UNIVERSITY OF LEICESTER

# Programme Specification (Postgraduate)

**Date amended: March 2015**

## 1. Programme Title(s):

MSc in Chronic Disease and Immunity
Postgraduate Certificate in Chronic Disease and Immunity (only available as an interim/exit award)

## 2. Awarding body or institution:

University of Leicester

## 3. a) Mode of study

Full time or part time

## b) Type of study

Campus-based

## 4. Registration periods:

The normal period of registration is **One Year** full time and **27 months** part time

The maximum period of registration is **Two Years** full time and **48 months** part time

## 5. Typical entry requirements:

- A first or second class honours degree in a biological science (e.g. Biochemistry, Biomedical Sciences, or Immunology), or
- A BTech with experience in a field related to chronic disease and inflammation, such as a health service or biopharmaceutical laboratory, or
- A medical or veterinary degree provided that the course included significant elements of molecular biology, cell biology and immunology

Students for whom English is not their first language are required to meet the minimum standard set by the University of Leicester (as laid down in Senate Regulation 1: Regulations governing minimum entry qualifications and language requirements for taught programmes of study)

Acceptable evidence of this includes:

- A first degree at a UK university,
- GCSE/O Level English Language at Grade C or above.
- WASSCE (West African Senior School Certificate Examination) English Grade 6
- An overall score of 6.5 in the British Council IELTS test (International English Language Testing System)
- A score of 90 in the Internet-based Test (IBT)) in TOEFL (Test of English as a Foreign Language)

## 6. Accreditation of Prior Learning:

Accredited prior learning will not be accepted for exemptions from modules on this programme.

## 7. Programme aims:

The programme aims:

i) To equip students with an understanding of the molecular and cellular biology of inflammation and its role in the progression of chronic disease, thus enhancing their career development opportunities in this internationally recognised area of need.

ii) To give students sufficient direct experience of research (during a six-month project placement within a research laboratory) to prepare them for direct employment as research scientists or for entry to a higher research degree (e.g. PhD) in the field of inflammation research (MSc only)

iii) To raise students' competence and confidence by providing a positive learning environment where they actively participate in their own academic development and develop their research skills.

## 8. Reference points used to inform the programme specification:

- Framework for Higher Education Qualifications
- External Examiners' Reports
- Student destinations data
- Student feedback
- Periodic Developmental Review, May 2012
- University of Leicester Learning and Teaching Strategy 2011-16
- The WHO Global Burden of Disease Study highlighting global importance of inflammatory chronic degenerative diseases
  - http://www.who.int/topics/global_burden_of_disease/en/
  - http://www.who.int/healthinfo/global_burden_disease/2004_report_update/en/index.html (Section 2 "Causes of death").

## 9. Programme Outcomes:

Note:- Unless otherwise stated in the tables below, these outcomes apply to both the MSc and to the PGCert that is described in Section 13

| Intended Learning Outcomes | Teaching and Learning Methods | How Demonstrated? |
|---|---|---|
| ***(a) Subject and Professional skills*** | | |
| **Knowledge** | | |
| Advanced knowledge of a wide range of theoretical and mechanistic material that provides the basis of research on inflammation and chronic disease | Lectures, tutorials, poster presentations, laboratory based practicals, extended research project (MSc only). | Module examinations, short written reports, practical write-ups, presentations, tutorial performance, extended essay on pre-set topic, research project dissertation (MSc only). |
| **Concepts** | | |
| Firm grasp of the disease progression paradigm and pathological mechanisms that underlie a wide range of chronic degenerative human diseases | Lectures, tutorials, extended research project (MSc only). | Module examinations, short written reports, presentations, tutorial performance, extended essay on pre-set topic, research project dissertation (MSc only). |

| Intended Learning Outcomes | Teaching and Learning Methods | How Demonstrated? |
|---|---|---|
| **Techniques** | | |
| Practical and theoretical competence in key experimental methods, competent use of standard and specialized equipment, knowledge of safety procedures and safety assessment. | Lectures, tutorials, laboratory classes, laboratory project supervision (MSc only), practical demonstrations and supervision. | Module examinations, reports on practical classes, project progress reports (MSc only), and research project dissertation (MSc only). |
| **Critical analysis** | | |
| Ability to weigh complex theoretical and technical evidence accurately and rigorously. | Lectures, tutorials, research project (MSc only). | Examinations, short written reports, and research project dissertation (MSc only). |
| **Presentation** | | |
| Competence in written, oral and poster presentation methods. Ability to discriminate between relevant and non-relevant material and to prioritise and present in a logical sequence. | Tutorials, research project supervision (MSc only), specimen material on Blackboard virtual learning environment. | Oral and poster presentations, and research project dissertation (MSc only). |
| **Appraisal of evidence** | | |
| Ability to appraise scientific results critically in the context of the published literature. | Tutorials, laboratory based practicals and research project supervision (MSc only). | Short written reports, reports on practical classes, oral presentations and research project dissertation (MSc only). |
| **Other subject & professional skills** | | |
| In the Erasmus programme, demonstrate the capacity to work in a research laboratory and study in another European University | Research project placement in a research laboratory in another European University | Practical work and placement report in a European University. |
| ***(b) Transferable skills*** | | |
| **Research skills** | | |
| Ability to perform literature review, experimental design, essential laboratory methods, problem solving, data analysis, and statistical analysis. | Lectures, problem solving in tutorials and practical classes, research project supervision (MSc only). | Tutorial performance, reports on practical classes, research project dissertation (MSc only). |
| **Communication skills** | | |
| Competence at report writing, presentations, posters. | Tutorials, practical classes, research project supervision (MSc only), peer marking, poster and oral presentations. | Tutorial performance, assessed practical reports, oral presentations, research project dissertation (MSc only). |

| Intended Learning Outcomes | Teaching and Learning Methods | How Demonstrated? |
|---|---|---|
| **Data presentation** | | |
| Ability to present information by a variety of graphical methods appropriate to a given audience. | Laboratory classes, statistics lectures and support, data presentation training during research project supervision (MSc only). | Laboratory practical reports, oral and poster presentations, research project dissertation (MSc only). |
| **Information technology** | | |
| Ability to apply information technology (IT) to the processing, presentation and handling of bibliographic, analytical and statistical information. | Laboratory classes, statistics lectures and support, bibliographic software training, bioinformatics and IT training during research project supervision (MSc only). | Laboratory practical reports, oral and poster presentations, research project dissertation (MSc only). |
| **Problem solving** | | |
| Ability to perform research problem solving | Lectures, problem solving in tutorials and practical classes, research project supervision (MSc only). | Tutorial performance, reports on practical classes, research project dissertation (MSc only). |
| **Working relationships** | | |
| Development of ability to work in groups/teams. | Tutorial group problem solving, practical classes in groups or pairs, research project supervision (MSc only) | Assessment of performance in tutorial groups, peer-assessed laboratory reports. |
| **Managing learning** | | |
| Development of organizational skills and ability to perform project management, and time management. | Laboratory practical classes. Supervision by personal tutor and by research project supervisor (MSc only). | Laboratory practical reports, research project dissertation (MSc only). |
| **Career management** | | |
| Ability to apply knowledge and skills to long-term career goals and employability. | Supervision by personal tutor and by research project supervisor (MSc only). | Student evaluation of the course by questionnaire at the end of Semester 1 and oral and written feedback on career destinations approximately 6 months after graduating. Incorporation of career destination data into considerations during the Annual Development Review process within the College of Medicine, Biological Sciences & Psychology. |

## 10. Special features:

This department also offers an MSc in Infection and Immunity which has been successful since its inception in 2007 in preparing a number of graduates for entry into PhD programmes in that field. The layout, management and mode of delivery of this present programme is closely based

on that in the MSc in Infection and Immunity and complements that programme. However, the MSc in Chronic Disease & Immunity also uses a large volume of distinct teaching material specific to inflammation biology.

## 11. Indications of programme quality:

This programme is closely modelled on the MSc in Infection and Immunity (see 10 above) which has been commended by the external examiner for the quality of its teaching and student support.

## 12. Scheme of Assessment

As defined in Senate Regulation 6: Regulations governing Taught Postgraduate Programmes of Study

Approaches to assessment

A varied approach to assessment is used which allows students to demonstrate their knowledge and their own particular strengths, independent of their cultural and language background. Modules are assessed by essays, short written reports, presentations, congress reports, posters and examinations. The examinations include multiple choice, short answer questions and preset essays.

Work is second marked and moderated where appropriate.

## 13. Progression points

As defined in Senate Regulation 6: Regulations governing Taught Postgraduate Programmes of Study

**Progression criteria to Semester 2 of the MSc.**

These will be in accordance with Senate Regulation 6.

**Withdrawal or progression**

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

**Exceptional exit from the course at the end of Semester 1.**

Students who pass the taught element of the course (the 60 credits of Semester 1), but are unable to undertake or complete the Semester 2 research project, are eligible for a Postgraduate Certificate in Chronic Disease & Immunity. This represents an exceptional exit route, and students are not permitted to register purely for this Postgraduate Certificate.

## 14. Rules relating to re-sits or re-submissions:

As defined in Senate Regulation 6: Regulations governing Taught Postgraduate Programmes of Study

Candidates will be deemed to have failed a module if their credit-weighted average mark for all assessments on the module (after rounding up to the nearest percentage point) falls below 50%. Candidates will be allowed to re-sit examinations or resubmit course work in relation to an individual module on one occasion only. The number of modules where re-sits or resubmissions are allowed will be in accordance with Senate Regulation 6. . The mark obtained for resubmitted work or an examination re-sit will be capped at 50%.

## 15. Additional information [e.g. timetable for admissions]

There will be only one intake per year (in approximately September – the precise date to be agreed by the Board of Studies for the Life Sciences MSc Programmes in Biomedical Sciences).

**16. External Examiners**

The details of the External Examiner(s) for this programme and the most recent External Examiners' reports can be found here.

## Appendix 1: Programme structure (programme regulations)

MSc - Total credits = 180 Duration = 12 months

Students normally take the course as a full-time 12 month course, but there is provision for students who wish to do so to take it over 2 years, taking the taught modules in Semester 1 of Year 1 and the research project in Semester 2 of year 2.

Overview

The MSc in Chronic Disease and Immunity is a 1 year full-time course designed to provide detailed training both in the theory and practical techniques involved in studying the immunology and molecular and cellular biology involved in the initiation and progression of chronic inflammatory diseases. The 4 component modules of this programme are described in the attached module specifications (Appendix 2). The integration of these modules and the rationale behind them are described below.

Semester 1 comprises 5 compulsory taught modules:

| Module code | Module title | Credits |
|---|---|---|
| MB7318 | Core Theory & Practical Techniques in Chronic Disease and Inflammation | 20 |
| MB7319 | Immunity & Inflammation | 20 |
| MB7315 | Advanced Topics in Chronic Disease & Inflammation | 20 |

To ensure consistent spreading of the workload throughout the Semester, Modules MB7318 and MB7319 are taught principally within Weeks 1-8; Module MB7315 is taught principally within Weeks 6-12. However, the practicals for Module MB7318 are taught throughout the semester to maximise flexible use of teaching laboratories. Examinations and continuous assessment for these modules are spread evenly throughout Weeks 3 – 12.

Semester 2 comprises a 6-month project placement in a research laboratory within the University of Leicester.

| Module code | Module title | Credits |
|---|---|---|
| MB7316 | MSc Laboratory Research Project | 120 |

The overall structure of the programme is based on that of the successful MSc Infection and Immunity programme which is run by the Department of Infection, Immunity & Inflammation.

## Appendix 2: Module Specifications

See module specification database http://www.le.ac.uk/sas/courses/documentation and further detail is provided below:

**Semester 1**

**Module MB7318 Core Theory & Practical Techniques in Chronic Disease and Inflammation**

This module teaches the fundamental molecular and cellular mechanisms and techniques that are needed to study chronic disease progression. Thirteen of the theory lectures are core lectures that are shared with the other laboratory-based life science MSc programmes currently run within the College of Medicine, Biological Sciences & Psychology i.e.

- Molecular Genetics,
- Cancer Cell and Molecular Biology,
- Molecular Pathology and Therapeutics of Cancer, and
- Infection and Immunity.

A series of tutorials emphasizes the links between the theory lectures and chronic inflammatory disease progression.

This module also contains a series of six practicals, and data handling tutorials embedded in each of the practicals. This series is accompanied by technical demonstrations and a practical introduction to basic laboratory skills. It covers basic techniques in molecular biology and cell biology and gives insights into protein detection and cell culture.

This module is similar to the module MB7308 in the MSc Infection and Immunity, but the set of core lectures used is modified to give greater emphasis to eukaryotic rather than prokaryotic cell biology.

The practicals of Module MB7318 are shared with Module MB7308 of the MSc Infection & Immunity Programme

**Module MB7319 Immunity & inflammation**

This module comprises a series of lectures and tutorials dealing with the fundamental mediators of the immune response and the mechanisms that underlie successful resistance to infection and tissue response to injury.This module focusses particularly on the principal cell types and chemical mediators which bring about inflammation, and the drugs which can be used to control it.

The Immune Response component of Module MB7319 is shared with Module MB7309 of the MSc Infection & Immunity Programme

**Module MB7315 Advanced Topics in Chronic Disease and Inflammation**

This module runs in the second half of Semester 1 (approximately weeks 7-12) and comprises lectures, tutorials and student-led presentations on more advanced subjects within the fields of chronic disease and inflammation. It builds on the Immunity & Inflammation Module MB7319 and serves to integrate that material with topical and “cutting-edge” developments on the role of inflammation in the progression of specific chronic degenerative diseases. This is module is designed specifically for this programme.

**Semester 2**

**Module MB7316 MSc Laboratory Research Project**

This module comprises an six -month research project placement within the Department of Infection, Immunity and Inflammation; or a research laboratory within the College. Students choose a research project from a pool of submitted outlines after meeting with potential supervisors. Before starting

the experimental work, students are required to submit (for approval) a document which summarises the background of the work to be undertaken, details the hypothesis to be tested and the experimental methods to be used. At the end of the experimental work, the student produces an assessed dissertation of up to 15,000 words.

Students may undertake an approved laboratory research project in a partner University under the Erasmus scheme as part of the Research Project module MB7316. Students are advised to avail themselves of the introductory language courses offered by the Language Centre and/or the intensive courses run by the host institution, prior to commencing the project. A mark for laboratory performance credits will be awarded by the partner institution: all other assessments will be marked by University of Leicester staff.