

## Programme Specification(s)

### BSc Healthcare Science (Cardiac Physiology) (Apprenticeship)

<b>1. Programme title</b>	BSc (Hons) Healthcare Science (Cardiac Physiology)
<b>2. Awarding institution</b>	Middlesex University
<b>3. Teaching institution</b>	Middlesex University
<b>4. Programme accredited by</b>	National School for Healthcare Science
<b>5. Final qualification</b>	BSc (Hons) Healthcare Science (Cardiac Physiology) (Apprenticeship) BSc Healthcare Science CertHE Healthcare Science DipHE Healthcare Science
<b>6. Academic year</b>	Amended 2019/2020
<b>7. Language of study</b>	English
<b>8. Mode of study</b>	Full-time and Part-time

#### 9. Criteria for admission to the programme

Candidates normally require Maths and English equivalent to at least GCSE grade 4 plus at least 112 UCAS points achieved from the following awards or equivalent

- A-levels (including two A2s with at least one science subject, preferably in biology or chemistry at grade C or better, plus those with Practical Endorsement)
- Or BTEC National Diploma or Certificate in biology, chemistry, forensic science, laboratory and industrial 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

Applicants can make a claim for entry onto the programme with or without advance standing on the basis of either accreditation of prior certified learning or experiential learning.

All apprentices for this programme must have the right to live and work in the UK

## 10. Aims of the programme

The programme aims:

- To develop the knowledge, skills, attitude and ethical values required to provide patient-centred care and work safely and effectively in both the NHS and private healthcare sector as a Cardiac Physiologist.
- To apply scientific principles and theories underpinning healthcare science to patient care.
- To equip students to carry out competently diagnostic and therapeutic cardiac physiology investigations relevant to the role of a Healthcare Science Practitioner.
- To apply scientific methods and approaches to research, development and innovation in healthcare science.
- To develop a range of transferable academic skills required for effective life-long learning, communication, team working and leadership.

## 11. Programme outcomes

### A. Knowledge and understanding

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

1. Skills and attitude required to work as a Cardiac Physiologist
2. Normal and abnormal human physiology
3. The principles of diagnosis and management of human disease
4. The sciences underpinning quality healthcare
5. The importance of scientific research in the advancement of healthcare practice
6. The role and skills required by the cardiac physiology practitioner in the delivery and monitoring of diagnostic and therapeutic investigations
7. The role of the Healthcare Science practitioner and skills required for service improvement

### Teaching/learning methods

Students gain knowledge and understanding through lectures, seminars, laboratory classes, peer presentations, debates, placements in clinical physiology departments, designing and undertaking a research project, role play and practical clinical sessions.

### Assessment Method

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

### B. Skills

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

### Teaching/learning methods

Students learn cognitive, practical and graduate skills through lectures, seminars, discussions, peer presentations, a research

<ol style="list-style-type: none"> <li>1. Critically evaluate research evidence in the context of current theory and practice</li> <li>2. Solve clinical problems</li> <li>3. Appraise and synthesise evidence-based information to gain new insights into aspects of current practice</li> <li>4. Reflect on own learning and practice to develop personally and professionally</li> <li>5. Present information in the most effective format to communicate ideas clearly</li> <li>6. Design and carry out research project or clinical audit</li> <li>7. Perform a wide range of clinical procedures competently, and in accordance with health and safety guidelines</li> <li>8. Work within scope of practice and professional codes of conduct</li> <li>9. Communicate their ideas effectively to patients, relatives, carers and colleagues using a variety of media</li> <li>10. Work both collaboratively and with an appreciation of skills required for leadership</li> <li>11. Demonstrate an autonomous and reflective approach to lifelong learning</li> <li>12. Formulate learning and career development plans</li> <li>13. Use a range of information technologies</li> <li>14. Demonstrate a high level of numeracy and problem-solving skills</li> </ol>	<p>project and debates, placements, practical clinical sessions.</p> <p>Experiential learning also includes laboratory classes, clinical placements, and a research project.</p> <p>These skills are consolidated by reading, group work, problem-based learning exercises, structured and directed learning, analysis of case studies, and through reflection, placement and development of portfolio material</p> <p><b>Assessment Method</b></p> <p>Students' skills are assessed via formative and summative assessment by written work, examinations, online quizzes, case studies, assessment of clinical practice and peer presentation.</p> <p>Written work includes laboratory reports and research findings, with clinical skills also assessed by OSPEs and portfolios of clinical practice. Additionally, placement assessment requires case study presentation which incorporates data analysis, interpretation and reflective practice.</p>
<p><b>12. Programme structure (levels, modules, credits and progression requirements)</b></p>	
<p><b>Please see figures 12.1 and 12.2 below</b></p>	

## 12. 1 Overall structure of the programme: full-time example

### Programme Structure: BSc (Hons) Healthcare Science (Cardiac Physiology) (Apprenticeship) Full Time Example

All modules in each year run concurrently over both terms, with focused clinical training and planned clinical assessments taking place at intersections in each year. Only module BMS3236 runs over both terms in Year 4 with much of it spent on focused clinical training.

- Students, who have passed year 1 modules, can exit with a CertHE in Healthcare Science
- Students, who have passed year 1 and 2 modules, can exit with a DipHE in Healthcare Science

#### Year 1: Term 1 and 2

<b>BMS1004</b> <b>Professional Practice</b> (includes 10 weeks of focussed clinical training in term 2 starting in week 16) (15 Credits)	<b>BMS1014</b> <b>Biological Basis of Healthcare</b>  (30 Credits)	<b>BMS1024</b> <b>Social Aspects of Healthcare</b>  (15 Credits)	<b>BMS1624</b> <b>Clinical Technology &amp; Mathematics</b>  (15 Credits)	<b>BMS1054</b> <b>Cardiovascular &amp; Respiratory Systems</b>  (15 Credits)	<b>BMS1044</b> <b>Cardiac, Respiratory &amp; Sleep Physiology</b>  (30 credits)	<b>EXIT POINT:</b> Pass all year 1 modules: CertHE Healthcare Science
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#### Year 2: Term 1 and 2

<b>BMS2015</b> <b>Research Methods &amp; Professional Practice</b> (includes 15 weeks of focussed clinical training starting at the end of term 2) (30 Credits)	<b>BMS2625</b> <b>Medical Instrumentation and Imaging</b>  (15 Credits)	<b>BMS2445</b> <b>Cardiovascular and Respiratory Conditions</b>  (30 Credits)	<b>BMS2885</b> <b>Cardiovascular Science</b>  (45 Credits)	<b>EXIT POINT:</b> Pass all year 1 and 2 modules: DipHE Healthcare Science
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#### Year 3 – Term 1 only (until teaching week 9)

<b>BMS3236</b> <b>Professional Practice</b> (Includes 25 weeks of work based training with focussed clinical training; 3 weeks before term 1 and 22 weeks from week 10) (30 Credits)	<b>BMS3336</b> <b>Dissertation</b>  (30 Credits)	<b>BMS3826</b> <b>Provocative Electro-cardiography</b>  (15 credits)	<b>BMS3856</b> <b>Pacing &amp; Catheterisation</b>  (45 Credits)
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## 12. 2 Overall structure of the programme: part-time example

### Programme Structure: BSc (Hons) Healthcare Science (Cardiac Physiology) (Apprenticeship) Part Time Example

All modules in each year run concurrently over both terms, with focused clinical training and planned clinical assessments taking place at intersections in each year. Only module BMS3236 runs over both terms in Year 4 with much of it spent on focused clinical training.

- Students, who have passed year 1 modules, can exit with a CertHE in Healthcare Science
- Students, who have passed year 1 and 2 modules, can exit with a DipHE in Healthcare Science

#### Year 1 – Term 1 and 2

<b>BMS1234</b> <b>Professional Practice</b> (includes 10 weeks of placement in term 2 starting in week 16) (15 credits)	<b>BMS1014</b> <b>Biological Basis of Healthcare</b> (30 Credits)	<b>BMS1024</b> <b>Social Aspects of Healthcare</b> (15 Credits)	<b>BMS1624</b> <b>Clinical Technology &amp; Mathematics</b> (15 Credits)	<b>BMS1054</b> <b>Cardiovascular &amp; Respiratory Systems</b> (15 Credits)
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#### Year 2 – Term 1 and 2

<b>BMS2015</b> <b>Research Methods &amp; Professional Practice</b> (includes 15 weeks of placement starting at the end of term 2) (30 Credit Points)	<b>BMS2625</b> <b>Medical Instrumentation and Imaging</b> (15 Credits)	<b>BMX1044</b> <b>Cardiac, Respiratory and Sleep Science</b> (30 credits)	<b>EXIT POINT:</b> Pass all year 1 & 2 modules: <b>CertHE Healthcare Science</b>
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#### Year 3: Term 1 and 2

<b>BMS2445</b> <b>Cardiovascular and Respiratory Conditions</b> (15 Credits)	<b>BMS2885</b> <b>Cardiovascular Science</b> (45 Credits)	<b>BMS2445</b> <b>Cardiovascular and Respiratory Conditions</b> (30 Credits)	<b>BMS3336</b> <b>Dissertation</b> (30 Credits)	<b>EXIT POINT:</b> Pass all year 1 and 2 modules: <b>DipHE Healthcare Science</b>
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#### Year 4– Term 1 only (until teaching week 9)

<b>BMS3236</b> <b>Professional Practice</b> (Includes 25 weeks of work based training with focussed clinical training; 3 weeks before term 1 and 22 weeks from week 10) (30 Credits)	<b>BMS3826</b> <b>Provocative Electrocardiography</b> (15 credits)	<b>BMS3856</b> <b>Pacing &amp; Catheterisation</b> (45 Credits)
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<b>12.2 Levels and modules</b>		
Level 4		
COMPULSORY	OPTIONAL	PROGRESSION REQUIREMENTS
Students must take all the following: BMS1004 BMS1014 BMS1024 BMS1624 BMS1054 BMS1444	There are no optional modules.	All module assessments must be passed.  Exit point (120 credits): <b>CertHE (Healthcare Science)</b>
Level 5		
COMPULSORY	OPTIONAL	PROGRESSION REQUIREMENTS
Students must take all the following: BMS2015 BMS2455 BMS2445 BMS2885	There are no optional modules.	All module assessments must be passed.  Exit point (240 credits): <b>DipHE (Healthcare Science)</b>
Level 6		
COMPULSORY	OPTIONAL	PROGRESSION REQUIREMENTS
Students must take all the following: BMS3236 BMS3336 BMS3826 BMS3856	There are no optional modules.	All module assessments must be passed.
<b>12.3 Non-compensatable modules</b>		
Module level	Module code	
4-6	All	
<b>13. Curriculum map relating learning outcomes to modules – see Appendix 2</b>		
<b>14. Information about assessment regulations</b>		
<ul style="list-style-type: none"> <li>• The assessment regulations are the general university regulations.</li> <li>• A student, who is unable to complete the honours degree due to illness, will be eligible for aegrotat degree in healthcare science without a specialism in the title of the award; students will not have met the programme outcomes therefore will not be qualified to work as a healthcare science practitioner.</li> </ul>		

<b>15. Placement opportunities, requirements and support (if applicable)</b>	
Apprentices will be employed as Cardiac Physiology Degree Apprentices for the duration of the programme.	
<b>16. Future careers (if applicable)</b>	
<p>On completion of programme, graduates may apply for a NHS band 5 healthcare science post in Cardiac Physiology or equivalent post in the private sector. Steady progression to Band 7 can be achieved in several years via Clinical Professional Development (CPD) within post. Alternatively, suitable graduates could gain a place on an NHS Scientist Training Programme (STP) and study at Master's level to become physiological scientists. STP graduates can work in the NHS at Band 7 or higher. For STP training places, a 2:1 in the PTP (or a relevant science degree is the minimum required).</p> <p>For those graduates that aim to progress to Band 8 or above via CPD, a master's degree will be essential.</p>	
<b>17. Support for learning (if applicable)</b>	
<p>Key areas:</p> <ul style="list-style-type: none"> <li>• Specialist laboratory facilities available on site to learn and develop practical skills</li> <li>• Online support for all modules in the programme available on My Learning</li> <li>• Learning resource facilities at the University including computing suites and internet access</li> <li>• Access to English Language and Learning Support on campus</li> <li>• Student welfare</li> </ul> <p>UniHelp is the University's central service; you can contact UniHelp online, by phone, in person and via Chat.  <a href="http://unihub.mdx.ac.uk/your-support-services/unihelp">http://unihub.mdx.ac.uk/your-support-services/unihelp</a></p> <p>You can also use our FAQs to find the answer to your question here:  <a href="http://wgfp-prrw02.mdx.ac.uk:8001/KnowledgeBase/FaqSearch.aspx">http://wgfp-prrw02.mdx.ac.uk:8001/KnowledgeBase/FaqSearch.aspx</a></p> <p><b>Student Welfare Advice Team</b> – providing information and advice on money and funding matters, and housing  <a href="http://www.mdx.ac.uk/life-at-middlesex/support-services/finance/student-welfare">http://www.mdx.ac.uk/life-at-middlesex/support-services/finance/student-welfare</a></p> <p><b>Learning Enhancement Team (LET)</b>  They provide academic support to you in areas such as writing essays and reports, giving presentations and participating in academic discussions.  Contact Details: <a href="http://unihub.mdx.ac.uk/let">http://unihub.mdx.ac.uk/let</a> , <a href="mailto:LET@mdx.ac.uk">LET@mdx.ac.uk</a></p>	
<b>18. JACS code (or other relevant coding system)</b>	Cardiac Physiology 144B91F (B702)

<b>19. Relevant QAA subject benchmark group(s)</b>	N/A
<b>20. Reference Points</b>	
<p>The following reference points were used in designing the Programme:</p> <p><b>Internal documentation:</b></p> <ul style="list-style-type: none"> <li>• Middlesex University (2014) <i>Learning Framework Document</i></li> <li>• Middlesex University (2018/19) <i>Middlesex University Regulations</i>. MU</li> <li>• Middlesex University (2018/19) <i>Learning and Quality Enhancement Handbook</i>. MU</li> </ul> <p><b>External Documentation:</b></p> <ol style="list-style-type: none"> <li>1. Quality Assurance Agency (2008) <i>The QAA Framework for framework for higher education qualifications in England, Wales and Northern Ireland</i>. QAA</li> <li>2. Quality Assurance Agency (2010) <i>Code of practice for the assurance of academic quality and standards in higher education - Section 9: Work-based and placement learning</i>. QAA</li> <li>3. National School for Healthcare Science (2016) <i>Modernising Scientific Careers, Practitioner Training Programme, BSc (Hons) Healthcare Science Curriculum: Cardiovascular, Respiratory and Sleep Sciences 2016/17</i></li> <li>4. Institute for Apprenticeships &amp; Technical Education Apprenticeship Standards (2017) <i>Healthcare Science Practitioner integrated degree Level 6 – Reference STO413 (V:1)</i></li> </ol>	
<b>21. Other information</b>	
<p><b>Course costs;</b> (see programme handbook for further details)</p> <p>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</p>	



## Appendix 1: Curriculum Map

### *BSc (Hons) Healthcare Science (Cardiac Physiology) (Apprenticeship)*

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		Skills (cont.)	
A1	Skills and attitude required to work as a healthcare science practitioner	B5	Present information in the most effective format to communicate ideas clearly
A2	Normal and abnormal human anatomy and physiology	B6	Design and carry out a research project or clinical audit
A3	The principles of diagnosis and management of human diseases	B7	Perform a wide range of clinical procedures competently, and in accordance with health and safety guidelines
A4	The sciences underpinning quality healthcare delivery	B8	Work within scope of practice and professional codes of conduct
A5	The importance of scientific research in the advancement of healthcare practice	B9	Communicate their ideas effectively to patients, relatives, carers and colleagues using a variety of media
A6	The role and skills required by the cardiac physiology practitioner in the delivery and monitoring of diagnostic and therapeutic investigations	B10	Work both collaboratively and with an appreciation of skills required for leadership
A7	The role of a Healthcare Science Practitioner and skills required for service improvement	B11	Demonstrate an autonomous and reflective approach to lifelong learning
<b>Skills</b>			
B1	Critically evaluate research evidence in the context of current theory or practice	B12	Formulate learning and career development plans
B2	Solve clinical problems	B13	Use a range of information technologies
B3	Appraise and synthesise evidence-based information to gain new insights into aspects of current practice	B14	Demonstrate a high level of numeracy and problem-solving skills
B4	Reflect on own learning and practice to develop personally and professionally		



