BSC (HONS) BIOMEDICAL SCIENCE (WITH INTEGRATED FOUNDATION YEAR)

Institute of Science and Environment

Academic Level:	6	**Credits:**	480
UCAS Code:	C910		
Awarding Body:	University of Cumbria		
Delivery Site:	Fusehill Street Campus, Carlisle		
Programme Length:	Full time: 4 years Part time: 6 years Maximum Registration period: 8 years		
Mode of Delivery:	Blended learning		
Pattern of Delivery:	Full Time Part Time: learner will be provided with a specific learning plan.		
	Total weeks of study:	24 weeks	
	Delivery pattern:	2x 12-week semesters	
	Standard semester dates:	Yes	
PSRB:	The programme has been mapped against the QAA benchmark statements adopted by the Institute of Biomedical Science (IBMS) and is currently accredited for route 2		
Programme Webpage:	https://www.cumbria.ac.uk/study/courses/undergraduate/biomedical-sciences-with-integrated-foundation-year/		

Entry Criteria
The University's standard criteria for admissions apply. Please refer to the Applicant Information pages of the University website for more information. For APL, please refer to the University website. Detailed criteria for admission to this programme can be found on the programme webpage: https://www.cumbria.ac.uk/study/courses/undergraduate/biomedical-sciences-with-integrated-foundation-year/

Admissions for International Students
As above for entry, but international students without UK based qualifications must have IELTS standard 7.0 or equivalent for entry onto these programmes.

PROGRAMME AIMS AND OUTCOMES

Programme Aims

By the end of this programme learners will be able to:

1. Instil in students an enthusiasm for Biomedical Science and involve them in an intellectually stimulating experience of learning.
2. Develop an inter-disciplinary approach to science and technology and appreciation of the biosciences in an industrial, academic, economic and social context.
3. Develop critical awareness of advances at the forefront of Biomedical Science and provide students with the ability to plan and conduct experiments independently.
4. Provide students with a knowledge and skills base from which they can proceed to employment or postgraduate study.

Programme Outcomes – Knowledge and Understanding

The programme provides opportunities for you to develop and demonstrate the following:

After 120 credits of study (FdCert) you will be able to demonstrate:

FK1. A knowledge and understanding of a range of data collection and handling techniques applied within the context of Biomedical Science.

FK2. The ability to apply and explain theories, models, concepts and principles that underpin the study of Biomedical Science.

After 240 credits of study (CertHE) you will be able to demonstrate:

K1. An appreciation of the molecular, cellular, and physiological processes of life and the inter-relationship between them and normal functioning of the human body as well as diseases and their treatments.

K2. Knowledge in the methods of acquiring, interpreting, and analysing information with a critical understanding of the appropriate contexts for their use through the study of texts, papers, reports and data sets.

K3. Familiarity with the terminology, nomenclature of Biomedical Science and disease classification systems.

After 360 credits of study (DipHE) you will be able to demonstrate:

K4. Discuss a range of ways in which we can prevent, test, diagnose, treat, and manage disease.

K5. The ability to relate and apply the underpinning knowledge, appreciation and understanding gained within K1, K2 and K3 to the more complex content of subject specific sciences.

K6. Knowledge and understanding of the basic principles of research and analysis.

After 480 credits of study (BSc Hons) you will be able to demonstrate:

K7. Competence in the interpretation and analysis of biological, clinical, and chemical information.

K8. An awareness of the ethical and philosophical issues involved in Biomedical Science and the potential contribution research may make to the quality and sustainability of life.

K9. A systematic understanding of key aspects of Biomedical Science, gaining detailed knowledge, informed by contemporary aspects of a discipline.

Programme Outcomes – Skills and other Attributes

The programme provides opportunities for you to develop and demonstrate the following:

After 120 credits of study (FdCert) you will be able to demonstrate:

FS1. Academic, personal and professional skills needed to succeed in higher education.

FS2. The ability to apply a range of mathematical tools in the context of Biomedical Science.

FS3. Demonstrate specific skills, techniques and competencies needed to study and work in Biomedical Science

After 240 credits of study (CertHE) you will be able to demonstrate:

S1. Gather data safely and appropriately using a range of techniques in the laboratory, keeping accurate records in an appropriate format.

S2. Present information clearly and concisely using appropriate academic conventions both in written, visual and oral forms.

S3. Develop subject specific skills associated with good laboratory practice including the safe handling of specimens, sample preparation and the use of relevant instrumentation considering factors such as accuracy, calibration, precision, replicability and accurate interpretation of data

After 360 credits of study (DipHE) you will be able to demonstrate:

S4. Evaluate and apply a range of qualitative and quantitative techniques in the laboratory setting, using complex data sets to inform decision making and draw appropriate conclusions especially where there is a level of uncertainty.

S5. Recognise and apply subject-specific theories, paradigms, concepts or principles.

S6. Further develop the independent and transferable skills necessary for self-managed and lifelong learning (e.g., working independently, time management, organisational, knowledge transfer and digital skills)

After 480 credits of study (BSc Hons) you will be able to demonstrate:

S7. Present complex information to a range of technical and non-technical audiences in a balanced and authoritative manner using appropriate oral, written, and visual techniques.

S8. Plan, execute and present an independent piece of research under supervision, in which qualities such as time management, problem solving, and independence is evident.

S9. Recognise the moral and ethical issues of clinical and scientific investigations and appreciate the need for ethical standards and professional codes of conduct.

PROGRAMME FEATURES

Programme Overview

Biomedical Science is considered the branch of medical science specifically concerned with the laboratory diagnosis and monitoring of disease. Modern medicine is dependent on advances made by biomedical scientists who collectively explore the functioning of the human body in both a normal and diseased state with a view to unlocking the code within. Biomedical Science therefore encompasses many academic disciplines, for example, immunology, cell and molecular biology, biochemistry, pharmacology, physiology, and microbiology.

The Biomedical degree itself ultimately aims to research the pathobiology of human disease and specific knowledge of disease processes will arise from the study of laboratory specialist subjects such as clinical biochemistry, cellular pathology, haematology, and clinical genetics. The goal is for the graduate to understand and appreciate the complex science behind the cause, consequence, diagnosis, and treatment of disease.

The program is taught by academic staff with extensive teaching, research, and professional expertise. They bring together a wealth of knowledge and experience and are committed to providing high quality guidance and support. Furthermore, a substantial amount of laboratory based experiential learning is provided alongside small group lectures and tutorials, as well as some larger group sessions. Collectively these will allow students to broaden skills sets and ultimately enhance employability.

The relevance of the IBMS (Institute of Biomedical Science) and HCPC (Health and Care Professions Council) to the programme

Biomedical scientists work in healthcare settings like hospitals and labs to help diagnose diseases and monitor treatments.

The IBMS is a professional body for biomedical scientists in the UK. It sets professional standards, provides training, and promotes excellence in biomedical science practice. The IBMS offers membership to individuals working in various areas of biomedical science, such as clinical biochemistry, hematology, microbiology, and histopathology. It accredits degree programs and training courses, ensuring they meet the standards required for entry into the profession. The IBMS is involved in continuing professional development (CPD) and provides support for its members' career progression.

This programme received IBMS accreditation in 2024. Degrees accredited by IBMS, ensure you are studying a programme that will give you the right background, knowledge, and skills to move forward to train to become a biomedical scientist on successful completion of your degree. Degree accreditation means that your programme covers all elements of knowledge and skills that satisfy the QAA benchmark statements for Biomedical Science degrees.

To become a registered Biomedical Scientist, once you have received your degree you will need to secure a position as a trainee Biomedical Scientist. Whilst we offer an accredited degree, we don’t offer the placements or trainee positions that are the next step to HCPC registration as a Biomedical Scientist. However, we do work with employers within the NHS to keep you aware of

employment opportunities as they arise, and we do have a careers service that can help support you with looking for and applying to suitable posts.

Once in a trainee Biomedical Scientist post you will be required to complete the IBMS registration portfolio while employed. Once this is successfully completed you will attain a certificate of competence. This shows that you meet HCPC's standards of proficiency. This usually takes a year to complete and then, once successfully completed, you will be able apply for HCPC registration, which will allow you to call yourself, and practice as, a Biomedical Scientist.

The HCPC is a regulatory body that oversees and regulates various health and care professions in the UK, including biomedical scientists. Its primary role is to protect the public by setting standards of education, training, and conduct for healthcare professionals. The HCPC maintains a register of qualified professionals, including biomedical scientists, ensuring that those who meet its standards are eligible to practice legally.

Biomedical scientists must be registered with the HCPC to practice legally in the UK. Registration requires meeting specific education and training requirements and demonstrating ongoing competence through continuing professional development.

You can download the standards of proficiency set out by the HCPC here: https://www.ibms.org/resources/documents/hcpc-standards-of-proficiency-for-biomedical-scientists/ and more about the path into a career as a Biomedical Scientist and HCPC registration here https://www.ibms.org/registration/become-a-biomedical-scientist/. More information about the IBMS and its relevance to your career can be found at https://www.ibms.org/home/ and more information about the HCPC can be found here https://www.hcpc-uk.org/.

Being a student member of the IBMS

Students on an accredited degree programme are eligible to join IBMS as an 'e-student member'. https://www.ibms.org/join/join-ibms/estudent/

IBMS membership can be useful as a student offering you support as you study and additional benefits for £12 a year. You will get access to The Biomedical Scientist online journal and a weekly newsletter which will keep you up to date with the latest developments in Biomedical Science. This could be useful as you think about your career, apply for jobs, and look for ideas for your final year dissertation project. There is also the possibility to apply for awards, bursaries, and grants to help support your studies as well as online continuing professional development opportunities that could help you with your future career. Finally, students who are members, in January of their final year could be considered for the 'IBMS President's prize'.

Student Induction

We have a comprehensive university wide student induction to ensure parity of experience across all programmes.

https://my.cumbria.ac.uk/Student-Life/New-Students/

Specifically, within the science programme at Fusehill St. we have a welcome week induction followed by additional more tailored sessions during the first semester dependent on programme. The induction includes lab safety and time in the labs. The tailored sessions include academic

sessions by learning advisors and subject specific sessions by guests such as alumni and qualified scientists working in the sciences related to the programme of study.

https://my.cumbria.ac.uk/Student-Life/New-Students/Welcome-Week-Timetables/

The University Student Handbook https://my.cumbria.ac.uk/Student-Life/Student-Handbook/ contains all the administrative information you need to successfully complete your studies.

Learning and Teaching

Teaching

Overview of the methods of learning and teaching used on the programme.

At Level 4 you typically have around 12 contact hours per week, typically consisting of:

- 8 hours of lectures
- 4 hours of lab work
- 2 hour(s) of personal tutoring per semester in L4. Additional personal tutor meetings may be requested, and module tutors can also be approached for individual module support.

Independent Learning

When not attending scheduled learning activities you will be expected to continue learning independently through self-study. Students will be supported in a progressive acquisition of subject knowledge and skills, gradually advancing towards more independent learning whilst developing a reflective approach to personal progress. For example, exploring research and data analysis are studied at Level 5 preparing students for their Dissertation module at Level 6.

Teaching Staff

The Programme is taught by academic staff with extensive teaching, research and professional expertise. They bring together a wealth of knowledge and experience and are committed to providing high quality guidance and support. For example, we have subject specialists in molecular biology, microbiology and genetics as well as anatomy and physiology, pharmacology, toxicology, and experience in clinical practice.

Assessment

Level 3

Written Assignments, Presentations, Portfolios, Set Exercises

Level 4

Reports, Presentation, Portfolio, Written Exams, Written Assignment, Practical Skills Assessment

Level 5

Written Assignments, Presentation, Written Exams, Poster, Data interpretation and Dissemination, Research proposal, Project, Practical Skills Assessments, Poster

Level 6

Written Assignment, Presentation, Oral defence, Poster, Clinical case study, Dissertation Thesis, Practical Skills Assessment.

Feedback

You will receive both a grade and written feedback on your summative work against predefined grading criteria. You will also receive feedforward designed to help you develop your skills and approach for future submissions. Guidance and support on specific assignments will be provided by your module tutors. Your personal tutor will also be able to give you generic support and signpost you to specialist support services within the University should you need additional help. Summative (final) marks and feedback will be provided within the timeframes specified within the academic staff handbook and Centre for Academic Practice Enhancement (CAPE) academic toolkit.

Graduate Prospects

Jobs that relate directly to a Biomedical Science degree include:

- Biomedical Scientist
- Biotechnologist
- Clinical Research Associate
- Clinical Scientist, Biochemistry
- Clinical Scientist, Haematology
- Clinical Scientist, Immunology
- Forensic Scientist
- Microbiologist
- Physician Associate
- Research Scientist (Life Sciences)
- Research Scientist (Medical)
- Scientific Laboratory Technician
- Toxicologist

Jobs where a Biomedical Science degree can be a useful route of entry may include:

- Medicine
- Genetic Counsellor
- Medical Sales Representative
- Science Writer
- Teacher

Typical employers could be:

- Health And Safety Executive (HSE)
- Medical Research Council (MRC)
- NHS, Including NHS Blood And Transplant (NHSBT)
- UK Health Security Agency (UKHSA)
- Private Laboratories
- Pharmaceutical Companies

- Animal and Plant Health Agency (APHA)

MODULES

Year 1			
Code	**Title**	**Credits**	**Status**
UNIF3003	Essential University Skills 1	20	Compulsory
UNIF3005	Essential Biology	20	Core
UNIF3015	Scientific Investigation	20	Compulsory
UNIF3004	Essential University Skills 2	20	Compulsory
UNIF3016	Essential Chemistry	20	Core
UNIF3017	Environmental Sciences	20	Compulsory
Students exiting at this point with 120 credits would receive a FdCert Science			

Year 2			
Code	**Title**	**Credits**	**Status**
HSOB4101	Introductory Biochemistry	20	Compulsory
HSOB4102	Cell Biology	20	Compulsory
HSOB4003	Human Anatomy and Physiology	20	Compulsory
HSOB4004	Introductory Microbiology and Immunology	20	Compulsory
HSOB4005	Molecular Biology	20	Compulsory
HSOB4006	Practical Laboratory Science	20	Compulsory
Students exiting at this point with 240 credits would receive a CertHE Biology			

Year 3			
Code	**Title**	**Credits**	**Status**
HSOS5106	Exploring Research	20	Compulsory
HSOB5004	Human Genetics	20	Core
HSOB5005	Infection and Immunity	20	Core
HSOB5006	Medical Microbiology	20	Core
HSOB5109	Pharmacology and Physiology	20	Core
HSOB5010	Cellular and Molecular Pathology	20	Core
Students exiting at this point with 360 credits would receive a DipHE Biological Sciences			

Year 4			
Code	**Title**	**Credits**	**Status**
HSOB6201	Bioethics	20	Core
HSOB6002	Parasitology	20	Optional (But assessments are core)
HSOB6004	Toxicology	20	Optional (But assessments are core)
HSOB6005	Advanced Genetics	20	Optional (But assessments are core)
HSOS6106	Dissertation	40	Compulsory
HSOB6008	Clinical Biochemistry	20	Core
HSOB6109	Haematology and Transfusion Science	20	Core
Students exiting at this point with 420 credits would receive a BSc Biological Sciences **Students exiting at this point with 480 credits would receive a BSc (Hons) Biomedical Science** **Students transferred onto the non-accredited route exiting at this point with 480 credits would receive a BSc (Hons) Medical Biosciences**			

Additional Module Information
Students choose one optional module to study in year 3. Students make this choice by the start of SEM2 of year 2. The number of optional modules validated or adopted for a programme must be proportionate to the predicted cohort size so that modules are pedagogically and financially viable.

Key to Module Statuses	
Core modules	Must be taken and must be successfully passed.
Compulsory modules	Must be taken although it may be possible to condone/compensate as a marginal fail modules at levels 3 and 4 (within the limits set out in the Academic Regulations and provided that all core or pass/fail elements of module assessment have been passed).

	At levels 5 and 6 all modules deemed to be clinical specialisms cannot be compensated in line with the PSRB requirements of IBMS accreditation. Additionally, for these modules **where there is more than one assessment item both must be passed, and an aggregate pass mark is not allowed.** Therefore, at levels 5 and 6 only two modules, HSOS5106 Exploring Research and HSOS6106 Dissertation are exempt from this PSRB requirement.
Optional modules	Are a set of modules from which you will be required to choose one to study. Due to PSRB requirements **these modules cannot be compensated, and the assessments are core.**
Optional modules may be subject to availability and viability. If we have insufficient numbers of students interested in an optional module in any given academic year, this may not be offered. If an optional module will not be running, we will advise you as soon as possible and help you choose an alternative module. Optional modules are normally selected 3 - 5 months in advance.	

Timetables
Timetables are normally available w/c 1st August. Please note that while we make every effort to ensure timetables are as student friendly as possible, scheduled learning can take place on any day of the week. This programme may also be made available on an infill part-time basis at the discretion of the academic programme leader. In such cases, you will study modules alongside the full-time cohort(s) that are running at the time

ADDITIONAL INFORMATION

Student Support

The Student Enquiry Point is a simple way to contact Student Services. Using the Student Enquiry Point tile on the Student Hub you can submit an enquiry to any of the Student Services teams, which includes:

- Careers and Employability
- Chaplaincy for faith and spiritual wellbeing
- Mental Health and Wellbeing
- Digital Skills
- Disability and Specific Learning Difficulty (SpLD)
- International Student Support
- Library
- Money Matters
- Safeguarding
- Skills@Cumbria
- Sports and Fitness Facilities
- University Student Accommodation

As a student at the University of Cumbria you automatically become a member of the Students' Union. The Students' Union represents the views and interests of students within the University.

The Students' Union is led by a group of Student Representatives who are elected by students in annual elections. They also support approximately 400 Student Academic Reps within each cohort across the entire University. The Students' Union represent the views of their cohort and work with academic staff to continuously develop and improve the experience for all University of Cumbria students. You can find out more about who represents you at www.ucsu.me.

You can email at any time on studentvoice@cumbria.ac.uk.

Student Induction

We have a comprehensive university wide student induction to ensure parity of experience across all programmes.

https://my.cumbria.ac.uk/Student-Life/New-Students/

Specifically, within the science programme at Fusehill St. we have a welcome week induction followed by additional more tailored sessions during the first semester dependent on programme. The induction includes lab safety and time in the labs. The tailored sessions include academic sessions by learning advisors and subject specific sessions by guests such as alumni and qualified scientists working in the sciences related to the programme of study.

https://my.cumbria.ac.uk/Student-Life/New-Students/Welcome-Week-Timetables/

The University Student Handbook https://my.cumbria.ac.uk/Student-Life/Student-Handbook/ contains all the administrative information you need to successfully complete your studies.

Course Costs

Tuition Fees

Course fees can be found here for undergraduates and here for international students.

The following course-related costs are included in the fees:

- Use of lab equipment
- All PPE except for a white lab coat which the student will need to provide

Additional Costs

The following course-related costs are not included in the fees:

You will be expected to purchase a white lab coat, students should budget around £10 - £15 for this.

All students will need to purchase stationery and may wish to purchase some textbooks (but purchase of textbooks is not specifically required). Extra costs may also be applicable to cover field trips, membership fees etc. although such features are usually options within the course.
Books are reviewed annually and are therefore costs of these and the specific titles and editions are subject to change; course welcome information will provide an indicative list for the year. Most core textbooks are available via the University's library; however, students may wish to buy copies of any texts used to support your learning on your course. This could cost between £50 - £100 per year.

Costs of stationary vary over time, but students should budget for stationery and consumables for your own personal use. This should include notebooks, pens and pencils for taking notes in class and/or in the field. Students should also budget for the purchase of USB pen drives, as well as occasional printing and photocopying costs incurred in the preparation or submission of coursework. Whilst students will choose how much stationary is needed, expect to pay around £40 - £50 per year for these items.

Exceptions to the Academic Regulations

This programme operates in accordance with the University's Academic Regulations and Academic Procedures and Processes with the following permitted exceptions due to the requirements of the Institute of Biomedical Science (IBMS):

The following modules are not eligible for compensation as a marginal fail within the limits set out in the Academic Regulations. Additionally, for these modules where there is more than one assessment item both must be passed and an aggregate pass mark is not allowed.

HSOB5004, HSOB5005, HSOB5006, HSOB5109, HSOB5010, HSOB6201, HSOB6002, HSOB6004, HSOB6005, HSOB6008, HSOB6109

This is due to professional body regulations by IBMS leading to accreditation, however where necessary and applicable students may be eligible for compensation, which being transferred onto the non-accredited pathway. This will result in the differently named target award of BSc (Hons) Medical Biosciences.

External and Internal Benchmarks

Programme outcomes are aligned to the QAA Subject Benchmark Statements for:

Biomedical Science:-

http://www.qaa.ac.uk/en/Publications/Documents/SBS-Biomedical-sciences-15.pdf Institute of Biomedical Science https://www.ibms.org/

UoC Strategic Plan

UoC Learning, Teaching and Assessment Strategy

UoC Institutional Business Plans

UoC Academic Regulations and Academic Procedures and Processes

Disclaimer

This programme has been approved (validated) by the University of Cumbria as suitable for a range of delivery modes, delivery patterns, and delivery sites. This level of potential flexibility does not reflect a commitment on behalf of the University to offer the programme by all modes/patterns and at all locations in every academic cycle. The details of the programme offered for a particular intake year will be as detailed on the programme webpage: https://www.cumbria.ac.uk/study/courses/undergraduate/biomedical-sciences-with-integrated-foundation-year/