

Programme specification

1. Programme title

MSc Cardiology

Target Award Title(s):

MSc Cardiology

Exit Award Title(s):

PGDip Cardiology

PGCert Cardiology

PGCert Cardiac Science

2. Awarding institution

Middlesex University

3. Teaching institution

Middlesex University London,

4. Length and mode of study

a) Length and mode:

Full-time (FT)	Semester 1	1 Years
Part-time (PT)	Semester 1	2 Years

b) Delivery method:

5. Professional/Statutory/Regulatory body (if applicable)

N/A

6. Apprenticeship standard (if applicable):

N/A

7. Language of study

English

8. Will this be delivered as a Continuing Professional Development (CPD) programme?

Yes – Exit award PGCert Cardiac Science. [Not open entry route]

9. Criteria for admission to the programme

The programmes are primarily for Cardiac Physiologists seeking professional development, though applications from other healthcare professionals, such as cardiac nurses, medical practitioners, and radiographers in cardiology, will be considered individually.

Applicants must hold a minimum 2:2 undergraduate degree in a science-based subject. Those with relevant qualifications or significant work experience may be considered through the Recognition of Prior Learning (RPL) scheme, with prior learning mapped against programme modules.

Overseas applicants must meet English proficiency requirements: IELTS 6.5 (minimum 6.0 in each component) or TOEFL 84. Applicants with disabilities are welcome, subject to an assessment ensuring laboratory safety. The programme team is experienced in providing tailored support for students with disabilities.

PGCert Cardiac Science is only open to employed NHS cardiac science staff and provides the academic award for the NHS England London Cardiac Science Fellow

Fair Admission Policy

The University aims to ensure that its admissions processes are fair, open and transparent and aims to admit students who, regardless of their background, demonstrate potential to successfully complete their chosen programme of study where a suitable place exists and where entry criteria are met. The University values diversity and is committed to

equality in education and students are selected on the basis of their individual merits, abilities and aptitudes. The University ensures that the operation of admissions processes and application of entry criteria are undertaken in compliance with the Equality Act.

We take a personalised but fair approach to how we make offers. We feel it's important that our applicants continue to aspire to achieving great results and make offers which take into account pieces of information provided to us on the application form.

This includes recognition of prior learning and experience. If you have been working, or you have other learning experience that is relevant to your programme, then we can count this towards your entry requirements and even certain modules once you start studying.

10. Aims of the programme

The programme aims to:

The programme is designed to enhance students' careers by equipping them with advanced expertise in cardiology, preparing them to excel in specialised areas of cardiovascular health. It aims to support career advancement in academia, diagnostic laboratories, or the life sciences sector, while specifically preparing students for the British Heart Rhythm Society (BHRS), International Board of Heart Rhythm Examiners (IBHRE), and British Society of Echocardiography (BSE) Level 1 accreditation theory exams. The programme also focuses on developing leadership, management, and ethical decision-making skills, fostering professionalism and adaptability in diverse healthcare and research environments.

In addition, the programme provides a comprehensive, in-depth understanding of the mechanisms underpinning cardiovascular disease, along with modern diagnostic technologies. This knowledge will enable students to engage in innovative research and clinical applications. Students will also cultivate the ability to critically assess legal, ethical, and safety issues in research, while developing key skills in laboratory management, quality control, research design, and statistical methods essential for professional practice.

Throughout their studies, students will enhance their communication, teamwork, and lifelong learning skills, while fostering the critical

evaluation of current research literature to generate new hypotheses and ideas.

Upon completion of the MSc project, successful students will acquire the skills to design, analyse, and conduct individualised experimental research projects. They will critically evaluate the literature in the context of their research and propose new, relevant hypotheses in cardiovascular health.

11. Programme learning outcomes

Programme - Knowledge and Understanding

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

1. The aetiology and pathology of common cardiovascular diseases, including cardiac valve disease and cardiomyopathies.
2. The complexities of the cardiac conduction system and its impact on cardiovascular health.
3. Advanced cardiac imaging modalities, diagnostic techniques, and therapeutic interventions used in modern cardiology.
4. The importance of calibration, safety testing, quality control, and assurance procedures in physiological science services.
5. Ethical and legal considerations related to the collection, handling, and storage of data in cardiovascular research and clinical practice.
6. Research methods and the design and conduct of original research projects.
7. Clinical leadership and management, including strategic decision-making, team collaboration, and the integration of best practices to improve patient outcomes.

Programme - Skills

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

8. Apply and synthesise complex and specialised skills in postgraduate cardiology, including advanced cardiac ultrasound techniques, electrophysiology, and the analysis and management of cardiac

devices, while demonstrating the ability to critically evaluate and apply this expertise in clinical practice.

9. Critically evaluate cardiac disease processes, integrating advanced knowledge and clinical evidence to make informed, accountable decision-making, while applying best-practice.

10. Critically evaluate and address ethical, legal, and safety issues in cardiology, understanding their impact in clinical and research settings.

11. Formulate novel hypotheses to advance research in cardiology and critically analyse and evaluate physiological data using sophisticated techniques and methodologies.

12. Design, develop, and manage a research project, including the ability to critically evaluate findings in the context of existing literature.

13. Apply advanced communication and presentation skills to convey complex information clearly and persuasively.

14. Integrate leadership, management, and teamwork skills to navigate and resolve clinical and research challenges, while fostering professional development.

12. Learning and teaching methods

The teaching and learning methods for the MSc Cardiology programme are designed to provide an integrated and flexible learning experience, helping students develop the knowledge, understanding, and skills necessary for advanced roles in healthcare and academia.

The curriculum is inclusive and flexible, with materials provided in various formats to cater to diverse learning needs. Small group discussions and practical workshops promote student participation and collaboration, fostering a dynamic learning environment. Key concept videos allow students to engage with critical concepts at their own pace, revisiting content as needed.

Students are encouraged to take a lead in discussions and presentations, building co-leadership skills by critiquing and

sharing advancements in cardiology. Digital platforms like Epicardio© and university learning management systems help students develop essential digital skills, with activities involving professional-grade cardiac software and simulations. Practical sessions, such as diagnostic procedures and case studies, prepare students for real-world clinical roles, while guest speakers and collaborations with employers ensure content is aligned with current clinical practices.

The programme emphasises leadership, problem-solving, and data interpretation skills, essential for success in both healthcare and academia. Adjustments in teaching methods ensure inclusivity, while topics and case studies reflect global cardiology practices. Hands-on training, including the use of cardiac ultrasound machines, supports employability and practical expertise. The curriculum also promotes sustainable healthcare practices, teaching resource-efficient diagnostic methods.

Planned learning activities include weekly face-to-face sessions, seminars, case studies, group projects, and independent study. Practical workshops provide hands-on experience with diagnostic tools, while research project supervision fosters critical thinking and active research involvement.

13. Employability

a) Development of graduate competencies

1. Curiosity and Learning

- **Learning:** The curriculum encourages exploration through modules like *Research Methods* and *Bioethics*, with practical workshops in *Cardiac Ultrasound* and *Electrophysiology*.
- **Assessment:** Creativity is evaluated via research projects and case studies, integrating theory with practice BMS4002 Cardiac Rhythm Management and BMS4107 Cardiac Ultrasound.

2. Collaborative Innovation

- **Learning:** Teamwork is central to *Cardiac Rhythm Management* and *Electrophysiology*, where students work on clinical data and case studies.

Assessment: Group projects and lab work assess both the process and outcomes of collaboration.

3. Resilience and Adaptability

- **Learning:** Real-world case studies help students develop adaptable problem-solving skills in *Cardiac Ultrasound* and *Electrophysiology*.
- **Assessment:** Situational assessments test responses to clinical challenges and diagnostic failures.

4. Technological Agility

- **Learning:** Students gain experience with advanced diagnostic tools such as *Epicardio*® and *Heartworks* for echocardiography.
- **Assessment:** Practical assessments evaluate proficiency in using technology for complex diagnostic tasks.
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5. Entrepreneurship

- **Learning:** *Leadership and Management* equips students with skills to navigate healthcare business and innovation.
- **Assessment:** Business proposals and innovation projects are assessed for feasibility and creativity.

6. Communication, Empathy, and Inclusion

- **Learning:** Workshops teach effective, inclusive communication for diverse patient and team interactions.
- **Assessment:** Group work and presentations assess clarity, empathy, and inclusivity.

7. Leadership and Influence

- **Learning:** The *Leadership and Management* module and *Research Project* provide opportunities to develop leadership skills in clinical and research settings.
- **Assessment:** Leadership effectiveness is assessed through project management and reflective evaluations.

8. Problem Solving and Delivery

- **Learning:** Problem-based learning in *Electrophysiology* and *Cardiac Rhythm Management* hones diagnostic and decision-making skills.

- **Assessment:** Case studies and diagnostic challenges assess problem-solving ability in real-world scenarios

b) Employability development

The MSc Cardiology programme incorporates comprehensive career development support, including preparation for professional certifications such as BSE Level 1 for Cardiac Ultrasound and BHRS for Cardiac Rhythm Management and Clinical Electrophysiology. These certifications are essential for advancing clinical roles, and the curriculum ensures alignment with industry standards.

In addition, the programme provides dedicated sessions on CV writing, interview techniques, and employability skills. These include mock interviews, networking opportunities with guest speakers from healthcare and research sectors, and workshops that focus on transferable skills such as communication, leadership, and time management. These activities aim to prepare students for successful careers in clinical practice, healthcare management, research, and industry.

c) Placement and work experience opportunities

N/A

d) Future careers/progression

Successful MSc Cardiology students will be well-prepared for clinical professional development, particularly in specialised fields such as cardiac rhythm management, electrophysiology, and cardiac ultrasound. The programme enables NHS practitioners to advance from practitioner to highly skilled practitioner, progressing beyond Band 7 into senior management roles. For those outside the NHS, it opens career paths in cardiac research, academia, private sector biotechnology, and the pharmaceutical industry, preparing graduates for roles such as research scientists, clinical trial coordinators, and medical device specialists.

Ultimately, the programme provides a solid foundation for progression to PhD programmes in cardiology or related specialised fields.

14. Assessment strategy

Students' knowledge, understanding and skills is assessed via a range of assessment methods, such as presentations, practical assessments, case studies, written assignments and dissertation

15. Programme structure

- MSc Cardiology (180 credits):

Full-time students will take the three core modules at 15 credits each and the three specialist cardiology modules of 1 x 15 credits and 2 x 30 credits including the 60 credit research project module over one calendar year.

Part-time students will take modules equating to 60 credits in Year 1 and 60 credits in Year 2, with the 60-credit research project taking place once the second year is complete

It is recommended that this should be the x2 specialist cardiology modules of 30 credits in Year 1 and the 3 core modules and 1 x 15 credits specialist module in Year 2. This recommendation will mean that should the student not continue with study after Year 1, they will at least be awarded PGCert Cardiology

Full-time MSc Cardiology

Students may not progress to the Research Project BMS4997 until 105 credits have been passed, including BMS4067 Clinical Electrophysiology. Students must then pass BMS4998 to receive the MSc Cardiology award.

Code	Module Title	Credits
BMS4887	Experimental Design and Statistics	15
BMS4067	Clinical Electrophysiology	15
BMS4107	Cardiac Ultrasound	30
BMS4477	Bioethics	15

BMS4677	Leadership and Management	15 credits
BMS4002	Cardiac Rhythm Management	30 credits
BMS4998	Research Project	60 credits

Part-time MSc Cardiology structure

YEAR 1 – Specialist Modules

Students may not progress to the Research Project BMS4997 until 105 credits have been passed, including BMS4067 Clinical Electrophysiology. Students must then pass BMS4998 to receive the MSc Cardiology award.

Code	Module Title	Credits
BMS4107	Cardiac Ultrasound	30
BMS4002	Cardiac Rhythm Management	30

Part-time MSc Cardiology structure

YEAR 2 – Core Modules

Code	Module Title	Credits
BMS4887	Experimental Design and Statistics	15
BMS4067	Clinical Electrophysiology	15
BMS4477	Bioethics	15
BMS4677	Leadership and Management	15
BMS4998	Research Project	60

- **PGCert: Cardiac Science (60 credits):**

Students will complete 60 credits selected according to one of three specialist routes: 1) Echocardiography; 2) Cardiac Rhythm Management; 3) Electrophysiology route

PGCert Cardiac Science: Cardiac Rhythm Management

Code	Module Title	Credits
BMS4887	Experimental Design and Statistics	15
BMS4677	Leadership and Management	15
BMS4002	Cardiac Rhythm Management	30

PGCert Cardiac Science: Echocardiography route

Code	Module Title	Credits
BMS4887	Experimental Design and Statistics	15
BMS4107	Cardiac Ultrasound	30
BMS4677	Leadership and Management	15

PGCert Cardiac Science: Electrophysiology route

Code	Module Title	Credits
BMS4887	Experimental Design and Statistics	15
BMS4067	Clinical Electrophysiology	15
BMS4477	Bioethics	15
BMS4677	Leadership and Management	15

16. Progression requirements**Postgraduate**

Level 7: Students may not progress to the Research Project BMS4997 until 105 credits have been passed, including BMS4067 Clinical Electrophysiology. Students must then pass BMS4997 to receive the MSc Cardiology award.

- For a **PGCert Cardiology** students must complete the 2 x 30-credit cardiology Modules (BMS4107 and BMS4002).
- For a **PGDip Cardiology** students must pass all modules apart from BMS4998.
- To progress onto the Research Project module (BMS4998) students must pass 105 credits including BMS4067

For a **PGCert Cardiac Science** student must pass 60 credits:

- BMS4677, BMS4887 and BMS4107 (Echocardiography route)
- BMS4677, BMS4887 and BMS4002 (Cardiac Rhythm Management route)

- BMS4677, BMS4887, BMS4477 and BMS4067 (Electrophysiology route)

Non-compensatory modules

- BMS4107
- BMS4002
- BMS4067
- BMS4998

17. Programme-specific support for learning

Facilities and Resources

Specialist Laboratory Facilities: Students have access to professional-standard software and hardware, such as:

- The online platform *Epicardio*® for developing practical skills, knowledge, and understanding in ECG, cardiac rhythm management, and electrophysiology.
- *Philips Vividi* cardiac ultrasound machines.
- *Heartworks*® *simulation* with real-time imagery for practical workshops to enhance assessment skills.

Research Opportunities:

- Students employed in the sector can conduct workplace-based research projects, such as service improvement audits or participation in existing research projects.
- Students not employed in the sector undertake a systematic review-style project.

Library Resources:

- Access to specialist journals through *Middlesex University Library*.
- Access to the *British Library* in London for photocopying additional articles.

Student Support

- Offers academic support in essay/report writing, presentations, and academic discussions.

- Provides one-to-one tutorials and workshops for additional literacy and numeracy support.

Student Welfare Advice:

- Provides information and advice on money, funding, and housing.

Disability and Dyslexia Service:

- Aims to create an inclusive teaching and learning environment for all students.

Learning Platforms

- **Virtual Learning**
- Central service for accessing learning resources and module support.
- Support via online, phone, in-person, or chat options.
- **Additional Facilities Self-Service Laptops:** Available for a loan for up to 7-days

18. HECOS code ([Hecos | HESA](#))

100748: Cardiology

19. Relevant QAA subject benchmarks

Health Studies (2024)

20. University Regulations

The programme will run in line with general University Regulations. View the full Regulations: [Policies | Middlesex University](#).

21. Reference points

Internal documentation

Middlesex University Regulations 2024/25 -

<https://www.mdx.ac.uk/about-us/policies/>

Middlesex University Learning and Quality Enhancement Handbook -
 <https://www.mdx.ac.uk/about-us/policies/academic-quality/learning-and-quality-enhancement-handbook-lqeh/>

External documentation

Quality Assurance Agency (2024) The Frameworks for Higher Education Qualifications of UK Degree-Awarding Bodies, second edition.

Gloucester: QAA - https://www.qaa.ac.uk/docs/qaa/quality-code/the-frameworks-for-higher-education-qualifications-of-uk-degree-awarding-bodies-2024.pdf?sfvrsn=3562b281_11

Quality Assurance Agency (2024) UK Quality Code for subject benchmarks for health studies

Quality Assurance Agency (2024) UK Quality Code for Higher Education. Gloucester: QAA - <https://www.qaa.ac.uk/the-quality-code/2024>

Quality Assurance Agency (2020) Characteristics Statement. Master's Degree. London, QAA - https://www.qaa.ac.uk/docs/qaa/quality-code/master's-degree-characteristics-statement.pdf?sfvrsn=86c5ca81_22

Department of Health (DH) (2016) *Modernising Scientific Careers. Scientist Training Programme MSc in Clinical Science Curriculum. Cardiac, Critical Care, Vascular, Respiratory and Sleep Sciences* 2016/17. DH

21. Methods for evaluating and improving the quality and standards of learning

Refer to Middlesex Quality processes

22. Other information

n/a