

PROGRAMME SPECIFICATION

Bachelor of Science with Honours (Fnd) in Biomedical Science

Awarding institution	Liverpool John Moores University
Teaching institution	LJMU
UCAS Code	B941
JACS Code	B900
Programme Duration	Full-Time: 4 Years, Sandwich Thick: 5 Years
Language of Programme	All LJMU programmes are delivered and assessed in English
Subject benchmark statement	QAA Subject Benchmark Statement - Biomedical Science (November 2015)
Programme accredited by	IBMS
Description of accreditation	http://www.ibms.org/go/ibms/policy/statements/ibms-degree-statement
Validated target and alternative exit awards	<p>Bachelor of Science with Honours (Fnd) in Biomedical Science</p> <p>Bachelor of Science with Honours (SW) in Biomedical Science</p> <p>Diploma of Higher Education in Biomedical Science</p> <p>Diploma in Higher Education (SW) in Biomedical Science</p> <p>Certificate of Higher Education in Biomedical Science</p>
Programme Leader	Janice Harland

Educational aims of the programme

All programmes within the School of Pharmacy and Biomolecular Sciences aim to provide graduates with a wide knowledge and understanding of core subject matter, thus Biomedical Science aims to provide graduates with an understanding of laboratory-based investigation of human health and disease.

To provide a programme that is recognised and accredited by the IBMS for the completion of section 3a of the Certificate of Competence Portfolio.

To provide the students with vocationally orientated skills to equip them for a career in biomedical science.

To develop study, information technology (IT) and communication skills to enable students to participate in lifelong learning.

To provide the student with skills in independent research to enable them to undertake relevant postgraduate study.

To develop transferable skills to enable students to enter non-subject specific employment at graduate level.

In addition to the aims for the main target award, the aim of a sandwich year is to provide students with an extended period of work experience at an approved partner that will complement their programme of study at LJMU. This will give the students the opportunity to develop professional skills relevant to their programme of study, as well as attitude and behaviours necessary for employment in a diverse and changing environment.

Alternative Exit/ Interim Award Learning Outcomes - Certificate of Higher Education

A student who is eligible for this award will be able to:

Operate in a range of science contexts, and take responsibility for their contributions and outputs.

Evaluate information using it to plan and develop investigative strategies and to determine solutions to a wide range of scientific problems

Apply a broad knowledge base, incorporating theoretical concepts and employing a wide range of specialised skills to real and theoretical biomedical applications.

Alternative Exit/ Interim Award Learning Outcomes - Diploma of Higher Education

A student who is eligible for this award will be able to:

Generate ideas through the analysis of concepts at an abstract level, with a command of highly specialised skills and the formulation of responses to concrete and abstract problems.

Accept responsibility for group and personal work.

Analyse and evaluate information, demonstrating significant judgement across a broad range of biomedical related areas.

A student who successfully completes a placement year will be eligible for the Sandwich award and will, in addition to the above, be able to demonstrate the professional and personal skills necessary for effective employment within a professional environment.

Target award Learning Outcomes - Bachelor of Science with Honours (Fnd)

A student successfully completing the programme of study will have acquired the following subject knowledge and understanding as well as skills and other attributes.

A student who is eligible for this award will be able to:

1. Appreciate fundamental concepts and principles of subjects underpinning biomedical science, including biochemistry,
2. cell and tissue biology, genetics, microbiology, molecular biology and physiology.
3. Understand that biomedical science is the integrated study of a range of human disorders and disease processes together with their laboratory investigation.
4. Recognise the importance of the theoretical basis of research in biomedical science.
5. Engage with the essential facts, concepts and principles relevant to the biomedical science specialist subjects of cellular pathology, clinical biochemistry, clinical immunology, medical microbiology, haematology and transfusion science.
6. Critically evaluate information and data from a variety of sources.
7. Apply planning, research methodology and analytical skills to the in depth study of a topic in a chosen field of study.
8. Apply problem solving skills to the laboratory investigation of human health and disease.
9. Apply strategies for the critical appraisal of laboratory methods.
10. Plan and execute laboratory experiments with an awareness of good laboratory practice (GLP) and COSHH assessment
11. Prepare standard operating procedures.
12. Maintain laboratory notebooks and prepare laboratory reports.
13. Use laboratory equipment and reagents to prepare data.
14. Analyse and interpret laboratory data relevant to the specialist subjects of cellular pathology, clinical chemistry, clinical immunology, medical microbiology, haematology and transfusion science.
15. Collect, record and interpret numerical data.
16. Communicate effectively by discussions, written materials, use of images and presentations.
17. Use information technology to prepare, process and present information.
18. Identify targets and follow schedules to meet targets.
19. Identify and work to collective goals and responsibilities.

Teaching, Learning and Assessment

The methods used to enable outcomes to be achieved and demonstrated are as follows:

Lead lectures, tutorials, seminars, laboratory sessions, workshops, poster sessions, case studies, literature analysis, problem solving, self directed study.

Coursework (essays, reports, reviews) examinations (essay style, MCQ and short answer, problem solving, data

analysis), oral and poster presentations

Written examinations, laboratory reports, research project reports, literature review manuscripts, and case study reports and seminars.

Practical laboratory classes, optional sandwich placements in laboratories, data handling workshops, problem-based learning.

Transferable/key skills are embedded in modules within the programme. Examples include the use of spreadsheet and statistical computer packages to analyse data, seminars, oral presentations, group planning and execution of practical sessions, and research projects.

Practical computer based exams on the use of IT, group seminars, and oral presentations, project reports.

Students are guaranteed opportunities for practising and receiving feedback about their progress in demonstrating graduate skills

Programme structure - programme rules and modules

Students will be offered the opportunity of study abroad at Level 5. If they undertake the Sandwich Year then option of study abroad is not available.

Additional study year abroad following Level 5.

The programme will offer the opportunity of an additional study year abroad following Level 5. Students will be enrolled on a 600 credit honours with study abroad programme. Of those 600 credits, 120 will be taken via a Level 5 study abroad module [5109BMBMOL], the modules to be studied in the host institution must be agreed in advance. The Level 5 mean for the final award mark will be calculated based upon the 240 credits at Level 5.

Sandwich Year [5108BMBMOL]

The aim is to provide students with an extended period of work experience at an approved partner that will complement their programme of study at LJMU. This will give the students the opportunity to develop professional skills relevant to their programme of study, as well as attitude and behaviours necessary for employment in a diverse and changing environment.

The placement year will follow Level 5 and students will be enrolled on a 600 credit honours sandwich programme.

Level 6	Potential Awards on completion	Bachelor of Science with Honours (Fnd)
Core	Option	Award Requirements
6100GNBMOL RESEARCH PROJECT (40 credits) 6101BMBMOL STUDY OF DISEASE 1 (20 credits) 6102BMBMOL STUDY OF DISEASE 2 (20 credits) 6103BMBMOL STUDY OF DISEASE 3 (20 credits)	6104BMBMOL CANCER (20 credits) 6105BMBMOL NUTRACEUTICALS AND TOXICOLOGY (20 credits) 6106BMBMOL ADVANCED IMMUNOLOGY AND INFECTION (20 credits) 6107BMBMOL BIOMATERIALS (20 credits) 6108BMBMOL WORK-BASED LEARNING (20 credits)	100 core credits at level 6 20 option credits at level 6

Level 5	Potential Awards on completion	
Core	Option	Award Requirements
5101BMBMOL BIOMEDICAL RESEARCH METHODS (20 credits) 5102BMBMOL CLINICAL BIOCHEMISTRY (20 credits) 5103BMBMOL IMMUNOLOGY AND INFECTION (20 credits) 5104BMBMOL PERSPECTIVES IN BIOMEDICAL SCIENCE (20 credits) 5105BMBMOL HISTOLOGY AND PHYSIOLOGY (20 credits) 5106BMBMOL BLOOD CELL SCIENCE (20 credits)		120 core credits at level 5 0 option credits at level 5

Level 4	Potential Awards on completion	

Core	Option	Award Requirements
4101BMBMOL BIOMEDICAL SKILLS (20 credits) 4102BMBMOL CELL BIOLOGY (20 credits) 4103BMBMOL PRINCIPLES OF BIOCHEMISTRY (20 credits) 4104BMBMOL INTRODUCTION TO BIOMEDICAL SCIENCE (20 credits) 4105BMBMOL ANATOMY, PHYSIOLOGY AND GENETICS (20 credits) 4106BMBMOL MICROBIOLOGY (20 credits)		120 core credits at level 4 0 option credits at level 4
Level 3	Potential Awards on completion	
Core	Option	Award Requirements
3402FNDSCI INTRODUCTORY CHEMISTRY AND CELL BIOLOGY (20 credits) 3404FNDSCI FUNDAMENTALS OF PHYSICAL AND INORGANIC CHEMISTRY (20 credits) 3408FNDSCI FUNDAMENTALS OF ORGANIC CHEMISTRY (20 credits) 3410FNDSCI SKILLS AND PERSPECTIVES IN BIOMOLECULAR SCIENCES 1 (20 credits) 3411FNDSCI SKILLS AND PERSPECTIVES IN BIOMOLECULAR SCIENCE 2 (20 credits) 3412FNDSCI HUMAN ANATOMY AND PHYSIOLOGY (20 credits)		120 core credits at level 3 0 option credits at level 3

Information about assessment regulations

All programmes leading to LJMU awards operate within the University's Academic Framework.
<https://www.ljmu.ac.uk/about-us/public-information/academic-quality-and-regulations/academic-framework>

Opportunities for work-related learning (location and nature of activities)

The degree programme offers the option of a sandwich route, which involves 1 year of work experience in a specialist field. This occurs at the end of level 5 and the training (which may take place in a NHS or industrial laboratory) allows students to develop their professional and technical skills. Work related learning is delivered throughout the programme and for those students who are eligible there is a level 6 Work-Based Learning module.

Criteria for admission

A/AS Level

Applicants should have (or expect to obtain) at least 2 A2 Levels or equivalent, at least one of which should be normally in an appropriate science or social science subject. Our minimum points tariff is 88 points, this may depend on subjects being studied.

BTEC National Diploma

Applicants should be studying an appropriate Diploma and have (or expect to obtain) a pass with at least 3 merit grades at Level 3 in appropriate units.

AVCE

AVCE applicants should normally have (or expect to obtain) 88 points in an appropriate discipline (normally science).

Irish Leaving Certificate

Applicants must have passed (or expect to pass) their Irish Higher exams with at least grade BBC in 3 subjects, 2 of which must be sciences.

Scottish Higher

Applicants must have passed (or expect to pass) their exams with at least grade BBC in 3 subjects, 2 of which must be sciences

International Baccalaureate

Applicants must have (or expect to obtain) the full award including grade 5 in one appropriate science.

Access

Access applicants should have (or expect to obtain) a pass in an appropriate QAA-approved Access course.

Other

In common with standard University policy, applicants should have GCSE passes in Mathematics and English Language at grade C or above, or equivalent. School/College leavers should be at least 17.5 years on admission.

Mature entry

We welcome applications from highly motivated mature applicants with relevant experience but without the necessary formal qualifications.

Overseas qualifications

Applicants should have acquired passes in appropriate examinations in their country of origin and provide evidence of English language ability equivalent to 6.0 IELTS

External Quality Benchmarks

All programmes leading to LJMU awards have been designed and approved in accordance with the UK Quality Code for Higher Education, including the Framework for Higher Education Qualifications in the UK (FHEQ) and subject benchmark statements where applicable.

The University is subject to periodic review of its quality and standards by the Quality Assurance Agency (QAA) Published review reports are available on the QAA website at www.qaa.ac.uk

Programmes which are professionally accredited are reviewed by professional, statutory and regulatory bodies (PSRBs) and such programmes must meet the competencies/standards of those PSRBs.

Support for students and their learning

The University aims to provide students with access to appropriate and timely information, support and guidance to ensure that they are able to benefit fully from their time at LJMU. All students are assigned a Personal Tutor to provide academic support and when necessary signpost students to the appropriate University support services.

Students are able to access a range of professional services including:

- Advice on practical aspects of study and how to use these opportunities to support and enhance their personal and academic development. This includes support for placements and careers guidance.
- Student Advice and Wellbeing Services provide students with advice, support and information, particularly in the areas of: student funding and financial matters, disability, advice and support to international students, study support, accommodation, health, wellbeing and counselling.
- Students studying for an LJMU award at a partner organisation will have access to local support services

Methods for evaluating and improving the quality and standards of teaching and learning

Student Feedback and Evaluation

The University uses the results of student feedback from internal and external student surveys (such as module evaluations, the NSS and PTES), module evaluation questionnaires and meetings with student representatives to improve the quality of programmes.

Staff development

The quality of teaching is assured through staff review and staff development in learning, teaching and assessment.

Internal Review

All programmes are reviewed annually and periodically, informed by a range of data and feedback, to ensure

quality and standards of programmes and to make improvements to programmes.

External Examining

External examiners are appointed to programmes to assess whether:

- the University is maintaining the threshold academic standards set for awards in accordance with the FHEQ and applicable subject benchmark statements
- the assessment process measures student achievement rigorously and fairly against the intended outcomes of the programme(s) and is conducted in line with University policies and regulations
- the academic standards are comparable with those in other UK higher education institutions of which external examiners have experience
- the achievement of students are comparable with those in other UK higher education institutions of which the external examiners have experience

and to provide informative comment and recommendations on:

- good practice and innovation relating to learning, teaching and assessment observed by external examiners
- opportunities to enhance the quality of the learning opportunities provided to students

Please note:

This specification provides a concise summary of the main features of the programme and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. More detailed information on the learning outcomes, content, teaching, learning and assessment methods of each module can be found in module and programme guides.