

## Biomedical Science BSc (Hons) programme specification

<https://www.bradford.ac.uk/courses/ug/biomedical-science-bsc/>

<b>Academic Entry Year:</b>	2025/26	
<b>Degree Awarding Body:</b>	The University of Bradford	
<b>Main Location:</b>	City Campus	
<b>Subject Benchmarks:</b>	Biomedical Science and Biomedical Sciences (Quality Assurance Agency 2023)	
<b>Qualifications Framework:</b>	Framework for HE Qualifications of UK Degree Awarding Bodies (FHEQ: QAA 2014)	
<b>Target Honours Degree:</b>	<b>Bachelor of Science (BSc Hons) Biomedical Science [FHEQ Level 6]</b>	
<b>Intermediate/exit awards:</b>	Ordinary Degree of Bachelor (BSc)	[FHEQ Level 6]
	Diploma of Higher Education (DipHE)	[FHEQ Level 5]
	Certificate of Higher Education (CertHE)	[FHEQ Level 4]
<b>Programme Admissions:</b>	UK and international students	
<b>Programme Start Date(s):</b>	September	
<b>Programme Modes of Study:</b>	<b>(UCAS code C900) 3 years full-time;</b>	
	4 years full-time with placement year or study abroad (transfer route);	
	4 years full-time (international incorporated foundation);	
	5 years full-time with foundation year and placement/study abroad.	

The Institute of Biomedical Science (IBMS) accredits the BSc (Hons) Biomedical Science programme. IBMS degree accreditation ensures that a degree course covers the academic components of the standards of proficiency at the required level. Graduates with the target award of BSc (Hons) Biomedical Science meet the Health and Care Profession Council (HCPC) standards of proficiency for biomedical scientists and that students receive a wide-ranging, research-informed scientific education and develop practical skills and experience that employers value.

Students can transfer to the BSc (Hons) Medical Bioscience award from this programme. The award of BSc (Hons) Medical Bioscience is not accredited or approved by IBMS or HCPC and does not confer eligibility to register or work as a Biomedical Scientist in the UK.

**Please note:** The University has a set of terms and conditions for all students accepting an offer to study on a course here at Bradford. This is called the Student Contract. This document sets out the Terms and Conditions which apply when you accept an offer of a place on a programme of study at the University of Bradford. [View our Student Contract for further details](#). Information about this programme and its modules has been published in advance of the academic year to which it applies. Every effort has been made to ensure that the information is accurate at the time of publication, but changes may occur given the interval between publishing and commencement of teaching. Any change which impacts the terms and conditions of an applicant's offer will be communicated to them.

### Minor Modification Schedule

1. April 2025: Changes for 2025/6 academic year confirmed
2. September 2025: Confirmed new academic regulations and reformatted specification for improved accessibility

## Introduction

Biomedical Science is a key healthcare science involving a multidisciplinary approach to the study of human disease. Biomedical Science plays a critical role in saving lives and supporting scientists and medical teams to identify the requirements of critically ill patients and identify outbreaks of infectious diseases. It encompasses studies of the causes of disease and the effects of disease on the normal structure and functions of the human body and it provides an understanding of the scientific basis for the laboratory investigation, diagnosis, monitoring and treatment of disease. Graduates from the programme will have gained experience of biomedical science research and be familiar with the development of new diagnostic procedures and therapeutic intervention strategies.

The University of Bradford was one of the first biomedical science courses in the country. Since that time, the Bradford programme has developed to be innovative through its focus on the development of practical skills based on real-world scenarios. Students on this programme will experience our industry-standard teaching and research laboratories, explore cutting-edge research, learn from research-active experts and have the opportunity to develop chosen areas of interest by specialising in Haematology, Cancer Biology, Medical Cell Biology, Medical Biochemistry or Medical Microbiology. In addition, students will be able to tailor their course by choosing an employment-related module in research design, industrial practice or science education.

Our programme is accredited by the Institute of Biomedical Science (IBMS) and students graduating from it will have a broad-based scientific education coupled with the technical skills necessary for laboratory work. This broad-based education provides the foundation for a wide range of scientific careers in an 'in-demand' sector, including as a Biomedical Scientist in a hospital environment (after successful completion of the IBMS portfolio of competence in an accredited laboratory placement and registration with the Health and Care Professions Council after graduation), as a laboratory-based or non-laboratory-based scientist in the pharmaceutical industry and other related industries, or in academic research and teaching. However, whilst the degree provides a qualification necessary to start a professional career, graduates will need to continue to develop skills throughout their working life, due to the rapidly evolving nature of Biomedical Science. This programme couples a scientific education with the development of the skills necessary for lifelong learning.

The programme's aims and learning outcomes have been referenced to the University's Bradford Curriculum (2023), the Quality Assurance Agency for Higher Education's subject benchmark statement for Biomedical Sciences (2023), the Framework for Higher Education Qualifications (2014), the Institute of Biomedical Science (IBMS) core competencies and the Health and Care Professions Council (HCPC) Standards of Proficiency.

## Programme Aims

The programme is intended to:

- Provide an accredited degree which meets the requirements of the IBMS that can enable graduates to apply to register with the HCPC as a Biomedical Scientist (after completing the IBMS certificate of competence portfolio in an appropriate training position).

- Enhance learning by providing a choice of study options to suit students' interests and/or career aspirations.
- Deliver a programme of study in Biomedical Science for students from diverse cultural and educational backgrounds.
- Develop subject knowledge and understanding in the core and optional areas of Biomedical Science as defined in the curriculum to reflect the Subject Benchmark Statement: including an awareness of the implications of ethnicity, gender and age, as well as social and cultural diversity in health and disease.
- Develop core discipline-specific skills as outlined in the curriculum to reflect the Subject Benchmark Statement.
- Develop research skills to reflect the Subject Benchmark Statement and prepare students for postgraduate study.
- Develop personal transferable skills that enable students to move successfully into employment or further education.
- Provide a supportive and structured environment in which students are encouraged to develop the independent study skills required for lifelong learning.

## Programme Learning Outcomes

**To be eligible for the non-accredited award of Certificate of Higher Education at FHEQ level 4, students will be able to:**

1. Demonstrate knowledge of the underlying concepts and principles of core aspects of Biomedical Science including Cell Biology, Genetics, Biochemistry, Molecular Biology, Physiology, Pathology, Microbiology.
2. Provide evidence of an ability to present, evaluate and interpret qualitative and quantitative data in order to develop lines of argument and make sound judgements in accordance with basic theories and concepts of their subject(s) of study.
3. Write scientific reports and communicate the results of their study/work accurately and reliably, with structured and coherent arguments.
4. Use a range of personal transferable skills including communication, information technology (including the use of the internet and other electronic devices as sources of information and means of communication), team-working, negotiating and decision-making, responsibility for self-directed learning and the time management skills that are required in a working environment.
5. Use skills associated with professional and ethical laboratory practice in Biomedical Science, including: SOP writing, COSHH /risk assessment, good laboratory practice, as well as respond appropriately to The Human Tissue Act 2004, governance, audit and quality control and assurance.

**Additionally, to be eligible for the non-accredited award of Diploma of Higher Education at FHEQ level 5, students will be able to:**

6. Demonstrate knowledge and critical understanding of the well-established principles of Biomedical Science, and of the way in which those principles have developed.
7. Discuss and evaluate the laboratory specialities of genetics, cellular pathology, clinical biochemistry, clinical immunology, haematology and transfusion science, and medical microbiology
8. Select and evaluate experimental and clinical laboratory techniques and apply them to experimental and laboratory investigations.
9. Prepare, process, analyse (including numerical and statistical analysis) and interpret experimental/clinical laboratory data and present data in an appropriate format, applying skills in critical and analytical thinking and problem-solving.
10. Effectively communicate information, arguments and analysis in a variety of forms to specialist and non-specialist audiences and interpret and critically review scientific literature.

**Additionally, to be eligible for the non-accredited award of Ordinary Degree of Bachelor at FHEQ level 6, students will be able to:**

11. Demonstrate a systematic understanding of key aspects of Biomedical Science, including acquisition of coherent and detailed knowledge, informed by current research-led aspects of a discipline.
12. Demonstrate an ability to undertake autonomous learning.

**Additionally, to be eligible for the accredited award of Honours Degree of Bachelor at FHEQ level 6, students will be able to:**

13. Devise and sustain arguments and solve problems, using ideas and techniques at the forefront of Biomedical Science to describe and comment on particular aspects of current research, or equivalent advanced scholarship, within the discipline.

## **Learning, Teaching and Assessment Strategy**

The learning and teaching strategy takes into consideration the knowledge and skills needed in industry, progression through stages of study, the nature of topics studied and the need for students to demonstrate greater autonomy in their learning as they progress through the programme.

Online learning packages and formal lectures will facilitate acquisition of knowledge and understanding of Learning Outcome 1 (LO 1) and discipline-specific skills (LO 6, 7 and 11). Laboratory sessions run in conjunction with the theoretical components will provide the opportunity to enhance understanding of particular topics (LO 2-5). These will also help to develop discipline-specific skills (LO 6-7) and personal transferable skills (LO 4, 5 and 8). Tutorials, workshops and case studies will develop knowledge and understanding, discipline-specific skills and personal

transferable skills (LO 9-10). Team-based learning is used in the L4 Genetics, L5 Molecular Biology and L6 Biology of Disease modules to help enhance depth of learning and improve understanding (LO 6, 7, 8 and 13). Discipline-specific skills will be further enhanced in the specialist optional modules in the final year (LO 11 and 13). Directed study, involving directed reading of appropriate texts and the preparation of assessed work, is used to develop the student as an autonomous learner (LO 12).

The assessment strategy is designed to allow students to demonstrate achievement of the learning outcomes of an individual module appropriate to the level of study and the learning outcomes of the programme. These learning outcomes are consistent with the Framework for Higher Education Qualifications.

At level 4, learners will be assessed primarily on their breadth of knowledge by multiple choice question (MCQ) examinations. Coursework assignments will give students the opportunity to gain experience in practical laboratory skills, presentations, report writing, data handling and critical interpretation.

As students progress to level 5, assessments focus on depth of understanding and application of knowledge.

In the final year, a diverse range of assessments build learners' communication, interpretative and critical skills to ensure that they are fully prepared for the world of work post-graduation.

The project report provides a major opportunity to demonstrate autonomy in data handling and critical interpretation in a research context.

Formative assessments are embedded at all levels of the programme to allow students to test their knowledge and understanding.

## **Curriculum**

The curriculum has been developed as a spiral so that core knowledge is reinforced and built upon at each level of study, encouraging deep understanding and knowledge and embedding good practice in inclusive learning and teaching. The programme provides a study route which permits the maximum student choice consistent with the requirements of accreditation.

In the first and second year of the degree (levels 4 and 5) all modules are core to ensure that students develop the necessary level of knowledge of Biomedical Science suitable for a career as a Biomedical Scientist or as a scientist in one of the many other professions that our graduates choose to follow. In the third year (level 6) students choose a semester 1 employability module related to their chosen career path as well as a discipline-specific module which aligns with their interests in the field of biomedical science.

Throughout the curriculum students will have the opportunity to develop the skills associated with biomedical laboratory practice including the ability to undertake COSHH and risk assessments and procedures to ensure compliance, and the importance of quality control and quality assurance.

The curriculum may change, subject to the University's programme approval, monitoring and review procedures, as improvements are made each year. More detail, including learning outcomes, is available for each unit in the individual module descriptors.

## Stage 1 Curriculum

At Stage 1, students study normal human biology at the level of the molecule, gene, cell, organ and organism along with introductory microbiology. Laboratory sessions, run in conjunction with the theoretical components, allow students to consolidate and apply their knowledge. Students are introduced to basic laboratory skills and skills for data handling and interpretation. Students will be supported to develop a reflective attitude to learning and develop numerical, written and oral communication, IT and group-working skills.

**Table 1: BSc Biomedical Science Stage 1 Modules (all core)**

Module Code	Module Title	Credit	Level	Study Period	Select
BIS4016-B	Cell Biology	20	FHEQ 4	Semester 1	Core
BIS4017-B	Molecules of Life	20	FHEQ 4	Semester 1	Core
BIS4018-B	Laboratory and Professional Skills 1	20	FHEQ 4	Academic Year	Core
BIS4009-B	Human Physiology	20	FHEQ 4	Academic Year	Core
BIS4013-B	Introductory Microbiology	20	FHEQ 4	Semester 2	Core
BIS4019-B	Genetics	20	FHEQ 4	Semester 2	Core

At the end of stage 1, students will be eligible to exit with the award of Certificate of Higher Education if they have successfully completed at least 120 credits and achieved the award learning outcomes. **This exit award is not accredited by the Institute of Biomedical Science (IBMS), nor does it confer eligibility to register with the HCPC.**

## Stage 2 Curriculum

At Stage 2, the curriculum continues to concentrate on the core areas of Biomedical Science, in particular the laboratory disciplines. Students start to examine the processes that disrupt normal human biological function, and so cause disease, and explore the methods used to diagnose and treat disease. Laboratory sessions provide an opportunity to consolidate learning, enhance laboratory skills and to gain skills in data handling and interpretation.

Students are encouraged to develop their personal transferable skills and reflect on how these will prepare them for the working environment. During the skills module, students perform skill self-evaluations to identify and address areas for improvement. Acquisition of the skill is then assessed in the laboratory classes and recorded in the student skill tracker/log.

During the second year, students develop increasing autonomy in their learning, producing individual and group work and demonstrating increasing responsibility for achieving the learning outcomes of their modules and level of study. This is exemplified by the student-led team project in the laboratory and professional skills module. Students have opportunities to engage with case studies and workshop material, leading to debate and discussion of concepts and facts and enhancing the assimilation of ideas.

**Table 2: BSc Biomedical Science Stage 2 Modules (all core)**

Mod. Code	Module Title	Credit	Level	Study Period	Select
BIS5013-B	Clinical and Analytical Biochemistry	20	FHEQ 5	Semester 1	Core
BIS5018-B	Medical Microbiology & Infection Science	20	FHEQ 5	Semester 1	Core
BIS5012-B	Immunology, Haematology and Transfusion Science	20	FHEQ 5	Academic Year	Core
BIS5019-B	Laboratory and Professional Skills 2	20	FHEQ 5	Academic Year	Core
BIS5015-B	Pathology	20	FHEQ 5	Semester 2	Core
BIS5020-B	Molecular Biology	20	FHEQ 5	Semester 2	Core

Students who successfully progress to Stage three by achieving 120 credits will be eligible to take a placement or study abroad year. Students who are required to repeat some, or all, of Stage two, or who progress to Stage three but have a referral in one or more modules will not be able to go on placement or study abroad. See the **Placement / Study Abroad** section for more details.

At the end of stage 2, students will be eligible to exit with the award of Diploma of Higher Education if they have successfully completed at least 240 credits and achieved the award learning outcomes. **This exit award is not accredited by the Institute of Biomedical Science (IBMS), nor does it confer eligibility to register with the HCPC.**

### Stage 3 Curriculum

The main focus of stage 3 is on developing students into competent, confident autonomous scientists, able to continue to develop their own knowledge and understanding of human health and disease. Laboratory sessions, along with the individual research project, support students to further enhance their data handling and critical interpretation skills and increase the autonomy with which they can apply them. In addition, employability modules are embedded to assist students with their career plans. Students select an employability module to align with their potential career path and a specialist module to reflect their subject interests:

- Research Design: providing an in-depth understanding of large-scale study design for students considering further study at Masters or PhD level.
- Industry, Innovation and Healthcare: providing an understanding of Good Laboratory Practice (GLP), Good Management Practice (GMP), Intellectual Property (IP) and patents for students who are considering progressing straight into employment within industry.
- Science Education: an introduction to the field of education for students who are considering applying for teacher training.

Students are given the opportunity to select a final year project which is aligned with their final year option choices. The individual research project is a capstone, which draws on the skills and knowledge acquired throughout the degree and applies them to a student-owned project. The project also allows the further development of advanced numerical, written and oral communication, IT and group-working skills, in an authentic workplace relevant context.

All optional module combinations lead to an IBMS-accredited degree. From this list of options, students **choose 20 credits in Semester 1 and 20 credits in Academic Year:**

**Table 3: BSc Biomedical Science Stage 3 Module Options**

Mod. Code	Module Title	Credit	Level	Study Period	Selection
BIS6017-B	Diagnostics in Biochemistry and Immunology	20	FHEQ 6	Semester 1	Option 1
BIS6019-B	Diagnostic Histopathology	20	FHEQ 6	Semester 1	Option 2
BIS6022-B	Diagnostic Microbiology	20	FHEQ 6	Semester 1	Option 3
BIS6028-B	Cancer Biology	20	FHEQ 6	Semester 1	Option 4
BIS6031-B	Industry, Innovation and Healthcare	20	FHEQ 6	Academic Year	Option 1
BIS6032-B	Research Design	20	FHEQ 6	Academic Year	Option 2
BIS6033-B	Science Education	20	FHEQ 6	Academic Year	Option 3

Students study 80 core credits to complete the programme:

**Table 4: BSc Biomedical Science Stage 3 Core Modules**

Module Code	Module Title	Credit	Level	Study Period	Selection
BIS6052-B	Clinical Genetics and Genomic Medicine	20	FHEQ 6	Semester 1	Core
BIS6012-B	Biology of Disease	20	FHEQ 6	Semester 2	Core
BIS6026-D	Biomedical Science Research Project	40	FHEQ 6	Academic Year	Core

Students will be eligible to exit with the award of Ordinary Degree of Bachelor if they have successfully completed at least 120 credits in both Level 4 and 5 and 60 credits at level 6 and achieved the award learning outcomes. **This exit award is not accredited by the Institute of Biomedical Science (IBMS), nor does it confer eligibility to register with the HCPC.**

Students will be eligible for the award of Honours Degree of Bachelor if they have successfully completed at least 360 credits and achieved the award learning outcomes.

**Upon successful completion of the IBMS-accredited BSc Hons degree, graduates will be eligible to complete the IBMS certificate of competence portfolio whilst in a training position in an accredited laboratory; this then enables them to apply to register with the HCPC as a Biomedical Scientist.**

## Placement/Study Abroad Opportunities

This programme provides the option for students to undertake a work placement or period of study abroad between years two and three. This provides valuable experiential learning in a healthcare setting or in the pharmaceutical or biosciences sector. Not only will this improve students' understanding of final year material through application of knowledge, it may also significantly enhance employment opportunities. There are also opportunities to undertake an additional year of study through the International Student Exchange Programme (ISEP) in over 30 countries including the United States, Ghana, Uruguay and at many European Universities. This is an exciting way for students to enhance their CV in an increasingly global environment and develop understanding of other cultures and language skills.

## Students can register on one of the experience modules:

Table 5: BSc Biomedical Science Experience Stage Modules (placement/study abroad)

Module Code	Module Title	Credit	Level	Study Period
BIS5021-Z	School of Chemistry and Bioscience Placement Experience	0	FHEQ 5	Full Year
BIS5022-Z	School of Chemistry and Bioscience Study Abroad Experience	0	FHEQ 5	Full Year

Any placement or period of study abroad is subject to approval by the Programme Team. Students who wish to participate in a placement or period of study abroad will be required to find, apply for and make the most of their chosen opportunity, and will be supported in doing so by the Programme Team, the Faculty Academic Lead for Placements, as well as the central University Careers and Employability Service. Further information about general and Faculty-specific placement and study abroad opportunities is available, visit:

<https://www.bradford.ac.uk/careers/jobs/internships-and-placements/> and <https://www.bradford.ac.uk/study/abroad/>

## Assessment, Continuation and Award Regulations

This programme follows the Assessment, Continuation and Award regulations published on the University's website (<https://www.bradford.ac.uk/media-v8/ageo/regulations/Regulation-2-Undergraduate-Assessment-Continuation-and-Award-1.0b.pdf>) for undergraduate courses (Regulation 2) with variance from the regulations as outlined below and documented in the Variance Register:

- **Variance from 4.2** - Students must achieve at least the pass mark stated in the module descriptor for all specified individual components in order to pass the modules identified as requiring this rule on the programme.
- **Variance from 6.1 and 6.2** - Students must pass BIS5019-B Laboratory and Professional Skills 2 to continue to the next stage of their programme.

Students who do not meet these additional requirements but otherwise meet the University academic requirements for continuation may transfer to the BSc (Hons) Medical Bioscience programme, which is not accredited or approved by IBMS or HCPC, but follows the standard Assessment, Continuation and Award Regulations.

## Admission Requirements

We take into consideration a number of factors when assessing your application. It's not just about your grades; we take the time to understand your personal circumstances and make decisions based on your potential to thrive at university and beyond. Consideration of applications will be based on a combination of formal academic qualifications and other relevant experience.

Applications are particularly welcomed from adult learners (those aged 21+ at the start of the programme), British armed forces families, carers and care leavers, estranged or orphaned learners, refugees and asylum seekers, and Romani or Traveller families. To find out more about

the University of Bradford Progression Scheme, visit the webpage:

<https://www.bradford.ac.uk/undergraduate/applicants/progression-scheme/>

**Please note:** Information in this document is for the contemporary recruitment cycle and was accurate at time of publication. The current tariff and accepted qualifications for entry onto the programme is published at the online course page:

<https://www.bradford.ac.uk/courses/ug/biomedical-science-bsc/>

### **The minimum requirements for the programme are as follows:**

- All UK/home students must have GCSE English and GCSE Mathematics at grade 4/C or above. Equivalent qualifications such as Functional Skills Level 2 are accepted.
- International students should have English proficiency equivalent to IELTS 6.0 with no sub-test less than 5.0 as well as recognised Level 2 equivalent qualifications in Science and Mathematics.
- Students applying through UCAS with Access to HE qualifications do not need any other GCSEs. Students applying with other qualifications (e.g. A-levels) should also have GCSE 4/C in two Sciences (equivalent other RQF Level 2 qualifications accepted).

A typical offer for someone applying through the UCAS scheme is 112 points:

- A Levels: BBC, to include either Biology or Chemistry at grade B or above.
  - For awards since 2017, where a science A-level is taken, the University requires applicants to pass the practical element.
  - For awards before 2017, advanced subsidiary (AS-level) is worth 40% of an A Level.
- BTEC: DDM/DMM in the Extended Diploma in Applied Science as long as specific units are included - please list units in your application or contact Admissions to discuss this.
- T Levels: Merit with a subject-specific requirement in Science.
- International Baccalaureate: to include Higher Level Chemistry or Biology at 6/7.
- Access to HE: applicants must be studying an Access to Higher Education Diploma in a Science subject and achieve a minimum of 12 credits of Biology or Chemistry at Distinction.

On completion of a UCAS form applicants will be invited to the School for an Applicant Experience Day when they will have the opportunity to meet staff, view the facilities and discuss “the Bradford experience” with current students.

## **Recognition of Prior Learning**

If applicants have prior certificated learning or professional experience which may be equivalent to parts of this programme, the University has procedures to evaluate and recognise this learning to provide applicants with exemptions from specified modules or parts of the programme. Search our website for **Prior Learning** for more information about how we make RPL decisions.