Programme Specification (Undergraduate) FOR ENTRY YEAR: 2024/25

Date created: 21/12/2022 **Last amended:** 06/01/2025 **Version no.** 2

1. Programme title(s) and code(s):

Medical Biochemistry BSc

Medical Biosciences (Biochemistry) BSc*

Medical Biochemistry Dip HE*

Medical Biochemistry Cert HE*

With optional Year in Industry or Year Abroad (in Europe, USA or Japan)

Notes

* An award marked with an asterisk is only available as an exit award and is not available for students to register onto.

a) HECOS Code

HECOS Code	%
[Insert HECOS Code]	[Insert %]
[Insert HECOS Code or delete row, as applicable]	[Insert % or delete row]
[Insert HECOS Code or delete row, as applicable]	[Insert % or delete row]
[Insert HECOS Code or delete row, as applicable]	[Insert % or delete row]

b) UCAS Code (where required)

C720

2. Awarding body or institution:

University of Leicester

3. a) Mode of study

Full-time

b) Type of study

Campus-based

4. Registration periods:

The normal period of registration is three years (four years for degrees 'with a year in industry/abroad')

The maximum period of registration five years (six years for degree 'with a year in industry/abroad')

5. Typical entry requirements

A-levels: typical offer AAB/ABB, normally including at least two relevant science subjects from Biology (preferred), Chemistry, Physics or Maths.

EPQ with A-levels: typical offer BBB + EPQ at grade B. A-level subjects to include two relevant science subjects from Biology (preferred), Chemistry, Physics or Maths. General Studies not accepted.

GCSE: At least Grade C in both English Language and Maths (if not held at A-level)

Access to HE Diploma: Pass relevant diploma with 45 credits at level three, with distinctions in some subjects.

International Baccalaureate: Pass Diploma with 32/30 points, including at least two relevant science subjects at Grade 6 at higher level.

BTEC Nationals: Pass relevant Diploma with DDD plus five GCSEs at B or above including two relevant sciences.

6. Accreditation of Prior Learning

Direct 2nd year entry is considered subject to completion of a level 4 programme of comparable content to those studies in year 1 of this programme, passing all modules and with a year mark of at least 65%.

7. Programme aims

The programme aims to provide:

• a flexible teaching and learning programme of high quality that is informed by an active research environment in which students develop their own interests

• a stimulating and supportive working environment;

• an education that will enable graduates to follow a variety of careers including higher degrees and research;

and to enable students to:

• have a broad appreciation of biomedical and related disciplines with an emphasis on human health and disease, and advanced knowledge of one or more areas including appreciation of aspects of the underpinning research;

• develop a range of skills including practical and transferable skills;

• gain experience, within the 4 year Industry/abroad options, by working in in an external research laboratory or an American, Japanese or another European University.

In addition, for the 'with a Year abroad' variants

- The 'Year Abroad' variant of this programme is offered in accordance with the University's standard specification for the experiential year abroad variant.

In addition, for the 'with Industry' variants

- The 'Year in industry' variant of this programme is offered in accordance with the University's standard specification for year in industry programme variants.
- To provide experience of applications of professional and discipline-specific skills in Industry and to reinforce knowledge through its use in different environments.

8. Reference points used to inform the programme specification

- QAA Benchmarking Statement
- Framework for Higher Education Qualifications (FHEQ)
- UK Quality Code for Higher Education

- University Education Strategy
- University Assessment Strategy [login required]
- University of Leicester Periodic Developmental Review Report
- External Examiners' reports (annual)
- United Nations Education for Sustainable Development Goals
- Student Destinations Data
- Relevant information from learned societies

9. Programme Outcomes

Unless otherwise stated, programme outcomes apply to all awards specified in 1. Programme title(s).

a) Discipline specific knowledge and competencies

i) Mastery of an appropriate body of knowledge

Intended Learning Outcomes	Teaching and Learning Methods	How Demonstrated?
Demonstrate an awareness of main principles of biological sciences, biomedical sciences and related disciplines and explain core concepts of their chosen discipline. Describe current areas of advance in their chosen specialisation(s) within Medical Biochemistry.	Lectures, tutorials, seminars, practical classes, computer classes, discussions, fieldwork (where appropriate), research projects, group work, directed reading, resource-based learning, and private study.	Examination, coursework (e.g. practical reports, written reports, data analysis, field reports, oral presentations, group reports, video production, poster production, dissertation)

ii) Understanding and application of key concepts and techniques

Intended Learning Outcomes	Teaching and Learning Methods	How Demonstrated?
Describe and apply safely appropriate experimental procedures in medical biochemistry and related disciplines. Apply a scientific approach to the solution of problems in the context of their chosen specializations and appreciate the rationale of experimental design. Explain core concepts of their chosen discipline.	Lectures, tutorials, seminars, practical classes, computer classes, discussions, fieldwork (where appropriate), research projects, group work, directed reading, resource-based learning, and private study.	Examination and coursework

iii) Critical analysis of key issues

Intended Learning Outcomes	Teaching and Learning Methods	How Demonstrated?
Demonstrate a capacity for scientific analysis of issues in the context of medical biochemistry and related disciplines.	Lectures, tutorials, seminars, practical classes, computer classes, discussions, fieldwork (where appropriate), research projects, group work, directed reading, resource-based learning, and private study.	Examination and coursework

iv) Clear and concise presentation of material

Intended Learning Outcomes	Teaching and Learning Methods	How Demonstrated?
Communicate orally and in writing concepts and arguments in medical biochemistry and related disciplines.	Lectures, tutorials, seminars, practical classes, computer classes, discussions, fieldwork (where appropriate), research projects, group work, directed reading, resource-based learning, and private study.	Examination and coursework

v) Critical appraisal of evidence with appropriate insight

Intended Learning Outcomes	Teaching and Learning Methods	How Demonstrated?
Demonstrate the capacity to analyse and criticise evidence from both experimental procedures and the literature.	Lectures, tutorials, seminars, practical classes, computer classes, discussions, fieldwork (where appropriate), research projects, group work, directed reading, resource-based learning, and private study.	Examination and coursework

vi) Other discipline specific competencies

Intended Learning Outcomes	Teaching and Learning Methods	How Demonstrated?
In the year in industry/abroad programmes, demonstrate the capacity to work in an industrial or other research laboratory or study in another European, American or Japanese University.	Laboratory work, research project	Research report, practical reports

b) Transferable skills

i) Oral communication

Intended Learning Outcomes	Teaching and Learning Methods	How Demonstrated?
Communicate orally, with clarity and coherence, concepts and arguments in medical biochemistry and associated biological sciences disciplines.	Tutorials, seminars, practical classes, computer classes, discussions, fieldwork (where appropriate), research projects, group work.	Oral presentations, group reports, tutorials.

ii) Written communication

Intended Learning Outcomes	Teaching and Learning Methods	How Demonstrated?
Communicate in writing, with clarity and coherence, concepts and arguments in medical biochemistry and associated biological sciences disciplines.	Tutorials, seminars, practical classes, computer classes, discussions, fieldwork (where appropriate), research projects, group work.	Examination and coursework

iii) Information technology

Intended Learning Outcomes	Teaching and Learning Methods	How Demonstrated?
Demonstrate the effective use of IT for accessing databases and scientific literature; manipulating, processing and presenting data; presenting written assignments.	Lectures, tutorials, seminars, practical classes, computer classes, discussions, fieldwork (where appropriate), research projects, group work, directed reading, resource-based learning, and private study.	Examination and coursework

iv) Numeracy

Intended Learning Outcomes	Teaching and Learning Methods	How Demonstrated?
Understand and manipulate numerical data, solve problems using a variety of methods and apply numerical and statistical techniques to data analysis.	Lectures, tutorials, seminars, practical classes, computer classes, discussions, fieldwork (where appropriate), research projects, group work, directed reading, resource-based learning, and private study.	Examination and coursework

v) Team working

Intended Learning Outcomes	Teaching and Learning Methods	How Demonstrated?
Demonstrate the ability to work as part of a group	Tutorials, group work, research projects.	Group reports, use of class data to generate practical reports

vi) Problem solving

Intended Learning Outcomes	Teaching and Learning Methods	How Demonstrated?
Apply a scientific approach to the solution of problems in the context medical biochemistry and appreciate the rationale of experimental design.	Lectures, tutorials, seminars, practical classes, computer classes, discussions, fieldwork (where appropriate), research projects, group work, directed reading, resource-based learning, and private study.	Examination and coursework

vii) Information handling

Intended Learning Outcomes	Teaching and Learning Methods	How Demonstrated?
Demonstrate the capacity to access a variety of resource materials and to analyse evidence from both experimental procedures and the literature.	Lectures, tutorials, seminars, practical classes, computer classes, discussions, fieldwork (where appropriate), research projects, group work, directed reading, resource-based learning, and private study.	Examination and coursework

viii) Skills for lifelong learning

Intended Learning Outcomes	Teaching and Learning Methods	How Demonstrated?
Demonstrate the acquisition of the skills and attributes necessary for lifelong learning, including: intellectual independence, effective time management, the ability to work as part of a team, the use of IT and the capacity to access and utilise a variety of resource materials.	Lectures, tutorials, seminars, practical classes, computer classes, discussions, fieldwork (where appropriate), research projects, group work, directed reading, resource-based learning, private study, career development programme.	Examination, coursework, personal development planning.

Year Abroad

In addition, for the 'with a Year abroad' variants the additional programme outcomes apply

Year in Industry

In addition, for the Year in Industry' variants the additional programme outcomes apply

10. Progression points

This programme follows the standard Scheme of Progression set out in Senate Regulations – see the version of Senate Regulation 5 governing undergraduate programmes relevant to the year of entry.

The following additional progression requirements for this programme have been approved:

- The Board of Examiners reserves the right to determine the progression of students who carry failed credits but have the right to a further resit: where these credits are in modules

that are pre-requisite for subsequent modules or where the student has a low overall level of attainment, the Board can require the student to resit the failed modules without residence rather than proceed to the next year carrying failed modules to be resat alongside the current modules.

In cases where a student has failed to meet a requirement to progress he or she will be required to withdraw from the course.

a) Year abroad

For the Year Abroad variant (for experiential Year Abroad only) the additional progression points apply

b) Year in Industry

For the Year in Industry variant, the additional progression points apply

11. Criteria for award and classification

This programme follows the standard scheme of undergraduate award and classification set out in Senate Regulations – see the version of *Senate Regulation 5 governing undergraduate programmes* relevant to the year of entry – with the following approved exception:

To gain the Royal Society of Biology accredited degree of BSc Medical Biochemistry students must pass the project module/s (BS3101/2, BS3201, BS3301/3102) with a mark of 40.00% or higher. Students who meet all other progression and awarding regulations but fail to meet this accreditation requirement may be awarded a non-accredited degree in Medical Biosciences (Biochemistry).

12. Special features

Students receive a broad education in biological sciences, biomedical sciences and related disciplines in the first year, along with training in key skills. As the course progresses into the second and third years the students have the flexibility to specialise progressively within the specified subject streams or to retain a broader perspective. Opportunities are available to take placements within related industries, or to study in other European, American or Japanese universities.

The School has a strong reputation for research and the range of staff expertise enables provision of research-led programmes that offer breadth and depth.

The number of students who can attend the BS2033 trip is limited to 20 students. Priority will be given in the first instance to students who are taking at least two of the following modules: BS2030, BS2032 and MB2020. If there are further vacancies, the trip will be opened to other students and selection will take place on a first come, first served basis.

For the Year Abroad variant (for experiential Year Abroad only) the additional Special Features apply

For the Year in Industry variant. The University recognises that undertaking a work placement as part the programme of study can enhance career prospects and provide added value, and as such this programme includes a 'year in industry' variant.

By experiencing real-world scenarios and applying skills and knowledge to a professional environment, students can gain a unique insight into how their studies can be utilised in industry. This will not only showcase their abilities to future employers but will also enhance their studies upon returning to university to complete your programme.

To understand the special features for year in industry undergraduate programme variants, this programme specification should be read in conjunction with the programme specification content

which can be found here. This outlines details including programme aims, support, progression and duration.

13. Indications of programme quality

External examiner evaluations.

Oversight by Programme Team, School Education Committee and Education Quality, Enhancement and Development Team.

14. External Examiner(s) reports

The details of the External Examiner(s) for this programme and the most recent External Examiners' reports for this programme can be found at exampapers@Leicester [log-in required]

UNIVERSITY OF LEICESTER

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Appendix 1: Programme structure (programme regulations)

The University regularly reviews its programmes and modules to ensure that they reflect the current status of the discipline and offer the best learning experience to students. On occasion, it may be necessary to alter particular aspects of a course or module.

Medical Biochemistry BSc

Updates to the programme

Academic Year affected	Module	Change
2025/26	BS2000 Research Methods	Module named changed to Research Skills 2 and moved to Semester 2
2025/26	BS2200 Research Skills 1	New core module
2025/26	BS2000 Research Methods	Module named changed to Research Skills 2 and moved to Semester 2
2025/26	BS2092 Molecular and Cell Biology	Was optional, now core

Level 4/Year 1 **2024/25**

Credit breakdown

Status	**Year long**	**Semester 1**	**Semester 2**
Core	n/a	60 credits	60 credits
Optional	n/a	n/a	n/a

120 credits in total

Core modules

Delivery period	Code	Title	Credits
Sem 1	BS1030	The Molecules of Life – An Introduction to Biochemistry and Molecular Biology	30 credits
Sem 1	BS1040	The Cell – An Introduction to Microbiology and Cell Biology	30 credits
Sem 2	BS1050	From Individuals to Populations – An Introduction to Genetics	15 credits
Sem 2	BS1060	Multicellular Organisation – An Introduction to Physiology, Pharmacology and Neuroscience	30 credits
Sem 2	MB1080	An Introduction to Medical Bioscience	15 credits

Notes
N/A

Level 5/Year 2 2025/26

Credit breakdown

Status	Year long	Semester 1	Semester 2
Core	n/a	45 credits	45 credits
Optional	n/a	15 credits	15 credits

120 credits in total

Core modules

Delivery period	Code	Title	Credits
Sem 1	BS2200	Research Skills1	15 credits
Sem 1	MB2050	Biochemical Approaches to Therapeutic Development	15 credits
Sem 1	BS2093	Protein Structure and Function	15 credits
Sem 2	BS2091	From Genes to Proteins	15 credits
Sem 2	BS2000	Research Skills 2	15 credits

Delivery period	Code	Title	Credits
Sem 2	BS2092	Molecular and Cell Biology	15 credits

Notes
N/A

Option modules

Delivery period	Code	Title	Credits
Semester 1	BS2009	Genomes	15 credits
Semester 1	BS2013	Physiology and Pharmacology	15 credits
Semester 1	BS2015	Physiology of Excitable Cells	15 credits
Semester 1	BS2030	Principles of Microbiology	15 credits
Semester 1	BS2094	Introduction to Python programming for Bioscientists	15 credits
Semester 1	MB2020	Medical Microbiology	15 credits
Semester 2	BS2004	Contemporary Techniques in Biological Data Analysis	15 credits
Semester 2	BS2014	Exercise Physiology and Pharmacology	15 credits
Semester 2	BS2026	Genes, Development and Inheritance	15 credits
Semester 2	BS2032	Immunology and Eukaryotic Microbiology	15 credits
Semester 2	BS2033	Immunology and Eukaryotic Microbiology (with Science Enterprise Trip)	15 credits
Semester 2	BS2040	Bioinformatics	15 credits
Semester 2	BS2066	Behavioural Neurobiology	15 credits
Semester 2	BS2077	Neurobiology and Animal Behaviour	15 credits
Semester 2	BS2078	A Field Guide to Evolution	15 credits

Notes
This is an indicative list of option modules and not definitive of what will be available. Option module choice is also subject to availability, timetabling, student number restrictions and, where appropriate, students having taken appropriate pre-requisite modules.

Level 6/Year 3 2026/27

Credit breakdown

Students taking an Experimental, Education or Field project:

Status	Year long	Semester 1	Semester 2
Core	30 credits	30 credits	15 credits
Optional	n/a	15 credits	30 credits

120 credits in total

Students taking an Analytical or Steered project:

Status	Year long	Semester 1	Semester 2
Core	n/a	45 credits	15 credits
Optional	n/a	15 credits	45 credits

Core modules

Delivery period	Code	Title	Credits
Sem 1	BS3101	Experimental Research Project A AND	15 credits
Year long	BS3102	Experimental Research Project B OR	30 credits
Sem 1	BS3201	Analytical Research Project OR	30 credits

Delivery period	Code	Title	Credits
Sem 1	BS3301	Education Research Project A AND	15 credits
Year long	BS3102	Experimental Research Project B	30 credits
Sem 1	BS3010	Gene Expression: Molecular Basis and Medical Relevance	15 credits
Sem 2	MB3001	Biochemical Mechanisms of Human Disease	15 credits

Notes
Students choose ONE project type from the above options. Research projects are worth 30 or 45 credits in total depending on type.

Option modules

*Students MUST choose **ONE** or **TWO** modules from BS3070 and BS3003*

Delivery period	Code	Title	Credits
Semester 1	BS3000	Evolutionary Genetics	15 credits
Semester 1	BS3015	Molecular and Cellular Immunology	15 credits
Semester 1	BS3031	Human Genetics	15 credits
Semester 1	BS3054	Molecular and Cellular Pharmacology	15 credits
Semester 1	BS3055	Molecular and Cellular Neuroscience	15 credits
Semester 1	BS3064	Comparative Neurobiology	15 credits
Semester 1	BS3068	Microbial Biotechnology	15 credits
Semester 1	BS3038	Biodiversity in Practice	15 credits
Semester 1	BS3070	Structural Biology	15 credits
Semester 1	NT3100	Sustainability Enterprise Partnership Project	15 credits
Semester 2	BS3003	Cancer Cell and Molecular Biology	15 credits

Delivery period	Code	Title	Credits
Semester 2	BS3011	Microbial Pathogenesis and Genomics	15 credits
Semester 2	BS3013	Human and Environmental Microbiomics	15 credits
Semester 2	BS3016	Neuroscience Futures	15 credits
Semester 2	BS3033	Physiology, Pharmacology and Behaviour	15 credits
Semester 2	BS3056	Cellular Physiology of the Cardiovascular System	15 credits
Semester 2	BS3069	Introduction to Astrobiology and the Origin of Life	15 credits
Semester 2	NT3200	Sustainability Enterprise Partnership Project	15 credits

Notes

This is an indicative list of option modules and not definitive of what will be available. Option module choice is also subject to availability, timetabling, student number restrictions and, where appropriate, students having taken appropriate pre-requisite modules.

Appendix 2: Module specifications

See undergraduate module specification database [login required] (Note - modules are organized by year of delivery).