UNIVERSITY OF LEICESTER

Programme Specification (Undergraduate) FOR ENTRY YEAR: 2022/23

Date created: n/a **Last amended: 06/03/2025** **Version no. 2**

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

BSc Medical Genetics C431

BSc Medical Biosciences (Genetics)*

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

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

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 is five years (six years for degrees '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.

For the aims, learning outcomes and application criteria for the GCSA Year Abroad please see https://le.ac.uk/study/undergraduates/courses/abroad

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 genetics 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 an external research laboratory or an American, Japanese or another European University.

8. Reference points used to inform the programme specification:

- QAA Benchmarking Statement
- University Education Strategy
- University Assessment Strategy [login required]
- University of Leicester Periodic Developmental Review Report
- External Examiners' reports (annual)

9. Programme Outcomes:

Intended Learning Outcomes	Teaching and Learning Methods	How Demonstrated?
(a) Discipline specific knowledge and competencies		
(i) Mastery of an appropriate body of knowledge		
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 genetics.	Lectures, tutorials, seminars, practical classes, computer classes, discussions, research projects, group work, directed reading, resource-based learning, and private study.	Examination, coursework (e.g. practical reports, written reports, data analysis, oral presentations, group reports, video production, poster production, dissertation)
(ii) Understanding and application of key concepts and techniques		
Describe and apply safely appropriate experimental procedures in medical genetics and associated biological sciences disciplines. Apply a scientific approach to the solution of problems in medical genetics and appreciate the rationale of experimental design. Explain core concepts of their chosen discipline.	Lectures, tutorials, seminars, practical classes, computer classes, discussions, research projects, group work, directed reading, resource-based learning, and private study.	Examination and coursework
(iii) Critical analysis of key issues		
Demonstrate a capacity for critical scientific analysis of issues in context of medical genetics and associated biological sciences disciplines	Lectures, tutorials, seminars, practical classes, computer classes, discussions, research projects, group work, directed reading, resource-based learning, and private study.	Examination and coursework

Intended Learning Outcomes	Teaching and Learning Methods	How Demonstrated?
(iv) Clear and concise presentation of material		
Communicate orally and in writing concepts and arguments in medical genetics and associated biological sciences disciplines	Lectures, tutorials, seminars, practical classes, computer classes, discussions, research projects, group work, directed reading, resource-based learning, and private study.	Examination and coursework
(v) Critical appraisal of evidence with appropriate insight		
Demonstrate the capacity to analyse and criticise evidence from both experimental procedures and the literature.	Lectures, tutorials, seminars, practical classes, computer classes, discussions, research projects, group work, directed reading, resource-based learning, and private study.	Examination and coursework
(vi) Other discipline specific competencies		
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		
Communicate orally, with clarity and coherence, concepts and arguments in medical genetics and associated biological sciences disciplines	Tutorials, seminars, practical classes, computer classes, discussions, research projects, group work.	Oral presentations, group reports, tutorials.
(ii) Written communication		
Communicate in writing, with clarity and coherence, concepts and arguments in Medical Genetics and associated Biological Sciences disciplines	Tutorials, seminars, practical classes, computer classes, discussions, research projects, group work.	Examination and coursework

Intended Learning Outcomes	Teaching and Learning Methods	How Demonstrated?
(iii) Information technology		
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, research projects, group work, directed reading, resource-based learning, and private study.	Examination and coursework
(iv) Numeracy		
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, research projects, group work, directed reading, resource-based learning, and private study.	Examination and coursework
(v) Team working		
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		
Apply a scientific approach to the solution of problems in the context of medical genetics and appreciate the rationale of experimental design.	Lectures, tutorials, seminars, practical classes, computer classes, discussions, research projects, group work, directed reading, resource-based learning, and private study.	Examination and coursework
(vii) Information handling		
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, research projects, group work, directed reading, resource-based learning, and private study.	Examination and coursework

Intended Learning Outcomes	Teaching and Learning Methods	How Demonstrated?
(viii) Skills for lifelong learning		
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, research projects, group work, directed reading, resource-based learning, private study, career development programme.	Examination, coursework, personal development planning.

10. Progression points:

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

The programme follows the standard scheme of progression set out in Senate Regulation 5 with the following additional requirements.

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

11. Scheme of Assessment

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 Genetics students must pass the project module/s (BS3101/2, BS3201, BS3301/3302) 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 (Genetics).

12. Special features:

In year 1, students receive a broad education in core bioscience disciplines with a focus on genetics, along with specific teaching in medical biosciences and key skills. In years 2 and 3, the core programme, including Medical Genetics modules specific to them, is supplemented with options from the Biological Sciences programme. 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.

13. Indications of programme quality

External examiner evaluations.

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]

Appendix 1: Programme structure (programme regulations)

Updates to the programme

Academic year affected	Module Code(s)	Update
2024/25	BS3013	Change of name to Human and Environmental Microbiology

BSc Medical Genetics C431

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

BSc Medical (Genetics)

Year 1

Semester 1

BS1030 The Molecules of Life – An Introduction to Biochemistry and Molecular Biology (30)

BS1040 The Cell - An Introduction to Microbiology & Cell Biology (30)

Semester 2

BS1050 From Individuals to Populations - An Introduction to Genetics (15)

BS1060 Multicellular Organisation - An Introduction to Physiology, Pharmacology and Neuroscience (30)

MB1080 An Introduction to Medical Bioscience (15)

Year 2

Semester 1

Core module:

BS2000 Research Topic (15)

MB2051 Current Issues in Medical Genetics (15)

Choose TWO OR THREE modules from:

Semester 1

BS2009 Genomes (15)

Semester 2

BS2026 Genes, Development & Inheritance (15)

BS2040 Bioinformatics (15)

Semester 1

For semester 1, make the credits add up to 60 by choosing from the modules listed below: [1]

BS2013 Physiology and Pharmacology (15)

BS2015 Physiology of Excitable Cells (15)

BS2030 Principles of Microbiology (15)

BS2092 Molecular and Cell Biology (15)

MB2020 Medical Microbiology (15)

Semester total: 60 credits

Semester 2

For semester 2, make the credits add up to 60 by choosing from the modules listed below: [1]

BS2004 Contemporary Techniques in Biological Data Analysis (15)

BS2014 Exercise Physiology and Pharmacology (15)

BS2032 Immunology and Eukaryotic Microbiology (15)

BS2033 Immunology and Eukaryotic Microbiology (with Science Enterprise Trip) (15)

BS2066 Behavioural Neurobiology (15)

BS2077 Neurobiology & Animal Behaviour (15)

BS2091 Biochemistry of Nucleic Acids (15)

BS2093 Protein Control in Cellular Regulation (15)

Semester total: 60 credits

With a Year in Industry (option)

Core module:

BS3400 Year in Industry Research Placement (0) (Year-long)

Year 3

Semester 1

Core modules

Research Project: 30/45 credits.

Choose ONE from the following five options:

i) BS3101 Experimental Research Project A (15) **and**

BS3102 Experimental Research Project B (30) (Year-long module)

OR

ii) BS3201 Analytical Research Project (30)

OR

iii) BS3301 Education Research Project A (15) **and**

BS3302 Education Research Project B (30) (Year-long module)

Plus core modules

BS3031 Human Genetics (15)

BS3000 Evolutionary Genetics (15)

Semester total: 60 credits

Semester 2

Core modules:

MB3050 Medical Genetics (15)

BS3011 Microbial Pathogenesis and Genomics (15)

For semester 2, make the credits add up to 60 by choosing from the modules listed below: [1]

BS3003 Cancer Cell & Molecular Biology (15)

BS3013	Human and Environmental Microbiology (15)
BS3016	Neuroscience Futures (15)
BS3033	Physiology, Pharmacology and Behaviour (15)
BS3056	Cellular Physiology of the Cardiovascular System (15)
NT3200	Sustainability Enterprise Partnership Project (15)

Semester total: 60 credits

[1] Module selection subject to timetable restrictions.

Appendix 2: Module specifications

See module specification database