



Course Specification

Part A

BSc (Hons) Biomedical Science (HLSU230)
BSc (Hons) Applied Biomedical Science (HLSU231)

Faculty of Health and Life Sciences

School of Life Sciences

Academic Year: 2021-22

Please note: This specification provides a concise summary of the main features of the course and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if s/he takes full advantage of the learning opportunities that are provided.

We regularly review our course content, to make it relevant and current for the benefit of our students. For these reasons, course modules may be updated.

More detailed information on the learning outcomes, content, and teaching, learning and assessment methods of each module can be found in the Module Information Directory (MID), student module guide(s) and the course handbook.

The accuracy of the information contained in this document is reviewed by the University and may be verified by the Quality Assurance Agency for Higher Education.

Revised November 2018

PART A Course Specification (Published Document)
BSc Hons Biomedical Science/Applied Biomedical Science

1. Introduction

Biomedical scientists play a vital role in healthcare, providing key laboratory investigations for accurate disease diagnosis, and undertaking research to improve patient care and outcomes. Over 150 million samples of blood, urine and tissue are analysed every year in UK hospital laboratories by biomedical scientists, giving doctors the necessary information to ensure that patients get the correct care and treatment. This is underpinned by ongoing research and development to understand disease processes and create diagnostic and therapeutic tools. BSc Hons Biomedical Science enables you to develop knowledge, skills and competence to prepare you for a variety of careers in biomedical and biological science or for other graduate level roles. Possible destinations include hospital, public health and other diagnostic providers, clinical sciences, biotechnology, pharmaceutical, cancer research, microbiology, genetics and genomics laboratories. You may choose to continue your studies to MSc or PhD level to develop your specialist knowledge and research skills, or consider graduate entry to medicine or dentistry, Physicians Associate or teaching qualifications. Equally, the skills you will develop, such as problem solving, analytical skills and written and oral communication, will enable you to access non-scientific careers such as graduate training schemes, civil service or managerial roles. Thus the opportunities for graduates of biomedical sciences are diverse and exciting.

To practise as a biomedical scientist, you must be able to demonstrate, and maintain, academic and professional standards enabling registration with the Health and Care Professions Council (HCPC). The degree is accredited by the Institute of Biomedical Sciences (IBMS), assuring the educational quality and standards, and thus forms the primary required educational qualification. These academic qualifications must be supplemented by a period of clinical laboratory training, including completion of the IBMS Certificate of Competence which enables you to apply for HCPC registration. You are able to achieve this within the degree by integration of a one year work experience placement in an approved biomedical science laboratory, or post graduation through employment as a Trainee Biomedical Scientist.

The first year of the course is shared with other biosciences (BSc Human Biosciences and BSc Pharmacology) and provides underpinning knowledge, laboratory and data analysis skills in cell and molecular biology, human physiology, biochemistry, pharmacology, genetics and microbiology. In the second year of study, these topics are focused towards the understanding of disease processes and their diagnosis. The course structure takes a holistic, problem based approach to encourage an integration between the subject areas, reflecting the multidisciplinary approaches in modern biomedical practice. The final year covers the key clinical specialisms of a biomedical scientist, including a research based project in an area of your choice.

Medical science is currently on the cusp of a revolution, enabled by rapidly expanding genomics information. Initiatives such as the 100,000 Genomes Project, which aims to sequence whole genomes of individuals with rare genetic diseases and cancer, have delivered a wealth of genetic data. The challenge for biomedical scientists of the future is how to harness this information in an ethically, socially and economically responsible manner to provide enhanced diagnostic techniques, improved therapies and accurate and useful information for patients and professionals. The underpinning importance of molecular understanding of disease mechanisms and their application are key aspects of the course.

The course provides many opportunities to enhance your study experience. There are designated "Enhancement" weeks in each year during which the normal teaching timetable is suspended to allow you to develop additional skills and competencies. These may include opportunities to experience international field trips, employability and careers events or enhancement of computing or other skills. International students who may experience visa restrictions, or other students unable to take advantage of overseas field trip opportunities, will be able to take part in equivalent experiences in Coventry. You have the option to incorporate a full year of study abroad, or a year of appropriate work experience, in a variety of settings, taken between years 2 and 3. Students who obtain a work experience placement in an appropriate biomedical science laboratory and who successfully complete their IBMS Training Portfolio

will be awarded the IBMS Certificate of Competence, conferring eligibility to apply for HCPC registration on graduation.

You will benefit from the outstanding facilities in our purpose built Science and Health building, including a biomedical science SuperLab. This outstanding facility enables you to gain hands on experience in contemporary laboratory techniques including flow cytometry, real time PCR and automated analysers as used in hospital diagnostic laboratories. You will be supported in your studies by a team of academically and professionally qualified staff, who also bring their research and commercial expertise to the classroom. Students on placement are supported by a visiting University tutor. For placements that require DBS clearance and/or occupational health checks, these are organised and managed by our Registry team. Our dedicated and committed staff team are passionate in supporting students through their studies and empowering them to succeed within their chosen career routes.

2 Available Award(s) and Modes of Study

Title of Award	Mode of attendance	UCAS Code	FHEQ Level
BSc Hons Applied Biomedical Science BSc Hons Biomedical Science BSc Biomedical Science * DipHE (unnamed)* CertHE (unnamed) * <ul style="list-style-type: none">Available as fall back awards only	FT 4 years FT3 years SW 4 years Year abroad (4 years)	B900	Level 6
3 Awarding Institution/Body	Coventry University.		
4 Collaboration	N/A		
5 Teaching Institution and Location of delivery	Coventry University, main campus		
6 Internal Approval/Review Dates	Date of approval*/latest review*: Sept 2019 Date for next review: (Academic year 2027-28)		
7 Course Accredited by	The course is undergoing re-approval by the Health and Care Professions Council (HCPC) and re-accreditation by the Institute of Biomedical Sciences (IBMS) prior to commencing in September 2020.		
8 Accreditation Date and Duration			
9 QAA Subject Benchmark Statement(s) and/or other external factors	QAA Subject Benchmark Statement Biomedical Science (November 2015). For subject specific knowledge, sections entitled Biomedical Science apply (ie Sections 6.1 and 8.6). https://www.qaa.ac.uk/docs/qaa/subject-benchmark-statements/sbs-biomedical-sciences-15.pdf The course has also been mapped to the accreditation standards of the IBMS https://www.ibms.org › education › university-information		

	<p>and the Royal Society of Biology (RSB)</p> <p>https://www.rsb.org.uk/education/accreditation/Degree-Accreditation</p> <p>The BSc Hons Applied Biomedical Science course has also been mapped to HCPC Standards for Education and Training (SETs) and Standards of Proficiency</p> <p>https://www.hcpc-uk.org/resources/standards-of-education-and-training</p> <p>https://www.hcpc-uk.org/standards/standards-of-proficiency/biomedical-scientists/</p>
10 Date of Course Specification	June 2019
11 Course Director	Yvonne Elliott

12 Outline and Educational Aims of the Course

The educational aims of the course are to:

1. Develop an in depth understanding of the normal processes of the human body, and the mechanisms underlying disease states.
2. Enable students to develop skills and strategies to apply their knowledge to address global issues in human health and disease, in a fast advancing scientific and technical environment.
3. Provide a stimulating learning experience that encourages an inquisitive approach to enable students to become lifelong learners in their professional discipline.
4. Provide supervised opportunities for development of contemporary laboratory skills and competencies, including data analysis and interpretation, enabling students to progress as independent laboratory scientists.
5. Provide opportunities for students to plan and carry out a research based project, and to develop the associated skills of time and resource management, independent and team based working and problem solving.
6. Provide enriching experiences that support and enhance the academic curriculum, to allow students to develop their potential to contribute to the world wide biomedical science community
7. Ensure that students are aware of, and can work within, the ethical and professional codes of conduct expected of a biomedical scientist

13 Course Learning Outcomes

On successful completion of the BSc Hons Biomedical Science you will be able to:

1. Demonstrate an in depth understanding of the scientific basis of human health and disease, and be able to apply this knowledge to explain current diagnosis and management of common infectious and non-communicable diseases.
2. Demonstrate understanding of the clinical specialisms in biomedical science, namely cellular pathology, clinical biochemistry, immunology, medical microbiology, haematology and transfusion sciences, and the impact of advancing genomic knowledge on future advances in diagnosis and therapy in these areas.
3. Perform a wide range of regularly used laboratory techniques competently, with due regard to health and safety, appropriate experimental design and data recording.

4. Access, synthesise, critically analyse and present scientific information in multiple formats, suitable for diverse audiences.
5. Analyse and interpret data from a range of different sources, using appropriate digital technology, including large data sets.
6. Apply problem solving strategies in a variety of situations and be able to propose creative solutions.
7. Design, implement, analyse and report a research based project, including ethical compliance.
8. Exhibit professional behaviours and attitudes when working and communicating, independently or collaboratively, with other professionals, peers and service users within the worldwide biomedical science community.
9. Take responsibility for your own learning and professional development, advancing your skills and capabilities to successfully access appropriate career roles.

In addition, for those completing BSc Hons Applied Biomedical Science:

10. Demonstrate academic and professional skills and competencies allowing application for HCPC registration.

Please note that students who graduate with BSc Hons Biomedical Science who have completed the IBMS Certificate of Competence during a placement year, but which falls outside Coventry University's management, will also be eligible to apply for HCPC registration on graduation and will therefore also meet this Learning Outcome

14 Course Structure and Requirements, Levels, Modules, Credits and Awards

BSc Hons Biomedical Science is available as a 3 year full time course, or a 4 year option incorporating either a work experience placement or a study year abroad.

All modules on the course are mandatory, apart from those associated with the optional Sandwich or Study Abroad year. The modules studied at each stage of the course, their credit value (Learning and Assessment Credits) and their mapping to the course learning outcomes are shown in Table 1.

Table 1: Course structure

Credit level	Module Code	Title	Credit Value (Learning Credits)	Credit Value (Assessment Credits)	Mandatory/Optional	Course Learning Outcomes
Semester 1						
4	4024BMS	Human Physiology from Cells to Systems	20	20	M	1, 3, 4
4	4025BMS	Genotype to Phenotype	20	20	M	1,3,4,5,6,8
4	4026BMS	Structure, Function and Analysis of Biomolecules	20	20	M	1,3,4,5
4	4027BMS	Academic and Professional Development for Life Sciences	0	0	M	8,9
Semester 2						
4	4028BMS	Enzymes and Metabolism	10	10	M	1,3,4,5
4	4029BMS	The Microbial World	20	20	M	1,3,4,5
	4030BMS	Drugs, Receptors and Responses	10	10	M	1,3,4,5
	4031BMS	Professional Practice for Life Scientists	10	10	M	3,5,8,9
4	Add+Vantage		10	10	M	

Semester 1						
5	5033BMS	Genetic Basis of Disease	20	15	M	1,2,3,4,5,6
5	5034BMS	Infectious Disease and Immune Defence	20	15	M	1,2,3,4,5,6
5	5035BMS	Haematology and Blood Disorders	10	10	M	1,2,3,4,5,6,8
5	5036BMS	Investigative Approaches to Inherited Immune Disorders	0	10	M	1,2,4,6,8
5	Add+Vantage		10	10	M	
Semester 2						
5	5037BMS	Cellular Basis of Disease	20	20	M	1,2,3,4,5,6
5	5038BMS	Metabolic and Endocrine Disorders	20	20	M	1,2,3,4,5,6
5	5039BMS	Biomedical Science Professional Practice	20	20	M	1,2,3,4,5,6,8,9
Optional Enhancement Year						
5	5001BMS	Professional Experience Placement Year (Approved Biomedical Science laboratory with IBMS portfolio completion)	0	0	O	8, 9, 10
5	5001BMS	Professional Experience Placement Year	0	0	O	8, 9
5	5002BMS	Enhancement Year	0	0	O	8,9
Semester 1						
6	6036BMS	Medical Microbiology and Virology	20	15	M	1,2,4,6
6	6037BMS	Clinical Biochemistry and Immunology	20	15	M	1,2,4,6
6	6038BMS	Research Design in Biomedical Science	10	10	M	4,6,7,8,9
6	Add+Vantage		10	10		
Semester 2						
6	6039BMS	Cancer Biology	20	15	M	1,2,4,5,6
6	6040BMS	Clinical Haematology and Transfusion Science	20	15	M	1,2,4,6
	6041BMS	Investigative Approaches in Haematology	0	10	M	1,2,4,6,8
6	6042BMS	Independent Project in Biomedical Science	20	20	M	4,6,7,8,9

Modules are designed based on the academic content and competency criteria required for IBMS and RSB accredited courses. They are informed by the subject specific knowledge, understanding and skills specified by the QAA Benchmark Statement. Key modules have also been mapped to the HCPC Standards for Education and Training and HCPC Standards of Proficiency.

Year 1 modules provide the key framework of skills and knowledge. This includes a firm understanding of core areas of modern biosciences, from the cellular and molecular level through to whole body anatomy and physiology. These subjects are underpinned by relevant aspects of chemistry, maths and data analysis. The topics are taught in an integrated manner to ensure that the links between disciplines such as biochemistry, physiology and pharmacology are evident. Students are supported to become confident, competent and safe laboratory scientists. Individual professional development activities enable students to identify strategies and approaches to enhance their own capabilities and to build their professional profile in preparation for successful placement application and ultimately for post graduation careers.

At Year 2, modules explore in more depth the cellular and molecular mechanisms underlying disease states and approaches to diagnose, monitor and treat disease are introduced. These topics are linked with modern developments including stem cell technologies, gene editing, reproductive options such as IVF and mitochondrial transfer, and the use of biotechnology to produce antibody based therapies. Students continue to extend their skills and competencies, and consider the interdisciplinary nature of modern biomedical science through inter-professional learning experiences.

The optional sandwich year, taken between Years 2 and 3, may involve a year in an appropriate work placement, or a year of study abroad. This offers highly valued opportunities to enhance learning and gain

a competitive advantage in the workplace after graduation. Students taking this option will take an additional year to complete their degree.

Students who obtain a work experience placement in an appropriate accredited biomedical science laboratory where the placement is managed by Coventry University will transfer to the BSc Hons Applied Biomedical Science degree. When they have successfully completed their IBMS Training Portfolio they will be awarded the IBMS Certificate of Competence, conferring eligibility to apply for HCPC registration on graduation. Those students who take a placement at Public Health England Laboratories, or other approved biomedical science laboratory with external portfolio verification, will graduate with the award of BSc Hons Biomedical Science. These students will also achieve the Certificate of Competence from the IBMS upon successful portfolio verification and are also eligible to apply for HCPC Registration after graduation. Those students who do not take a placement year, or who take a non-hospital laboratory placement or study year abroad, are eligible to apply for employment as a Trainee Biomedical Scientist after graduation and may complete the IBMS Training portfolio and gain the Certificate of Competence whilst employed, leading to eligibility for HCPC registration.

Students should note that some work placements, particularly those within NHS and Public Health laboratories, may require additional health and professional suitability checks including criminal record checking via DBS. If students are unable to meet the health and suitability requirements, then the choice of placement opportunities will be limited. Students taking the work experience option enrol on 5001BMS (Professional Experience Placement) and those who opt for the study year abroad enrol on 5002BMS (Enhancement Year). These zero credit rated modules do not count towards the final degree classification, but must be passed for the Sandwich degree award.

In Year 3, modules are aligned to the specialist disciplines in diagnostic biomedical science. Students explore in depth, and gain an understanding of, diagnostic and therapeutic approaches for common haematological conditions, the requirements for successful blood transfusion, immunological disorders, cancer genetics and diagnostic approaches in biochemistry and microbiology. Students plan, implement and independently report a project in a discipline area of their choice, with opportunities to present their findings at the School of Life Sciences Student Research Conference.

Each stage of the course also includes an Add+Vantage module. The Add+Vantage scheme is designed to enhance students' skills and competencies for employment. Modules offered within this scheme are varied and students can choose from options in enterprise, business, marketing, languages, academic skills, voluntary work and other areas that enhance employability.

Further details of the Add+Vantage scheme are available at:

<https://share.coventry.ac.uk/students/Add-vantage/Pages/NewHome.aspx>

Throughout the course students are supported academically by their designated Academic Personal Tutor (APT) and also by access to the Centre for Academic Writing (CAW) and the award winning Sigma Mathematics Support Centre. The "Flying Start" Scheme provides students with key resources needed for all three years of study, such as access to key texts, final year student membership of the IBMS and essential personal laboratory equipment.

The criteria for awards and their classification follow the general academic regulations (mode E) of the University. These can be found at:

<https://www.coventry.ac.uk/Documents/Registry/Regulations%20Academic/Academic-Regulations-2018-2019.pdf>

For award of BSc Hons Applied Biomedical Science or BSc Hons Biomedical Science the project module 6042BMS must be included in the classification calculation.

Students who fail to meet the criteria for the award for which they are registered maybe considered for an alternative award. Fall back awards are BSc Biomedical Science (non Honours), DipHE and Cert HE awards (both unnamed). Conditions for these awards are detailed in the University Regulations Mode E.

Progression to subsequent stages of the degree is subject to University Regulations, mode E.

15 Criteria for Admission and Selection Procedure

UCAS entry profiles may be found by searching for the relevant course on the [UCAS website](#), then clicking on 'Entry profile'.

Normal Entry Requirements for Degree Courses:

Applicants should normally meet the entry requirements of the course as detailed on our University website: <http://www.coventry.ac.uk/study-at-coventry/course-search/>.

Non-standard applicants will be considered for entry to the course and admission will be at the discretion of the Course Director and the Admission Tutor.

Accreditation for prior learning (APL) or prior experiential learning (APEL) may be granted for modules at the discretion of the Course Director providing that adequate evidence of learning is submitted by the student in accordance with University guidelines. APL/APEL will be limited to the maximum specified in University Regulations.

16 Academic Regulations and Regulations of Assessment

This Course conforms to the standard [University Academic Regulations](#) Undergraduate Mode E

17 Indicators of Quality Enhancement

The Course is managed by the School of Life Sciences Board of Study of the Faculty of Health and Life Sciences.

The Progression and Awards Board (PAB) is responsible for considering the progress of all students and making awards in accordance with both the University and course-specific regulations.

The assurance of the quality of modules is the responsibility of the Boards of Study which contribute modules to the course.

External Examiners have the opportunity to moderate all assessment tasks and a sample of assessed work for each module. They report annually on the course and/or constituent modules and their views are considered as part of the Course Quality Enhancement Monitoring (CQEM). Details of the CQEM process can be found on the Registry web site.

Students are represented on the Student Forum, Board of Study and Faculty/School Board, all of which normally meet two or three times per year.

Student views are also sought through module and course evaluation questionnaires.

The following are key indicators of quality and standards:

- The course has been designed in accordance with the QAA Quality Code for Higher Education (May 2018), and the relevant QAA Subject Benchmark Statement (Biomedical Science, 2015)
- The course has been mapped to the educational standards and competencies specified by the Institute of Biomedical Sciences (IBMS) and the Royal Society of Biology (RSB) for accreditation of undergraduate degrees. BSc Hons Applied Biomedical Science has been designed to meet the Standards for Education and Training and Standards of Proficiency of the Health and Care Professions Council (HCPC).

- The academic team are specialists within their subject discipline and many also have professional experience as HCPC Registered Biomedical Scientists, and maintain close links with local hospital laboratories. Academic staff are encouraged to take a post-graduate qualification in higher education teaching to qualify as Associate Fellows, Fellows and Senior Fellows of the Higher Education Academy (HEA)
- Many staff are active members of the IBMS, the RSB and other professional bodies.
- Many staff are actively involved in research within the Faculty Research Centre for Sport, Exercise and Life Sciences (SELS).
- The QAA's review of higher education undertaken in February 2015 confirmed that Coventry University meets UK expectations in:
 - the setting and maintenance of the academic standards of its awards;
 - the quality of student learning opportunities;
 - the quality of the information about learning opportunities;
 - the enhancement of student learning opportunities.
- The University was Awarded Gold Standard in the Teaching Excellence Framework (TEF)

18 Additional Information

Enrolled students have access to additional, key sources of information about the course and student support including:

Faculty/School Handbook

Student Handbook

Module Information Directory

Maths and Statistics Support (SIGMA)

Centre for Academic Writing (CAW)

Library Support including designated Subject Librarian

Module Webs

Course Webs

Employability support

24 hour IT support
