

BSc (Hons) Biomedical Science

BSc (Hons) Biomedical Science with Foundation Year

Programme Specification

1. Programme title BSc (Hons) Biomedical Science, BSc (Hons) Biomedical Science with Foundation Year

2. Awarding institution Middlesex University

3a. Teaching institution Middlesex University

3b. Language of study English

4a. Valid intake dates Sept

4b. Mode of study FT/PT, BSc (Hons) Biomedical Science (FT/PT), BSc (Hons) Biomedical Science with Foundation year (FT/PT), BSc (Hons) Applied Biomedical Science (FT/PT but placement year full time)

4c. Delivery method On-campus/Blended, Distance Education

5. Professional/Statutory/Regulatory body Institute of Biomedical Science (IBMS)

6. Apprenticeship Standard N/A

7. Final qualification(s) available

- IBMS accredited awards: BSc (Hons) Biomedical Science, BSc (Hons) Biomedical Science with Foundation year, BSc (Hons) Applied Biomedical Science
- Non-accredited awards: Cert HE Biomedical Studies, DipHE Biomedical Studies, BSc Biomedical Studies

8. Academic year effective from 2024/25

9. Criteria for admission to the programme

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.

Applications will be considered on the merits in accordance with our Equality and diversity policy [HRPS8-Equality-and-diversity-policy-August-2022.pdf \(mdx.ac.uk\)](#)

Please refer to the programme specification for the Foundation Year for criteria for admission to the [BSc \(Hons\) Biomedical Science with Foundation Year](#) programme.

Overseas candidates, whose first language is not English, will need a qualification that demonstrates competence in English language IELTS 7.0 (with minimum 6.5 in all components) or an equivalent English qualification.

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 to determine both the number of academic credits and the module exceptions to be awarded.

DBS and occupational health clearances are also required for Applied Biomedical Science. Students, who do not get either a DBS or health clearance, will not be able to transfer to the BSc Applied Biomedical Science degree.

10. Aims of the programme

- To help students to develop the knowledge, skills, attitude and ethical values required providing patient-centred care and working safely and effectively in the NHS as a biomedical scientist
- To apply scientific principles and theories underpinning biomedical science to patient care
- To enable students to carry out competently diagnostic investigations relevant to the role of a biomedical scientist
- To develop the student's ability to apply scientific methods and approaches to research, development and innovation
- To help the student develop a range of graduate competences required for effective life-long learning, communication, team working and leadership
- To prepare the student for employment in a biomedical science laboratory

For the BSc Applied Biomedical Science, an additional aim is:

- To enable students to acquire the knowledge, skills and professional behaviour required to be eligible to register with HCPC as a Biomedical Scientist.

11. Programme outcomes*

A. Knowledge

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

1. The scope of practice of biomedical scientist and skills required by a biomedical scientist to provide a high-quality diagnostic service.
2. Normal and abnormal biological processes.
3. The principles of diagnosis and management of human disease.
4. The importance of scientific research in the advancement of healthcare practice.
5. Bioanalytical techniques used in clinical pathology and biomedical research.
6. An understanding of sustainability principles and their integration into 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 sessions, short key concepts videos will be provided throughout the modules.

Assessment methods

Students' knowledge and understanding is assessed by summative and formative assessment, including peer presentations, laboratory reports and portfolio, case studies, objective-structured practical examinations, quizzes, case studies and problem-based examinations and assessment of clinical practice.

B. Skills

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

1. Generate, analyse and critically evaluate scientific information and data using the most appropriate technology to gain new insights into a current theory and practice (Graduate competencies 7, 8);
2. Perform a wide range of common biomedical laboratory techniques competently, in accordance with quality assurance and health and safety guidelines. (4)
3. Solve clinical problems (4, 8)
4. Reflect on own learning and practice to develop personally and professionally. (3, 4)
5. Present information in the most effective format to communicate ideas clearly. (3, 7)
6. Demonstrate a high level of digital literacy, numeracy and problem-solving skills (4, 7, 8)
7. Design and undertake a research project (4, 6, 8)
8. Work collaboratively to solve real word problems to improve laboratory service or patient outcomes (1, 2, 5, 8)

In addition, BSc Applied Biomedical Science students will be able to:

9. Work within scope of practice for a biomedical scientist and according to the HCPC professional standards of conduct, performance and ethics, and the IBMS Good Professional Practise in Biomedical Science

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' knowledge and understanding is assessed by summative and formative assessment, including peer presentations, laboratory reports and portfolio, case studies, essays, objective-structured practical examinations, online quizzes, and unseen theory examinations and assessment of clinical practice.

These assessment methods are designed to evaluate graduate competencies 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) Biomedical 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 BMS2575 (30 Credits), Clinical Sciences and Clinical Biochemistry BMS2570 (30 Credits)
- Semester 2 - Immunology and Infection Science BMS2116 (30 Credits), Haematology and Blood Transfusion BMS2590 (30 Credits)

Year 3

- Semester 1 - Clinical Immunology and Medical Microbiology BMS3500 (30 credits), Research Methods and Science Innovation BMS3507 (30 credits)
- Semester 2 - Molecular and Cellular Pathology BMS3595 (30 credits), Dissertation and Professional Development BMS3506 (30 credits)

BSc (Hons) Applied Biomedical 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 BMS2575 (30 Credits), Clinical Sciences and Clinical Biochemistry BMS2570 (30 Credits)
- Semester 2 - Immunology and Infection Science BMS2116 (30 Credits), Haematology and Blood Transfusion BMS2590 (30 Credits)

Year 3

- Semester 1 - Clinical Immunology and Medical Microbiology BMS3500 (30 credits), Research Methods and Science Innovation BMS3507 (30 credits)
- Semester 2 - Molecular and Cellular Pathology BMS3595 (30 credits), Dissertation and Professional Development BMS3506 (30 credits)

Year 4

- Clinical Laboratory Practice BMS3576 (120 Credits)

BSc (Hons) Biomedical Science– Part-Time (indicative 6 - years plan, subject to timetable)

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 BMS2575 (30 Credits)
- Semester 2 - Haematology and Blood Transfusion BMS2590 (30 Credits)

Year 4

- Semester 1 - Clinical Sciences and Clinical Biochemistry BMS2570 (30 Credits)
- Semester 2 - Immunology and Infection Science BMS2116 (30 Credits)

Year 5

- Semester 1 - Clinical Immunology and Medical Microbiology BMS3500 (30 credits)
- Semester 2 - Molecular and Cellular Pathology BMS3595 (30 credits)

Year 6

- Semester 1 - Research Methods and Science Innovation BMS3507 (30 credits)
- Semester 2 - Dissertation and Professional Development BMS3506 (30 credits)

Exit awards:

BSc (Hons) Biomedical Science, students must achieve 360 credit points at level 4 and above, including at least 210 credits at level 5 or above and a minimum of 120 credits at level 6 or above.

BSc (Hons) Biomedical Science with FY, students must achieve 480 credit points at level 3 and above, including at least 360 credits at level 4 or above, 210 credits at level 5 or above and a minimum of 120 credits at level 6 or above.

Cert HE in Biomedical Studies, students must achieve between 120 and 210 credit points at level 4 and above.

DipHE in Biomedical Studies, students must achieve between 240 and 270 credit points at level 4 and above, including 90 credits at level 5 or above.

An ordinary degree in Biomedical Studies, students must achieve between 300 and 330 credit points at level 4 and above, including at least 150 credits at level 5 or above and a minimum of 60 credits at level 6 or above.

BSc (Hons) Applied Biomedical Science, students must achieve 480 credit points at level 4 and above, including at least 210 credits at level 5 or above and a minimum of 240 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 \(Hons\) Biomedical Science with Foundation Year](#) programme.

Level 4

Compulsory

All students must take all of the following:

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

Optional

There are no optional modules.

Progression requirements

All modules must be passed.

Level 5

Compulsory

All students must take all of the following:

- BMS2575 Molecular Biology and Clinical Genetics
- BMS2570 Clinical Sciences and Clinical Biochemistry
- BMS2116 Immunology and Infection Science
- BMS2590 Haematology and Blood Transfusion

Optional

There are no optional modules.

Progression requirements

All modules must be passed.

Level 6

Compulsory

All students must take all of the following:

- BMS3507 Research Methods and Science Innovation
- BMS3500 Clinical Immunology and Medical Microbiology
- BMS3595 Molecular and Cellular Pathology
- BMS3506 Dissertation and Professional Development
- BMS3576 Clinical Laboratory Practice (Only the BSc Applied Biomedical Science)

Optional

No optional modules.

Progression requirements

All modules must be passed.

12.3 Non-compensatable modules BSc in Biomedical Science, BSc Applied Biomedical Science

Module level/Module code

4/All

5/All

6/All

13. Information about assessment regulations

This programme will run in line with general University Regulations: <https://www.mdx.ac.uk/about-us/policies> however, all modules must be passed to progress to the next level either by assessment or pre-accreditation. To pass a module with multiple assessments at levels 5 and 6, students must pass all components due to regulatory body requirements, except on module BMS2116 Immunology and Infection Science, where an overall module pass is required.

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

BSc Applied Biomedical Science

The 'Applied' programme placement is specifically tailored to train biomedical scientists for employment in pathology laboratories, serving the NHS. Eligible students are shortlisted for an interview in their third year, and upon successful interview, and transition to the Applied programme. This placement occurs within one of our partnered pathology laboratories during the fourth year of the programme. The successful completion of the IBMS Registration Training Portfolio is an absolute requirement for graduation from the 'Applied' programme.

Students are exclusively placed in an IBMS-approved learning environment. Placement Tutors, in collaboration with placement providers, ensure the availability of learning opportunities and support in the placement area to facilitate students in meeting module learning outcomes and HCPC Standards of Proficiency. An academic representative from the University conducts 3-way meeting (Tripartite-lab manager, student and the tutor) to monitor the student's progress. Students provide formal feedback about their placement twice (Nov and July), which is officially presented in the Trainers Liaison group meeting. Both parties also establish robust quality monitoring processes and clear lines of communication.

Prior to transferring from the Biomedical Science programme, students must undergo enhanced DBS and Occupational Health clearance. The placement is unpaid.

At the commencement of the placement, students receive a comprehensive induction, with additional support and guidance provided for those with diverse needs.

Each placement area is assigned a Placement Tutor and furnished with a placement handbook, detailing lines of communication, contact information of key academic staff, attendance policies, and complaint procedures. Practice learning is assessed through the training manual and written assignments.

15. Future careers / progression

Biomedical science graduates can gain employment in a wide variety of settings, particularly laboratory-based work. Graduates could be employed in the National Health Service, pharmaceutical, forensic, Public Health, veterinary, agriculture, private or university laboratories; others may obtain posts in sales and marketing of biomedical products, or in education at all levels. Biomedical science graduates can also continue studies at postgraduate level by taking a diploma, Master's degree or PhD.

Graduates of the BSc Applied programme are eligible to register as Biomedical Scientists with the HCPC after successful completion of the registration portfolio and receiving a certificate of competence.

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 at <https://www.mdx.ac.uk/student-life/student-support>

17. HECos code(s) 100265

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

19. Reference points

The following reference points were used in designing the Programme:

Internal documentation:

Middlesex University; *Middlesex University Regulations*. MU.

Middlesex University (2023) *2031 Learning Framework*. MU.

External Documentation:

Quality Assurance Agency (2023) *Subject Benchmark Statements for Biomedical Sciences*. QAA.

Institute of Biomedical Science (2023) *Guidance and Criteria for the Re-accreditation of BSc (Hons) Degrees in Biomedical Science (version 3.0)*. IBMS

Health and Care Professional Council (2023) *Standards of conduct, performance and ethics (valid from 1st Sept 2024)*. HCPC

Institute of Biomedical Science (2023) *Good professional practise and conduct in Biomedical Science*. IBMS

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 (Hons) Biomedical Science, BSc (Hons) Applied Biomedical 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	The scope of practice of biomedical scientist and skills required by a biomedical scientist to provide a high-quality diagnostic service.
A2	Normal and abnormal biological processes.
A3	The principles of diagnosis and management of human disease.
A4	The importance of scientific research in the advancement of healthcare practice.
A5	Bioanalytical techniques used in clinical pathology and biomedical research.
A6	An understanding of sustainability principles and their integration into scientific practice.
Skills	
B1	Generate, analyse and critically evaluate scientific information and data using the most appropriate technology to gain new insights into a current theory and practice.
B2	Perform a wide range of common biomedical laboratory techniques competently, in accordance with quality assurance and health and safety guidelines.
B3	Solve clinical problems.
B4	Reflect on own learning and practice to develop personally and professionally.
B5	Present information in the most effective format to communicate ideas clearly.
B6	Demonstrate a high level of digital literacy, numeracy and problem-solving skills.
B7	Design and undertake a research project.
B8	Work collaboratively to solve real world problems to improve laboratory service or patient outcomes.
B9	Work within scope of practice for a biomedical scientist and according to the HCPC professional standards of conduct, performance and ethics, and the IBMS Good Professional Practise in Biomedical Science (BSc Applied Biomedical Science only).

Programme outcomes														
A1	A2	A3	A4	A5	A6	B1	B2	B3	B4	B5	B6	B7	B8	B9
Highest level achieved by all graduates														
6	6	6	6	6	6	6	6	6	6	6	6	6	6	6

Module Title	Module Code by Level	A1	A2	A3	A4	A5	A6	B1	B2	B3	B4	B5	B6	B7	B8	B9
Laboratory and Professional Skills	BMS1565	x			x	x		x	x		x	x	x		x	
Biomolecular Science	BMS1555		x					x								
Human Sciences	BMS1514		x	x					x			x	x			
Cell Sciences and Genetics	BIO1557		x													
Haematology and Blood Transfusion	BMS2590		x	x		x			x	x		x				
Molecular Biology and Clinical Genetics	BMS2575		x	x		x			x	x	x	x			x	
Immunology and Infection Science	BMS2116		x			x			x							
Clinical Sciences and Clinical Biochemistry	BMS2570		x	x		x			x	x		x			x	
Research Methods and Science Innovation	BMS3507				x		x	x				x	x		x	
Molecular and Cellular Pathology	BMS3595		x	x		x			x	x		x			x	
Clinical Immunology and Medical Microbiology	BMS3500		x	x		x			x	x		x				
Dissertation and Professional Development	BMS3506	x			x			x			x	x	x	x		
Clinical Laboratory Practice	BMS3576	x		x		x	x	x	x	x	x	x	x	x	x	x