UNIVERSITY OF LEICESTER

Programme Specification (Postgraduate)

FOR ENTRY YEAR: 2024/25

Date created: 16/4/2022 **Last amended:** 12/10/2023 **Version no.** 1 **Date approved by EQED:**
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1. Programme title(s) and code(s):

MSc Molecular Genetics

PGCert Molecular Genetics*

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	%
100948	100%

2. Awarding body or institution: University of Leicester

3. a) Mode of study Full-time

b) Type of study Campus-based

4. Registration periods:

MSc in Molecular Genetics

The normal period of registration is 1 year

The maximum period of registration 2 years

5. Typical entry requirements

Candidates with a first, upper second or lower second class honours degree (or equivalent) in the biological sciences or a related discipline will be considered.

Qualifications recognised as equivalent to a British University lower second-class degree (2.2) will also be considered, as will applicants who do not hold a bioscience degree but have significant and relevant industrial, professional, medical or veterinary experience. Such applicants will be considered on a case-by-case basis.

Students for whom English is not their first language are required to meet the minimum standard set by the University of Leicester (as specified in Senate Regulation 1: Regulations governing minimum entry qualifications and language requirements for taught programmes of study). This includes an IELTS minimum score of 6.5; a TOEFL iBT, minimum score of 90 or a Pearson Test of English (PTE) minimum score of 61.

6. Accreditation of Prior Learning

Accreditation of Prior Learning (APL) for exemption from modules is not accepted on this course

7. Programme aims

At the end of this programme, students should be able to:

- Understand the theory, and apply a wide range, of laboratory techniques used in bioscience research
- Develop expertise with critical analysis of scientific reports and report writing
- Develop group working skills in a range of laboratory and class-based environments
- Develop independent research skills needed for a range of bioscience careers
- Develop skills for sourcing, reviewing and critically assessing the literature relevant to your scientific discipline
- Develop core knowledge and understanding of current literature in your relevant scientific discipline

8. Reference points used to inform the programme specification

- QAA Benchmarking Statement
- Framework for Higher Education Qualifications (FHEQ)
- UK Quality Code for Higher Education
- Education Strategy
- University Assessment Strategy [log-in required]
- University of Leicester Periodic Developmental Review Report
- External Examiners' reports (annual)
- United Nations Education for Sustainable Development Goals
- Student Destinations Data

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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) Knowledge

Intended learning Outcome	Teaching methods	Learning Activities	Assessment Type
Students should be able to: Demonstrate knowledge of core molecular biology techniques used in genetics research.	Synchronous lectures, tutorials, practical classes, demonstrations, directed reading and project supervision.	Problem-solving activities, hands-on basic and advanced laboratory techniques incorporating demonstrations, online reading, multimedia instructional materials, literature searching and self-assessment knowledge tests.	Written practical reports, project presentation, project dissertation and project laboratory performance, end of module examinations (written and computer-based).
Students should be able to: Apply the principles of molecular biology techniques to research.	Synchronous lectures, tutorials, practical classes, demonstrations and project supervision.	Problem-solving activities, hands-on basic and advanced laboratory techniques incorporating demonstrations, online reading, multimedia instructional materials, literature searching and self-assessment knowledge tests.	Written practical reports, project presentation, project dissertation and project laboratory performance, end of module examinations (written and computer-based).

ii) Concepts

Intended learning Outcome	Teaching methods	Learning Activities	Assessment Type
Students should be able to:	Synchronous lectures, tutorials, practical classes, demonstrations,	Problem-solving activities, hands-on basic and advanced laboratory	Written practical reports, project presentation, project dissertation and

Intended learning Outcome	Teaching methods	Learning Activities	Assessment Type
Apply skills of critical thinking, interpretation, analysis, evaluation, and explanation of our current understanding of the molecular mechanisms used in genetics research.	directed reading and project supervision.	techniques incorporating demonstrations, online reading, multimedia instructional materials, literature searching and self-assessment knowledge tests.	project laboratory performance, end of module examinations (written and computer-based).

iii) Techniques

Intended learning Outcome	Teaching methods	Learning Activities	Assessment Type
Students should be able to: Apply a range of molecular biology techniques to investigate biological problems.	Laboratory practical classes, project supervision, lectures and tutorials.	Problem-solving activities, hands-on basic and advanced laboratory techniques incorporating demonstrations, online reading, multimedia instructional materials, literature searching and self-assessment knowledge tests.	Written practical reports, project presentation, project dissertation and project laboratory performance, end of module examinations (written and computer-based).
Students should be able to: Apply knowledge of laboratory safety procedures.	Laboratory practical classes, project supervision and lectures.	Demonstrations, online reading, multimedia instructional materials.	Written practical reports, project presentation, project dissertation and project laboratory performance, end of module examinations (written and computer-based).

iv) Critical Analysis

Intended learning Outcome	Teaching methods	Learning Activities	Assessment Type
Students should be able to: Critically appraise experimental data and critically analyse and review the literature.	Laboratory practical classes, project supervision, lectures and tutorials.	Problem-solving activities, hands-on basic and advanced laboratory techniques incorporating demonstrations, online reading, multimedia instructional materials,	Written practical reports, project presentation, project dissertation and end of module examinations (written and computer-based).

		literature searching and self-assessment knowledge tests.	

v) Presentation

Intended learning Outcome	Teaching methods	Learning Activities	Assessment Type
Students should be able to: Present experimental data and participate in scientific discussion.	Lectures, tutorials, project supervision.	Staff-led classroom discussion, writing practical reports, oral presentations/	Written practical reports, project presentation and project dissertation.

vi) Appraisal of evidence

Intended learning Outcome	Teaching methods	Learning Activities	Assessment Type
Students should be able to: Demonstrate competency in data searching, data analysis and data interpretation.	Lectures, workshops, tutorials	Problem-solving activities incorporating demonstrations, online reading, multimedia instructional materials, literature searching and self-assessment knowledge tests.	Written practical reports, project presentation, project dissertation and end of module examinations (written and computer-based).

b) Transferable Skills

i) Research Skills

Intended learning Outcome	Teaching methods	Learning Activities	Assessment Type
Students should be able to: Solve biological problems, analyse and interpret data and perform statistical analysis of their experimental data	Laboratory practical classes, project supervision, lectures and tutorials.	Problem-solving activities, hands-on basic and advanced laboratory techniques incorporating demonstrations, online reading, multimedia instructional materials	Written practical reports, project presentation, project dissertation and project laboratory performance, end of module examinations (written and computer-based).

Students should be able to:	Laboratory practical classes, project supervision, lectures and tutorials.	Problem-solving activities, hands-on basic and advanced laboratory techniques incorporating demonstrations, online reading, multimedia instructional materials, literature searching and self-assessment knowledge tests.	Written practical reports, project presentation, project dissertation and project laboratory performance, end of module examinations (written and computer-based).
Apply a range of molecular biology techniques to investigate biological problems.			

ii) Communication skills

Intended learning Outcome	Teaching methods	Learning Activities	Assessment Type
Students should be able to:	Lectures, tutorials	Problem-solving activities incorporating demonstrations, online reading, multimedia instructional materials and self-assessment knowledge tests.	Written practical reports, project presentation, project dissertation and project laboratory performance.
Write scientific reports competently, devoid of plagiarism, and deliver an effective oral presentation of their data.			

iii) Data Presentation

Intended learning Outcome	Teaching methods	Learning Activities	Assessment Type
Students should be able to:	Lectures, tutorials, laboratory practical classes and project supervision.	Problem-solving activities incorporating demonstrations, online reading, multimedia instructional materials and self-assessment knowledge tests.	Written practical reports, project presentation, project dissertation and project laboratory performance.
Effectively use statistical tests, perform image analysis and use presentation and graphical software for data presentation.			

iv) Information Technology

Intended learning Outcome	Teaching methods	Learning Activities	Assessment Type

Intended learning Outcome	Teaching methods	Learning Activities	Assessment Type
Students should be able to: Demonstrate competency in the use of general computing, standard and specialised computing software.	Lectures, tutorials, project supervision and workshops.	Problem-solving activities incorporating demonstrations, online reading, multimedia instructional materials and self-assessment knowledge tests.	Written practical reports, project presentation, project dissertation and project laboratory performance.

v) Problem Solving

Intended learning Outcome	Teaching methods	Learning Activities	Assessment Type
Students should be able to: Demonstrate the ability to solve both general biological and laboratory-based mathematical problems.	Lectures, tutorials, project supervision and workshops.	Problem-solving activities incorporating demonstrations, online reading, multimedia instructional materials and self-assessment knowledge tests.	Written practical reports, project presentation, project dissertation and project laboratory performance.

vi) Working relationships

Intended learning Outcome	Teaching methods	Learning Activities	Assessment Type
Students should be able to: Demonstrate the capacity to manage a project, time-management and organizational skills and be able to work effectively in a group/team.	Laboratory practical classes, tutorial and project supervision.	Group-based laboratory work	Written practical reports, project presentation, project dissertation and project laboratory performance.

vii) Managing learning

Intended learning Outcome	Teaching methods	Learning Activities	Assessment Type
Students should be able to: Have confidence in their ability to develop new practical skills, manage	Lectures, practical classes, Library and IT skills workshops and project supervision.	Laboratory practicals incorporating demonstrations, directed reading,	Written practical reports, project presentation, project dissertation and project laboratory performance.

information and develop specialization and interests.		and multimedia instructional materials.	

viii)   Career Management

Intended learning Outcome	Teaching methods	Learning Activities	Assessment Type
Students should be able to: Produce a professional cv, write applications, give presentations and be confident in applying for positions for either employment or further study.	Workshops by the Career Development Services unit, careers advice by personal tutors and project supervisors.	Writing, interview skills, case studies.	Student feedback at SSC's and student destination surveys. Project presentations

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10. Progression points

This programme follows the standard Scheme of Progression set out in Senate Regulations – see the version of *Senate Regulation 6 governing postgraduate programmes* relevant to the year of entry.

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) Course transfers

n/a

11. Criteria for award and classification

This programme follows the standard scheme of postgraduate award and classification set out in Senate Regulations – see the version of *Senate Regulation governing postgraduate programmes* relevant to the year of entry.

12. Special features

Through teaching on this programme, you will progressively develop your laboratory and critical analysis skills. You will begin by learning basic laboratory techniques and gradually progress to in-depth experimental approaches such as gene editing. In doing so, you will acquire the skills needed to become an independent laboratory researcher, irrespective of your initial level of laboratory experience.

The programme is designed to give you group working opportunities through the various taught laboratory, workshop and research project elements that are embedded in the programme. Importantly, the 6-month laboratory project will give you the opportunity to experience real research by working with a research group of your choice.

By enrolling of this programme, you will become part of our wider bioscience MSc cohort, providing opportunities to learn and socialize alongside your peers on other MSc programmes.

13. Indications of programme quality

Student feedback
External Examiners reports
Annual development review

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].

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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.

MSc in Molecular Genetics

Level 7/Year 1   Delivery Year 2024/25   Intake Month January   Mode of Study Full Time Structure

Credit breakdown

Status	Year long	Semester 1	Semester 2
Core	n/a	60 credits	120 credits
Optional	n/a	n/a	n/a

180 credits credits in total

Core modules

Delivery period	Code	Title	Credits
Semester 1	MB7008	Core Laboratory techniques	30 credits
Semester 1	MB7212	Experimental Design and Applications of Molecular Genetic Techniques in Research	30 credits
Semester 2	MB7009	Biomolecular Masters Research Project	120 credits

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 postgraduate [module specification database](#) (Note - modules are organized by year of delivery) [login-required]