MSc Biomedical Science (Infection and Immunity)

Programme Specification

1. Programme title	MSc Biomedical Science (Infection and Immunity)
2. Awarding institution	Middlesex University
3a Teaching institution	Middlesex University / HENDON
3b Language of study	English
4a Valid intake dates	Sept for each campus
4b Mode of study	FT/PT for each intake
4c Delivery method	☒ On-campus/Blended ☐ Distance Education
5. Professional/Statutory/Regulatory body	n/a
6. Apprenticeship standard	n/a
7. Final qualification(s) available	MSc/PGDip/PGCert Biomedical Science (Infection and Immunity) PGCert Biomedical Science
8. Year effective from	**2022**

9. Criteria for admission to the programme
Candidates must meet at least one of the first two criteria below:

i. A good honours degree (minimum 2.ii) or equivalent qualification, in an appropriate subject.
ii. Applicants with other qualifications and / or substantial work experience in biomedical science will also be considered under the Recognition of Previous Learning (RPL) scheme. Past learning or experience will be mapped against existing programme modules within the programme and the mapping will be considered by the Faculty RPL Sub-committee.
iii. Overseas Candidates should also be competent in English and have achieved, as a minimum, one of the following standards: IELTS 6.5 (with minimum 6.0 in all components); TOEFL 84.
Applicants with a disability can enter the programme following assessment to determine if they can work safely in the laboratory. The programme team have experience of adapting teaching provision to accommodate a range of disabilities and welcome applications from students with disabilities.

10. Aims of the programme

The programme aims to:

1. Facilitate the development of specialist knowledge of the fundamental principles and recent advances in infection and immunity which are required for careers in infection control, pharmaceutical industries and academia.
2. Give students a thorough grounding in the molecular and cellular mechanisms underpinning the immune response to a variety of different infectious agents.
3. Enable students to develop a high level of understanding of the aetiology, transmission, pathogenesis and control of human infectious disease.
4. Provide students with sufficient detailed information about the modern technologies used in diagnostics, including the analysis of large data sets and research into product development, to enable them to apply these to complex problem solving in the investigation and treatment of disease.
5. Enable students to understand and use the principles of laboratory management, safety, quality control, evaluation of ethics relating to research and use of statistical methods in their professional lives.
6. Develop student's specialist practical and analytical skills to design and implement an individual research project in the area of infection and immunity

11. Programme outcomes*

A. Knowledge and understanding

On completion of this programme the successful student will have knowledge and understanding of:
A1. The cellular and molecular mechanisms underlying the immune response to infection.
A2. The transmission, epidemiology, pathogenesis and control of common human infectious diseases.

A3. The theories and practices required to become an ethical leader.
A4. The application of different research methods.

Teaching/learning methods
Students gain knowledge and understanding through lectures, seminars and laboratory work, self-study (both directed and self-directed) and online learning.

Assessment Method
Students' knowledge and understanding is assessed by both summative and formative assessments, which include seminar presentations, written assignments, including case-studies and laboratory reports.

B. Skills
On completion of this programme the successful student will be able to:
B1. Analyse, present, judge, interpret and critically evaluate biomedical data.
B2. Design and carry out a research project to test a novel hypothesis relevant to discipline.
B3. Demonstrate a comprehensive understanding of advanced biomedical laboratory techniques in accordance with health and safety guidelines
B4. Demonstrate effective communication and presentation skills.

Teaching/learning methods
Students learn skills through analysis of research literature and undertaking a research project that they have designed themselves, including consideration of the inherent ethical and health and safety implications.

Assessment Method
Students' skills are assessed by written assignments, presentations, and research project. Students' practical skills are assessed by laboratory reports and dissertation.

12. Programme structure (levels, modules, credits and progression requirements)

12. 1 Overall structure of the programme

Full-time

Autumn Term (Oct)

BMS4887 Experimental Design and Statistics (15 credits)

BMS4977 Advanced Bioanalytical Techniques (15 credits)

BMS4517 Immunology (30 credits)

Winter Term (Jan)

BMS4477 Bioethics (15 credits)

BMS4677 Leadership and Management (15 credits)

BMS4427 Human Infectious Diseases (15 credits)

BMS4437 Control of Infectious Disease (15 credits)

Summer Term (June-Sept)

BMS4997 Research Project (60 credits)

Part-time

Year One

Autumn Term (Oct)

BMS4517 Immunology (30 credits)

Winter Term (Jan)

BMS4427 Human Infectious Diseases (15 credits)

BMS4437 Control of Infectious Disease (15 credits)

Summer Term (June-Sept)

Year Two

Autumn Term (Oct)

BMS4887 Experimental Design and Statistics (15 credits)

BMS4977 Advanced Bioanalytical Techniques (15 credits)

Winter Term (Jan)

BMS4477 Bioethics (15 credits)

BMS4677 Leadership and Management (15 credits)

Summer Term (June-Sept)

BMS4997 Research Project (60 credits)

Successful completion of all modules (180 credits) will result in the full award of MSc Biomedical Science (Infection and Immunity). Completion of all specialist taught modules only (60 credits) will lead to the award of PGCert Biomedical Science (Infection and Immunity). Completion of the core taught modules only (60 credits) will lead to the award of PGCert Biomedical Science.

Completion of all core and specialist taught modules, but non-completion of the 60-credit dissertation module will lead to the award of PGDip Biomedical Science (Infection and Immunity).

12.2 Levels and modules

Level 7

COMPULSORY
BMS4517 Immunology
BMS4427 Human Infectious Disease
BMS4437 Control of Infectious Disease
BMS4677 Leadership and Management
BMS4477 Bioethics
BMS4887 Experimental Design and Statistics
BMS4977 Advanced Bioanalytical Techniques
BMS4997 Research Project

OPTIONAL
None

PROGRESSION REQUIREMENTS
To progress onto the project/MSc stage, students must pass 105 credits including BMS4887.

12.3 Non-compensatable modules

Module level Level 7
Module code BMS4517, BMS4427, BMS4437, BMS4677, BMS4477, BMS4887, BMS4977, BMS4997

13. Information about assessment regulations

This programme will run in line with general University Regulations:

14. Placement opportunities, requirements and support (if applicable)

Not applicable

15. Future careers / progression

The programme should appeal to graduates interested in developing their knowledge and skills in the field of infection and immunity for a career in the healthcare sector, academia, or industrial research and development. They might also be expected to find employment in the fields of infection control and vaccine and assay development within the pharmaceutical Industry.

16. Particular support for learning (if applicable)

We have specialist laboratory facilities for the development of practical skills. Our laboratories for research and postgraduate teaching are based at Hendon. These include a molecular biology lab for techniques such as DNA sequencing, real-time PCR, electrophoresis, Tissue Culture facility, Accuri C6 flow cytometer as well as a fully equipped proteomics facility. Access to specialist journals will be provided by Middlesex University Library. For ease of access for students based at Hendon, the library has facilities for inter-library photocopying of any articles required. Other articles may be obtained from the British Library in London where a similar arrangement for photocopying articles exists.

Applicants with a disability can enter the programme following an assessment of their needs to determine if they can work safely in the laboratory. The programme team have experience of adapting the programme to accommodate a range of disabilities in students on the biomedical science programmes and welcome applications from such students. This will be administered by the Dyslexia and Disability Service in conjunction with the programme leader. Learning resource services and facilities at Middlesex include a CAL suite and internet access as well as English learning and Language Support Learning resources and other support for modules is delivered via MyUniHub.

17. HECos code(s) CAH02-03-10

18. Relevant QAA subject benchmark(s) Biomedical Sciences

19. Reference points

Internal Documentation:
Middlesex University (2021) Middlesex University Regulations. London, MU

External Documentation:

1. Quality Assurance Agency (2020) QAA Master's Degree Characteristics. London, QAA

20. Other Comments

Please note programme specifications provide a concise summary of the main features of the programme and the learning outcomes that a typical student might reasonably be expected to achieve if s/he takes full advantage of the learning opportunities that are provided. More detailed information about the programme can be found in the rest of your programme handbook and the university regulations.

21. Curriculum map for *MSc Biomedical Science (Specialism)*

This section shows the highest level at which programme outcomes are to be achieved by all graduates, and maps programme learning outcomes against the modules in which they are assessed.

Programme learning outcomes

Knowledge and understanding

A1 The cellular and molecular mechanisms underlying the immune response to infection.

A2 The transmission, epidemiology, pathogenesis and control of common human infectious diseases

A3 The theories and practices required to become an ethical leader

A4 The application of different research methods

Skills

B1 Analyse, present, judge, interpret and critically evaluate biomedical data

B2 Design and carry out a research project to test a novel hypothesis relevant to discipline.

B3 Demonstrate a comprehensive understanding of advanced biomedical laboratory techniques in accordance with health and safety guidelines

B4 Demonstrate effective communication and presentation skills both individually and as part of a team.

Programme outcomes A1 A2 A3 A4 B1 B2 B3 B4

Highest level achieved by all graduates 7 7 7 7 7 7 7

Module title	Module code by level	A1	A2	A3	A4	B1	B2	B3	B4
Leadership and Management	BMS4677			x					
Bioethics	BMS4477			x					
Experimental Design and Statistics	BMS4887				x	x	x		
Advanced Bioanalytical Techniques	BMS4977					x		x	
Research Project	BMS4997	x	x		x	x	x	x	x
Human Infectious Disease	BMS4427		x			x		x	x
Control of Infectious Disease	BMS4437		x			x		x	
Immunology	BMS4237	x				x		x	x