BSc (Hons) Medical Science
BSc (Hons) Medical Science with Foundation Year

Programme Specification

1. Programme title	BSc (Hons) Medical Science BSc (Hons) Medical Science with Foundation Year
2. Awarding institution	Middlesex University
3a. Teaching institution	Middlesex University
3b. Language of study	English
4a. Valid intake dates	September
4b. Mode of study	FT/PT
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	BSc (Hons) Medical Science BSc (Hons) Medical Science with Foundation Year BSc Medical Science DipHE Medical Science Cert HE Biomedical Studies
8. Academic year effective from	2024/25

9. Criteria for admission to the programme
For the BSc (Hons) Medical Science, candidates require Maths and English equivalent to at least GCSE grade 4 as well as minimum 112 UCAS tariff points from one of the following awards: • A-levels (including two A levels with at least one science subject, preferably in biology or chemistry at grade C or better). • Or Pearson's National Diploma or Certificate in biology, chemistry, forensic science, laboratory and industrial science, healthcare science or medical science. • Or Access course in applied science, clinical physiology, human or life sciences, medical or paramedical science, or science. • Or high school equivalent, such as an International Baccalaureate.

Candidates, who meet the Maths and English requirements but not the level 3 requirements, would be considered for the BSc (Hons) in Medical Science with Foundation Year. Please refer to the programme specification for the Foundation Year for the criteria for admission to the BSc (Hons) Medical Science with Foundation Year programme.

Applicants must be competent in English to study this course. For those for whom English is not their first language, the most commonly accepted evidence of English language ability is IELTS 6.0 (with minimum 5.5 in all components) or an equivalent English qualification.

Candidates can make a claim for entry onto the programme with or without advance standing on the basis of either of prior certificated learning or experiential learning through the Recognition of Prior Learning scheme.

10. Aims of the programme

The programme aims to:

- Develop knowledge, skills, attitude and ethical values in the field of medical/biomedical sciences.
- Enable the student to competently carry out diagnostic/research techniques.
- Develop the student's ability to apply scientific methods and approaches to research, development and innovation.
- Develop a range of graduate competencies required for effective life-long learning, communication, team working and leadership.
- Prepare the student for employment in the medical/biomedical sciences field and progress into postgraduate studies in these fields.

11. Programme outcomes*

A. Knowledge and understanding

On completion of this programme the successful student will have knowledge and understanding of:

1. Normal and abnormal biochemical, cellular and physiological processes.
2. The principles of diagnosis and management of human disease.
3. The importance of scientific research in the advancement of medical practice.
4. Therapeutic and toxic effects of drugs on the human body.
5. Analytical techniques used in medical diagnostics or research.
6. Sustainability principles and their application to scientific practice.

Teaching/learning methods

Students gain knowledge and understanding through on-campus or occasional on-line interactive sessions, and, laboratory classes including peer presentations, case-studies, debates, designing and undertaking a research project, role-play and practical experimentations.
Short key concept videos will be provided throughout modules.

Assessment methods
Students' knowledge and understanding are assessed by summative and formative assessment, including peer presentations, laboratory reports, case studies, essays, objective-structured practical assessments and quizzes.

B. Skills

On completion of this programme the successful student will be able to:

1. Critically evaluate research evidence in the context of current theory or practice. (GC1, 3,4,5,7, 8)
2. Solve clinical problems. (GC 4, 6, 7 & 8)
3. Present information in the most effective format to communicate ideas clearly. (GC 3 & 8)
4. Design and undertake a research project. (GC 1-8)
5. Perform a wide range of common medical laboratory techniques competently, and in accordance with health and safety guidelines. (GC 1, 3, 4, 5, 6, 7, 8)

Teaching/learning methods
Students learn skills through on-campus or occasional on-line interactive session and laboratory classes including practical experimentations, discussions, peer presentations, a research project, debates, independent reading, group work, problem-based learning exercises, structured and directed learning, analysis of case studies, and through reflection, and development of portfolio material and practical laboratory reports.

Assessment methods
Students' skills are assessed by formative and summative assessment as laboratory reports, essays, quizzes, case studies, and peer presentation, work in the form of portfolios, and project and research work.

These assessment methods are designed to evaluate graduate competencies (GCs) including:

1. Leadership and Influence
2. Entrepreneurship
3. Communication, Empathy and Inclusion
4. Curiosity and Learning
5. Collaborative Innovation
6. Resilience and Adaptability
7. Technological Agility
8. Problem Solving and Delivery

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

12.1 Structure of the programme

BSc (Hons) Medical Science – Full-Time
Year 1

- Semester 1: Laboratory and Professional Skills (BMS1565, 30 credits), Human Sciences (BMS1514, 30 credits)
- Semester 2: Cell Sciences and Genetics (BIO1557, 30 credits), Biomolecular Science (BMS1555, 30 credits)

Year 2

- Semester 1: Molecular Biology and Clinical Genetics (BMS2115, 30 credits), Clinical Sciences and Clinical Biochemistry (BMS2114, 30 credits)
- Semester 2: Research Methods and Science Innovation (BMS2586, 30 credits), Options - Immunology and Infection Science (BMS2116, 30 credits) **or** Diet and Health (BMS2435, 30 credits) **or** Neuropharmacology (BMS2415, 30 credits)

Year 3

- Semester 1: Pharmacology and Toxicology (BMS3311, 30 credits), Options - Clinical Immunology and Medical Microbiology (BMS3117, 30 credits) **or** Clinical Nutrition (BMS3446, 30 credits) **or** Drug Design and Development (CHE3736, 30 credits)
- Semester 2: Clinical Diagnostics (BMD3314, 30 credits), Dissertation and Professional Development (BM3506, 30 credits)

BSc (Hons) Medical Science– Indicative part-time structure

Year 1

- Semester 1: Laboratory and Professional Skills (BMS1565, 30 credits)
- Semester 2: Biomolecular Science (BMS1555, 30 credits)

Year 2

- Semester 1: Human Sciences (BMS1514, 30 credits)
- Semester 2: Cell Sciences and Genetics (BIO1557, 30 credits)

Year 3

- Semester 1: Molecular Biology and Clinical Genetics (BMS2115, 30 credits)
- Semester 2: Research Methods and Science Innovation (BMS2586, 30 credits)

Year 4

- Semester 1: Clinical Sciences and Clinical Biochemistry (BMS2114, 30 credits)
- Semester 2: Options - Immunology and Infection Science (BMS2116, 30 credits), Diet & Health (BMS2435, 30 credits), Neuropharmacology (BMS2415, 30 credits)

Year 5

- Semester 1: Pharmacology & Toxicology (BMS3311, 30 credits)
- Semester 2: Clinical Diagnostics (BMS3314, 30 credits)

Year 6

- Semester 1: Options - Clinical Immunology and Medical Microbiology (BMS3117, 30 credits), Clinical Nutrition (BMS3446, 30 credits), Drug Design and Development (CHE3736, 30 credits)
- Semester 2: Dissertation and Professional Development (BMS3506, 30 credits)

To exit with a CertHE students must achieve 120-210 credits at level 4 or above.
To exit with a DipHE, students must achieve 240-270 credits at level 4 or above, including 90 credits at level 5 or above.
To exit with an ordinary degree, students must achieve 300-330 credits at level 4 or above, including at least 150 credits at level 5 or above and a minimum of 60 credits at level 6 or above.

12.2 Levels and modules

Please refer to the programme specification for the Foundation Year for the modules to be taken during the foundation year of the BSc (Hons) Medical Science with Foundation Year programme.

Level 4

Compulsory

All students must take all the following:

- BMS1514 Human Sciences
- BMS1555 Biomolecular Science
- BIO1557 Cell Sciences & Genetics
- BMS1565 Laboratory & Professional Skills

Optional

There are no optional modules.

Progression requirements

Students must pass at least 90 credits to progress to Level 5. To achieve Honours, failed credit will need to be repeated.

Level 5

Compulsory

All students must take all the following:

- BMS2586 Research Methods and
- Science Innovation
- BMS2115 Molecular Biology and Clinical Genetics
- BMS2114 Clinical Sciences and Clinical Biochemistry

Optional

Students must also choose one from the following:

- BMS2116 Immunology and Infection Science
- BMS2435 Diet & Health
- BMS2415 Neuropharmacology

Optional modules will not run with less than 15 students

Progression requirements

Students must have passed at least 210 credits to progress to Level 6. To achieve Honours, failed credit will need to be repeated. Students must pass BMS2116 as a prerequisite module for entry to BMS3117 at level 6.

Level 6

Compulsory

Students must take the following:

- BMS3506 Dissertation and Professional Development
- BMS3314 Clinical Diagnostics

- BMS3311 Pharmacology & Toxicology

Optional
Students must also choose one from the following:
- BMS3117 Clinical Immunology and Medical Microbiology
- (pre-requisite Immunology and Infection Sciences BMS2116)
- BMS3446 Clinical Nutrition
- CHE3736 Drug Design & Development

Optional modules will not run with less than 15 students.

Progression requirements
N/A

*Please refer to your programme page on the website re availability of option modules

12.3 Non-compensatable modules BSc in Medical Science	
Module level	**Module code**
4	None
5	None
6	BMS3506

13. Information about assessment regulations

This programme will run in line with general University Regulations:
https://www.mdx.ac.uk/about-us/policies

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

Placements are not compulsory for this programme. Students are encouraged to seek out summer internships across diverse healthcare environments to enhance their experience in their chosen fields. MDXWorks offers support for students in optimizing their applications for a successful internship placement.

15. Future careers / progression

Graduates can gain employment in a wide variety of settings, particularly laboratory-based work. Graduates could be employed by biotechnology, pharmaceutical, forensic, private diagnostic, public health, or university laboratories. Others may obtain posts in sales and marketing of medical products, or publishing companies employing medical science writers and editors, or in education at all levels. Graduates could also choose to undertake further

study for a range of health careers in the NHS. Medical science graduates can also continue studies at postgraduate level by taking a diploma, MSc or PhD.

16. Particular support for learning
Specialist laboratory facilities, online resources and learning resource facilities are available to learn and develop skills. The Learning Enhancement Team supports students to develop Maths, Statistics and Numeracy skills and Academic Writing and Language skills. Academic advising, dyslexic and disability support is also available.

17. HECos code(s)	100270

18. Relevant QAA subject benchmark(s)	Biomedical Science and Biomedical Sciences (2023)

19. Reference points
The following reference points were used in designing the Programme: **External Documentation:** Quality Assurance Agency (2023) *Subject Benchmark Statement for Biomedical Science & Biomedical Sciences. QAA.* **Internal documentation:** 1. Middlesex University Middlesex University Regulations. MU. 2. Middlesex University 2031 Learning Framework. MU.

20. Other information
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 they take full advantage of the learning opportunities that are provided. More detailed information about the programme can be found in the student programme handbook and the University Regulations.

21. Curriculum map for BSc in Medical Science

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	Normal and abnormal biochemical, cellular and physiological processes.
A2	The principles of diagnosis and management of human disease.
A3	The importance of scientific research in the advancement of medical practice.
A4	Therapeutic and toxic effects of drugs on the human body.
A5	Analytical techniques used in medical diagnostics or research.
A6	Sustainability principles and their application to scientific practice
Skills	
B1	Critically evaluate research evidence in the context of current theory or practice.
B2	Solve clinical problems.
B3	Present information in the most effective format to communicate ideas clearly.
B4	Design and undertake a research project.
B5	Perform a wide range of common medical laboratory techniques competently, and in accordance with health and safety guidelines.

Programme outcomes										
A1	A2	A3	A4	A5	A6	B1	B2	B3	B4	B5
Highest level achieved by all graduates										
6	6	6	6	6	6	6	6	6	6	6

BSc in Medical Science

Module Title	Module Code by Level	A1	A2	A3	A4	A5	A6	B1	B2	B3	B4	B5
Laboratory & Professional Skills	BMS1565		x	x		x	x	x	x	x	x	
Biomolecular Science	BMS1555	x										
Human Sciences	BMS1514	x			x							
Cell Sciences & Genetics	BIO1557	x				x						x
Research Methods and Science Innovation (compulsory)	BMS2586			x			x	x		x	x	
Molecular Biology & Clinical Genetics (compulsory)	BMS2115	x			x	x			x			x
Clinical Sciences & Clinical Biochemistry (compulsory)	BMS2114	x	x		x				x			
Diet & Health	BMS2435	x	x						x			
Immunology & Infection Science	BMS2116	x				x			x			x
Neuropharmacology	BMS2415	X			x			x	x			
Dissertation & Professional Development (compulsory)	BMS3506			x			x	x		x	x	
Clinical Diagnostics (compulsory)	BMS3314	x	x	x		x			x	x		x
Pharmacology & Toxicology (compulsory)	BMS3311	x	x		x				x	x		
Clinical Nutrition	BMS3446	x	x						x	x		
Clinical Immunology & Medical Microbiology	BMS3117	x				x			x	x		x
Drug Design and Development	CHE3736	x			x			x	x			x