

A. Programme Specification and Curriculum Map for MSc Cardiology

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| 1. Programme title | MSc Cardiology |
| 2. Awarding institution | Middlesex University |
| 3. Teaching institution | Middlesex University |
| 4. Programme accredited by | |
| 5. Final qualification | MSc/PGDip/PGCert Cardiology |
| 6. Academic year | 2020/21 |
| 7. Language of study | English |
| 8. Mode of study | Full-time and Part-time |

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 a health or science-based subject; applicant must normally be a clinical physiologist. Applications from other healthcare professionals (e.g. registered nurse, clinical exercise physiologist, physiotherapist and medical practitioners) are also welcomed.

1. Applicants with other qualifications and / or substantial work experience in Clinical Physiology will also be considered under the Accreditation of Prior Experiential Learning (APEL) scheme. Past learning or experience will be mapped against existing programme modules within the programme and the mapping will be considered at the accreditation board.
2. Overseas Candidates should also be competent in English and have achieved, as a minimum, one of the following standards: IELTS-6.5; TOEFL – 60.

Applicants with a disability can enter the programme following assessment. 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 programmes aim to prepare students for careers in academia, working in a clinical physiology department or medical equipment sales.

The PGCert Cardiology aims to:

- Equip students with a mastery of the fundamental principles and recent advances in cardiology
- Give students a thorough grounding in the fundamental mechanisms underpinning the major pathological processes

- Provide students with sufficiently detailed information about the modern technologies used in diagnostics and research to enable them to solve complex problem related to disease investigation
- Allow students to develop mastery of communication, teamwork, writing and presentation.

The PGDip/MSc Cardiology to:

- Equip students with a mastery of the fundamental principles and recent advances in advanced Cardiac Physiology such as Cardiac Ultrasound, Cardiac Rhythm Management (CRM) and Electrophysiology (EP).
- Give students a thorough grounding in the fundamental mechanisms underpinning the major pathological processes.
- Provide students with sufficiently detailed information about the modern technologies used in diagnostics and research to enable them to solve complex problem related to disease investigation
- Enable students to understand and apply the principles of leadership and management, health and safety, quality control, research and statistical methods in their professional lives.
- Enable students to critically evaluate legal requirements for human experiments and ethical issues relating to research with human subjects and human tissue.
- Provide students with the tools to acquire the essential facts, concepts, principles and theories relevant to their chosen research project.
- Give students the ability to critically evaluate current research literature in Cardiac Physiology, and an acquisition of the skills for lifelong learning
- Allow students to develop mastery of communication, teamwork, writing and presentation.

In addition, on completion of the MSc the successful student will:

- Have acquired the design, critical analysis and practical skills necessary to carry out an individualised experimental research project
- Have developed the skills to evaluate literature in the context of their current research and propose new hypotheses relevant to their research.

11. Programme outcomes

A. Knowledge and understanding

On completion of this programme the successful student will have acquired mastery of:

1. The aetiology and pathology of common diseases related to cardiology or neurophysiology
2. Ethical and legal issues in Clinical Physiology
3. Equipment, advanced diagnostic techniques and therapeutic interventions used in cardiology or clinical neurophysiology
4. Research methods
5. Clinical leadership and management

Teaching/learning methods

Students gain knowledge and understanding through pre-recorded lectures, live seminars and interactive activities, plus 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 online seminar presentations, written assignments including data analysis I and online theory examinations.

B. Skills

On completion of the PGDip or MSc programme the successful student will be able to:

1. Develop ideas through the evaluation of appropriate literature, concepts and principles
2. Design a research project
3. Present, analyse and critically evaluate physiological data
4. Debate ethical and legal issues in Cardiac Physiology
5. Develop a research project
6. Critically assess health risk factors associated with working in a research or clinical setting
7. Recognise and respond to moral, ethical and safety issues, which directly pertain to Cardiac Physiology
8. Demonstrate the knowledge to correctly perform calibration, safety testing, quality control and assurance procedures relating to physiological science services
9. Demonstrate effective communication and presentation skills
10. Demonstrate leadership and managerial skills
11. Demonstrate competence in the use of information technology
12. Demonstrate numeracy and problem solving skills at a high level
13. Manage a research project and demonstrate a high level of research skills

In addition on completion of the MSc the successful student will be able to

14. Propose new hypotheses relevant to discipline
15. Critically evaluate their research findings in the context of the literature research
16. Carry out literature review research

Teaching/learning methods

Students learn cognitive, practical and graduate skills through online pre-recorded lectures, live seminars, and case study based discussions, plus interactive online activities, literature searches, videos and online presentations, including online research project peer presentations.

These skills are consolidated by reading, online group work, problem-based learning exercises, structured and directed self-study, analysis of case studies, and through reflection.

Assessment Method

Students' skills are assessed by formative and summative assessment through written work, online examinations, quizzes, case studies, and presentations, plus research project. Written work includes essay, data analysis and research findings.

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

12.1 Overall structure of the programme

All programmes can be studied over either one-year full time or two years part time. For a PGCert in Cardiology, full-time students will complete the three specialist modules in one year. These three modules consist of 2x 15 credit modules for CRM and EP, plus 1x 30 credit module for Cardiac Ultrasound. Part-time students will normally take modules to the equivalent of 30 credits in each of the two years.

Full-time PGDip and MSc students will take the four core modules and the three specialist modules over an academic year. In addition, the MSc students will take a 60-credits project module during the Summer term. Students cannot start their projects until they have passed all taught modules.

Part-time PGDip and MSc students will take four then three modules in each of the two years. Only the MSc students will undertake a research project after passing all taught modules.

The total number of credits required for an award is:

60 credits for a PGCert; 120 for the PGDip; and 180 for the MSc.

12.2 Levels and modules

Level 7

| COMPULSORY | OPTIONAL | PROGRESSION REQUIREMENTS |
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| All students must complete the following for the PGCert: BMS4107 BMS4007 BMS4067 | | |
| All students must complete the following for the PGDip: BMS4677 BMS4777 BMS4887 BMS4957 BMS4107 BMS4007 BMS4067 | | Successful completion of all modules |
| All students must complete the following for the MSc: BMS4677 BMS4777 BMS4887 BMS4957 BMS4997 BMS4107 BMS4007 BMS4067 | | Successful completion of all modules |

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| 12.3 Non-compensatable modules (note statement in 12.2 regarding FHEQ levels) | | |
| Module level | Module code | |
| 7 | All modules | |

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| 13. A curriculum map relating learning outcomes to modules |
| See Curriculum Map attached. |

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| 14. Information about assessment regulations |
| The assessment regulations are the general university regulations. |

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| 15. Placement opportunities, requirements and support |
| Not-applicable |

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| 16. Future careers |
| A qualification at master's level is increasingly becoming a requirement for progression via a PhD into a research career. A master's degree is also an important means for health care professionals to develop the skills necessary to progress from practitioner to highly specialist practitioner and beyond. |

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| 17. Particular support for learning (if applicable) |
| <p>Students will have access to the online platform Epicardio to assist with developing practical skills knowledge and understanding. Middlesex University Library will provide access to specialist journals. 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.</p> <p>A student may undertake a research project at their workplace where relevant and possible.</p> <p>Applicants with a disability can enter the programme following an assessment of their needs, The programme team have experience of adapting the programme to accommodate a range of disabilities in students on the Clinical Physiology programmes and welcome applications from such students.</p> <p>Learning resource services and facilities at Middlesex include a CAL suite and internet access as well as English learning and Language Support</p> <p>Learning resources and other support for modules is delivered via myUniHub.</p> |

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| 18. JACS code (or other relevant coding system) | Cardiology B810 |
| 19. Relevant QAA subject benchmark group(s) | |

20. Reference points

The following reference points were used in designing the Programme:

Internal documentation:

- i. Middlesex University (2006) *Learning Framework Document*
- ii. Middlesex University (2013) *Middlesex University Regulations*. MU
- iii. Middlesex University (2013) *CLQE Handbook*. MU

External Documentation:

1. Quality Assurance Agency (2001) *The QAA Framework for framework for higher education qualifications in England, Wales and Northern Ireland*. QAA
2. Department of Health (DH) (2013) *Modernising Scientific Careers. Scientist Training Programme MSc in Clinical Science Curriculum. Cardiac, Critical Care, Vascular, Respiratory and Sleep Sciences* 2013/14. DH
3. British Society of Echocardiography Protocols and Guidelines (2020)
<https://www.bsecho.org/Public/Education/Protocols-and-guidelines/Public/Education/Protocols-and-guidelines>
4. British Heart Rhythm Society Protocols and Guidelines (2020)
<https://bhrrs.com/arrhythmia-nurses/local-guidelinespolicies/>

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 student programme handbook and the University Regulations.

Curriculum map for MSc Cardiology

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

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| Knowledge and understanding | |
| A1 | The aetiology and pathology of common diseases related to cardiology or neurophysiology |
| A2 | Ethical and legal issues in Clinical Physiology |
| A3 | Equipment, advanced diagnostic techniques and therapeutic interventions used in cardiology |
| A4 | Research methods |
| A5 | Clinical leadership and management |
| Skills | |
| B1 | Develop ideas through the evaluation of appropriate literature, concepts and principles |
| B2 | Design a research project |
| B3 | Present, analyse and critically evaluate physiological data |
| B4 | Debate ethical and legal issues in Clinical Physiology |
| B5 | Develop a research project |
| B6 | Critically assess health risk factors associated with working in a research or clinical setting |
| B7 | Recognise and respond to moral, ethical and safety issues, which directly pertain to the Clinical Physiology |
| B8 | Correctly perform calibration, safety testing, quality control and assurance procedures relating to physiological science services |
| B9 | Demonstrate effective communication and presentation skills |
| B10 | Demonstrate leadership and managerial skills |

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| B11 | Demonstrate competence in the use of information technology |
| B12 | Demonstrate a high level of numeracy and problem solving skills |
| B13 | Manage a research project and demonstrate a high level of research skills |
| B14 | Propose new hypotheses relevant to discipline |
| B15 | Critically evaluate research findings in the context of the literature research |
| B16 | Carry out research experiments |

