the School of Health and Life Sciences and complements the current Honours BSc in Biomedical Science.

Completion of this MSc will provide an advanced knowledge and skills base in research technologies that would greatly enhance the potential of any student to progress to a research PhD.

The award of Advanced Biomedical Science (at either MSc, PG Dip, PD Cert) is dependent on the completion of the criteria provided below.

Typical Delivery Method

The teaching and learning strategies adopted for the MSc Advanced Biomedical Science are designed to provide students with the necessary subject knowledge, understanding, abilities and skills for the biomedical science profession. A variety of teaching methods will be used to ensure that students remain engaged, motivated and challenged to learn. Advanced Biomedical Science at post-graduate level is amenable to a wide range of teaching methodologies. This will include enquiry-based learning, critical thinking, data analysis, directed learning and problem solving. There will be strong linkages with research throughout the course, for example through attending research seminars from guest speakers and UWS staff, and through conducting the Masters Research Project. The VLE used by UWS will facilitate many of these approaches for personal development planning (PDP) or making data sets available for analysis. VLE will also allow some flexibility in the pace of study for students for example in the use of self-learning materials, pre-recorded mini-lectures, self-assessment tests, etc. Skills of independent learning, planning, lab working, team-working, data analysis

and communication will all be attained during the successful completion of the programme. The biomedical science profession requires graduates who are safe and competent workers, and such aptitudes will be advanced in several modules.

The teaching methods aim to meet the learning outcomes for the course, the individual modules and the needs of students. They cover the range of abilities that would be expected from an MSc graduate in the biomedical sciences and allow flexible and student-centred teaching. Cognisance was taken of the QM Subject Benchmark statements for Biomedical Science (2023) and SCQF level descriptors which describes the general expectations of the attributes and capabilities that can be expected at Master's level. The procedures that will be used for assessment will correspond to the knowledge, abilities and skills that are to be developed through the programme. Evidence on which the assessment of student achievement will be based includes problem-solving exercises, case studies, critical reviews, presentations, and the planning, conduct and reporting of project work. As this is a course at Master's level, it is important that students are required to apply their knowledge to generate solutions to unfamiliar problems. Assessment of the research project will be crucial in determining whether Master's level learning outcomes have been achieved. Full academic engagement will be expected (further guidance can be found in relevant sections of the University Regulatory Framework).

Any additional costs

Students must have sufficient ICT equipment and to engage with VLE and assessment submissions. This is particularly important for distance learning students who will not access ICT equipment on campus.

Students will have to meet costs of suitable PPE for laboratory work (e.g. lab coats, safety glasses, or other equipment directed by UWS staff).

Graduate Attributes, Employability & Personal Development Planning

The development of UWS graduate attributes is embedded throughout the programme. Our aim is to provide students at UWS with opportunities to develop academically, professionally and personally: to broaden their ambitions, extend their attitudes, challenge their assumptions, and assist towards unlocking their potential to succeed in their studies and future lives.

Critical Thinker The ability to evaluate yourself and your own thinking; assessing and evaluating complex information from different sources, challenging and questioning presented knowledge and facts, drawing reflective conclusions and articulating knowledge. Thinking reflectively and logically, being able to explain your thought processes, forming your own conclusions, constructing coherent arguments and taking actions based on your own thinking and relevant information.

Ethically-Minded Understanding ethical principles, awareness and appreciation of the values and beliefs of others in relation to own actions. Knowledge of moral decisions; respect for other people's beliefs and the environment; being non-judgmental.

Collaborative Ability to work with a range of people, receptive to others' views and working well with others to reach shared goals. Being a good communicator, open-minded, flexible, empathetic, a good listener, and pro- active.

Autonomous Taking responsibility for own actions to help become an independent learner. Applying learning and knowledge outwith university, having confidence in self, taking

responsibility for own actions and making informed decisions. Self-directed, disciplined, using initiative and being self-motivated.

Resilient The ability to weather challenges and setbacks, utilising adversity to build new skills and support others in the future. Being determined, motivated, self-confident and demonstrating will-power. Not fearing failure.

Driven Ambitious; highly motivated to achieve desired outcome; focussed. A willingness to work hard; committed to achieving objectives; highly engaged with self-determination. Pushing personal boundaries and having the confidence to gain new experience.

Problem Solver Identifying what the problems are, including both what is known and what is unknown. Showing the application of knowledge to problematic situations/issues and evaluating a range of creative options; Identifying a problem and then finding solutions. Ability to be creative and knowledgeable enough to ask the right questions and to step up to take ownership of tasks/activities.

Effective Communicator To adapt what you are communicating to a specific audience. Communicating effectively to present ideas, discuss, persuade, negotiate, debate and challenge. Possessing skills to communicate verbally and non-verbally in an engaging and articulate manner. Listening.

Students will be supported in accordance with the Personal Development Planning and Policy Framework of the University. Personal Development Planning is embedded within the programme with links to each module. PDP will be introduced at the beginning of the programme and will be supported with regular workshops for the class. A range of coursework exercises will be identified and used to give students the opportunity to reflect upon their performance and plan for the next cycle of PDP.

Employability skills will be built into the programme at a variety of times in many different ways. Research methods used in biomedical sciences will be a frequent theme of examples in class and in the laboratory exercises. Generic skills that are transferable to many fields of employment are embedded throughout the programme and are listed in some detail in the module descriptors.

The Employability Link is a new resource for students which will play an important part in our employability planning. It provides integrated service to students and staff and employers to encourage links between them. Services include advice and support on career planning, graduate recruitment, placement, part time work, summer jobs and volunteering.

Work Based Learning/Placement Details

The opportunity to complete the Masters Research Project in an approved Health service laboratory may be available to students who are employed at that location. The suitability of work-based projects, along with ethical considerations, must be discussed and agreed with the programme leader or module co-ordinator in advance of project work being undertaken. Two work-based Learning modules are also available to students who are employed in an approved training laboratory and who have an IBMS Specialist Portfolio. Students who will have their portfolio verified early within the term of the module may also be considered to the work-based learning modules. This learning arrangement will need all three of the parties involved (placement provider, student and University) to accept specific responsibilities during the verification period and so a Work-Based Learning Partnership Agreement will be used for each individual student placement.

Attendance and Engagement

In line with the [Student Attendance and Engagement Procedure](#), Students are academically engaged if they are regularly attending and participating in timetabled on-campus and online teaching sessions, asynchronous online learning activities, course-related learning resources, and complete assessments and submit these on time.

For the purposes of this programme, academic engagement equates to the following:

Attendance at campus sessions (lectures, tutorials and practicals, etc) and online synchronous sessions, completion of asynchronous activities, and submission of assessments to meet the learning outcomes of the modules.

Attendance on campus or for online synchronous sessions is not typically required for students undertaking the distance learning version of the programme. Some modules may require distance learning students to engage with activities within time limited windows.

Equality and Diversity

The University's Equality, Diversity and Human Rights Procedure can be accessed at the following link: [UWS Equality, Diversity and Human Rights Code](#).

In line with current legislation (Equality Act, 2010) and the UWS Equality, Diversity, and Human Rights Code, our modules are accessible and inclusive, with reasonable adjustment for different needs where appropriate. Module materials comply with University guidance on inclusive learning and teaching, and specialist assistive equipment, support provision and adjustment to assessment practice will be made in accordance with UWS policy and regulations. Where modules require practical and/or laboratory-based learning or assessment required to meet accrediting body requirements the University will make reasonable adjustment such as adjustable height benches or assistance of a 'buddy' or helper.

Programme structures and requirements, SCQF level, term, module name and code, credits and awards ([Chapter 1, Regulatory Framework](#))

Learning Outcomes

SCQF LEVEL 11 - Postgraduate Certificate (PgCert)	
Learning Outcomes	
Knowledge and Understanding	
A1	Have a comprehensive understanding of key scientific principles underpinning the biomedical sciences and have developed a systemic knowledge of core cellular and molecular processes underlying health and disease.
A2	Demonstrate an advanced knowledge of at least one core pathology specialism of biomedical science.
A3	Acquire, organise and critically analyse information relating to current issues in the biomedical sciences.
A4	
A5	
Practice - Applied Knowledge and Understanding	
B1	Demonstrate a critical awareness of a range of laboratory techniques used in the biomedical sciences and a selection of techniques used to analyse laboratory data.
B2	
B3	
B4	
B5	
Communication, ICT and Numeracy Skills	
C1	Communicate effectively at an appropriate professional level utilizing information technology and a range of approaches.
C2	Effectively utilise library and computer resources to access and search for information in specified areas from a range of sources, evaluating this information to draw reasoned conclusions.
C3	
C4	
C5	
Generic Cognitive Skills - Problem Solving, Analysis, Evaluation	
D1	Utilise library, computer and other resources to acquire, apply and disseminate scientific knowledge in reports, presentations, coursework and examinations.
D2	
D3	
D4	
D5	
Autonomy, Accountability and Working with Others	
E1	Take responsibility for own work and for utilising a significant range of resources.

Note: neither the Masters Research Project (BIOL11005) nor Work-based Learning modules (BIOL11015/BIOL11016) form part of the PGCert.

Distance learning versions of BIOL modules (except Advanced Laboratory Techniques, which requires on-campus attendance) are available only to Stream A students.

*QUAL11002 Statistical Quality Control and QUAL11008 Service Quality are only available for Distance Learning.

Level 11- Postgraduate Certificate (PgCert)

Criteria for Award

Please refer to [UWS Regulatory Framework](#) for related regulations

In line with UWS Regulatory Framework, for the award of a PgCert Advanced Biomedical Science, students must complete at least 60 credits of which a minimum of 40 are at least level 11 and none below level 10. Core modules must be completed.

SCQF LEVEL 11 - Postgraduate Diploma (PgDip) Learning Outcomes	
Knowledge and Understanding	
A1	Have a comprehensive understanding of key scientific principles underpinning the biomedical sciences and have developed a systemic knowledge of core cellular and molecular processes underlying health and disease.
A2	Demonstrate an advanced knowledge of at least one core pathology specialism of biomedical science.
A3	Acquire, organise and critically analyse information relating to current issues in the biomedical sciences.
A4	Critical awareness of principles relating to scientific integrity and ethical issues in biomedical science.
A5	
Practice - Applied Knowledge and Understanding	
B1	Demonstrate a critical awareness of a range of laboratory techniques used in the biomedical sciences and a selection of techniques used to analyse laboratory data.
B2	Apply critical analysis, evaluation and synthesis to issues which are at the forefront of biomedical science research.
B3	
B4	
B5	
Communication, ICT and Numeracy Skills	
C1	Communicate effectively at an appropriate professional level utilizing information technology and a range of approaches.
C2	Effectively utilise library and computer resources to access and search for information in specified areas from a range of sources, evaluating this information to draw reasoned conclusions.
C3	Apply appropriate statistical methods to scientific data.
C4	
C5	
Generic Cognitive Skills - Problem Solving, Analysis, Evaluation	
D1	Utilise library, computer and other resources to acquire, apply and disseminate scientific knowledge in reports, presentations, coursework and examinations.
D2	Analyse, evaluate and present data in the form of written reports.
D3	
D4	
D5	
Autonomy, Accountability and Working with Others	
E1	Take responsibility for own work and for utilising a significant range of resources.
E2	Plan, implement and analyse data for investigation of research practices.
E3	

Distance learning versions of BIOL modules (except Advanced Laboratory Techniques, which requires on-campus attendance) are available only to Stream A students.

* QUAL11002 Statistical Quality Control and QUAL11008 Service Quality are only available for Distance Learning.

*1 BIOL11015 Work-Based Learning 1 (Specialist Portfolio) and BIOL11016 Work-Based Learning 2 (Specialist Portfolio) only available to students who have completed an IBMS Specialist portfolio.

Level 11- Postgraduate Diploma (PgDip)

Criteria for Award

Please refer to [UWS Regulatory Framework](#) for related regulations

In line with UWS Regulatory Framework, for the award of a PgDip Advanced Biomedical Science, students must complete at least 120 Credit points (of which a minimum of 90 are at least at level 11 and none below level 10). Distinction will be awarded in line with University Regulations.

SCQF LEVEL 11 – Masters	
Learning Outcomes (Maximum of 5 per heading)	
Knowledge and Understanding	
A1	Have a comprehensive understanding of key scientific principles underpinning the biomedical sciences and have developed a systemic knowledge of core cellular and molecular processes underlying health and disease.
A2	Demonstrate an advanced knowledge of at least one core pathology specialism of biomedical science.
A3	Appreciation of the encompassing role of molecular and clinical genetics in the pathology of disease.
A4	Acquire, organise and critically analyse information relating to current issues in the biomedical sciences.
A5	Critical awareness of principles relating to scientific integrity and ethical issues in biomedical science.
Practice - Applied Knowledge and Understanding	
B1	Demonstrate a critical awareness of a range of laboratory techniques used in the biomedical sciences and a selection of techniques used to analyse laboratory data.
B2	Apply critical analysis, evaluation and synthesis to issues which are at the forefront of biomedical science research.
B3	Apply the principles of scientific enquiry to design, plan and undertake a hypothesis-driven biomedical science research.
B4	Evaluate and apply research technologies to research challenges in specialist areas of pathology in biomedical sciences.
B5	
Communication, ICT and Numeracy Skills	
C1	Communicate effectively at an appropriate professional level utilizing information technology and a range of approaches.
C2	Effectively utilise library and computer resources to access and search for information in specified areas from a range of sources, evaluating this information to draw reasoned conclusions
C3	Apply appropriate statistical methods to scientific data.
C4	Produce a research driven scientific paper in a format meeting the criteria for peer reviewed publication.
C5	
Generic Cognitive Skills - Problem Solving, Analysis, Evaluation	
D1	Utilise library, computer and other resources to acquire, apply and disseminate scientific knowledge in reports, presentations, coursework and examinations.
D2	Analyse, evaluate and present data in the form of written reports.
D3	Demonstrate the ability to develop and implement creative solutions to practical problems.
D4	
D5	
Autonomy, Accountability and Working with Others	

E1	Take responsibility for own work and for utilising a significant range of resources.
E2	Plan, implement and analyse data for investigation of research practices
E3	Show the ability to work in a professional manner and be able to make informed judgements relating to professional issues.
E4	
E5	

Masters Modules

CORE

SCQF Level	Module Code	Module Title	Credit	Term			Footnotes
				1	2	3	
11	BIOL11026	Biomedical Science Quality Management	20	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	*1
10	BIOL10032	IBMS Clinical Immunology	20	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	*2
11	BIOL11011	Disease: Detection, Monitoring and Therapy	20	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
11	BIOL11012	Genetic Analysis in Biomedical Science	20	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
11	BIOL11005	Masters Research Project	60	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
11	BIOL11007	Research Design	20	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

Footnotes for Core Modules

Students must take Research Design (BIOL11007), Master Research Project (BIOL11005), Disease: Detection, Monitoring and Therapy (BIOL11011), and Genetic Analysis in Biomedical Science (BIOL11012).

*1 Stream B & C students must also take Biomedical Science Quality Management (BIOL11026).

*2 Stream C students must also take IBMS Clinical Immunology (BIOL10032).

The distance learning versions of BIOL modules are available only to Stream A students.

The Masters project module runs in Term 3 and is worth 60 credit points. Students will be allocated a science project which will involve the accumulation and critical assessment of relevant literature from primary research sources. This will be demonstrated through an initial project outline report covering current, relevant literature existing on the research topic as well as the various key methods and techniques to be employed in the project.

In consultation with the academic supervisor and key technical staff, detailed planning of the project goals and work schedule will take place and appropriate risk assessment and COSHH documentation will be produced. There will be typically weekly progress meetings with supervisory staff. Equipment and technical needs will be clearly identified, booked in advance and technical staff to be notified of intended times and dates for equipment and lab use.

After carrying out the relevant research a final research paper in the format of a specified peer-reviewed journal will be produced. This will detail the aims of the research, the relevant state of knowledge in the particular research area, the need for the current research project, the research methods used, their advantages and drawbacks, a critical analysis and assessment of results, appropriate methods of presentation (graphs, charts, tables), appropriate methods for the critical analysis of the results obtained (statistical analysis),

critical discussion of and conclusions drawn from the research carried out in light of current theoretical and practical understanding of the research area, suggestions for future work. Finally, a properly constructed and detailed collection of relevant references should be included.

We support the undertaking of research projects by Stream A students in their work place. This is dependent on the proposed research activities being approved by UWS academic staff as meeting required academic and ethical standards. Workplace projects will be funded by the host laboratory and the work supervised by appropriate host laboratory staff (e.g. line managers). It is not anticipated that UWS staff will visit host laboratory during project but there will be regular (typically weekly) meeting between UWS staff and student. UWS staff have responsibility for project module assessment. Note that Stream A distance learning students are not obliged to undertake a workplace project and a distance learning-based projects are offered by UWS staff.

Masters Modules

OPTION

SCQF Level	Module Code	Module Title	Credit	Term			Footnotes
				1	2	3	
11	BIOL11025	Advanced Laboratory Techniques	20	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
11	BIOL11026	Biomedical Science Quality Management	20	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
11	BUSN11143	The Strategic Manager	20	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
11	QUAL11008	Service Quality	20	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	*
11	QUAL11002	Statistical Quality Control	20	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	*
11	BIOL11015	Work-Based Learning 1 (Specialist Portfolio)	20	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	*1
11	BIOL11016	Work-Based Learning 2 (Specialist Portfolio)	20	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	*1

Footnotes for Option Modules

Distance learning versions of BIOL modules (except Advanced Laboratory Techniques, which requires on-campus attendance) are available only to Stream A students.

* QUAL11002 Statistical Quality Control and QUAL11008 Service Quality are only available for Distance Learning.

*1 BIOL11015 Work-Based Learning 1 (Specialist Portfolio) and BIOL11016 Work-Based Learning 2 (Specialist Portfolio) only available to students who have completed an IBMS Specialist portfolio.

Level 11- Masters

Criteria for Award

Please refer to [UWS Regulatory Framework for related regulations](#)

In line with UWS Regulatory Framework, for the award of an MSc Advanced Biomedical Science, students must complete at least 180 credits (of which a minimum of 150 are at least at level 11 and none below level 10). Distinction will be awarded in line with University Regulations.

