Programme Specification

BSc Healthcare Science (Cardiac Physiology)

1. Programme title	BSc (Hons) Healthcare Science (Cardiac Physiology)
2. Awarding institution	Middlesex University
3. Teaching institution	Middlesex University
4. Programme accredited by	
5. Final qualification	BSc (Hons) Healthcare Science (Cardiac Physiology) BSc Healthcare Science CertHE Healthcare Science DipHE Healthcare Science
6. Academic year	2019/2020
7. Language of study	English
8. Mode of study	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 or an IELTS score band 7.0 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. However, only students who have done an equivalent programme at another HEI can be admitted via the RPL process and evidence must be provided.

All candidates are invited to interview prior to receiving an offer. This process involves a numeracy test, plus a 200-300 word essay (written on the day without preparation) discussing a little of the applicant's background and rationale behind their application, followed by a group interview in which applicants discuss healthcare scenarios provided by the interview team. This process helps to demonstrate the applicants' communication skills, attributes and beliefs plus an understanding of the programme.

Disclosure and Barring Service (DBS) and health clearances are also required, which must be achieved before the start of the placement. Students do not pay for the DBS and health checks. Students, who do not get either a DBS or health clearance, will be able to discuss their options with the programme team.

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	**Teaching/learning methods**
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	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	Teaching/learning methods
On completion of this programme the successful student will be able to: 1. Critically evaluate research evidence in the context of current theory and practice 2. Solve clinical problems 3. Appraise and synthesise evidence-based information to gain new insights into aspects of current practice 4. Reflect on own learning and practice to develop personally and professionally 5. Present information in the most effective format to communicate ideas clearly 6. Design and carry out research project or clinical audit 7. Perform a wide range of clinical procedures competently, and in accordance with health and safety guidelines 8. Work within scope of practice and professional codes of conduct 9. Communicate their ideas effectively to patients, relatives, carers and colleagues using a variety of media 10. Work both collaboratively and with an appreciation of skills required for leadership 11. Demonstrate an autonomous and reflective approach to lifelong learning 12. Formulate learning and career development plans 13. Use a range of information technologies 14. Demonstrate a high level of numeracy and problem-solving skills	Students learn cognitive, practical and graduate skills through lectures, seminars, discussions, peer presentations, a research project and debates, placements, practical clinical sessions. Experiential learning also includes laboratory classes, clinical placements, and a research project. 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 **Assessment Method** Students' skills are assessed via formative and summative assessment by written work, examinations, online quizzes, case studies, assessment of clinical practice and peer presentation. 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.
12. Programme structure (levels, modules, credits and progression requirements)	

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

All modules in each year run concurrently over both terms, with placement taking place at intersections in each year (see figure 1 below)
Nb: placement in each year runs beyond the end of term 2 and teaching weeks (students will receive a Placement Planner with all relevant dates)

- 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

BMS1044 **Cardiac, Respiratory and Sleep Science** **(30 Credits)**	**BMS1014** **Biological Basis of Healthcare** (30 Credits)	**BMS1024** **Social Aspects of Healthcare** (15 Credits)	**BMS1644** **Clinical Technology & Mathematics** (15 Credits)	**BMS1054** **Cardiovascular & Respiratory Systems** (15 Credits)

Year 2 – Term 1 and 2

BMS2015 **Research Methods & Professional Practice** (includes 15 weeks of placement starting at the end of term 2) (30 Credits)	**BMS2625** **Medical Instrumentation and Imaging** (15 Credits)	**BMS2445** **Cardiovascular and Respiratory Conditions** (30 Credits)	**BMS2885** **Cardiovascular Science** (45 Credits)	**EXIT POINT:** **Pass all year 1 modules: CertHE in Healthcare Science**

Year 3 – Term 1 only (until teaching week 10)

BMS3236 **Professional Practice** (Includes 25 weeks of placement: 3 weeks prior to Term 1; then 22 weeks from teaching week 10) (30 Credits)	**BMS3336** **Dissertation** (30 Credits)	**BMS3826** **Provocative Electrocardiography** (15 Credits)	**BMS3856** **Pacing & Catheterisation** (45 Credits)	**EXIT POINT:** **Pass all year 1 & 2 modules: DipHE in Healthcare Science**

12.1 Overall structure of the programme: part-time example

Year 1 – Term 1 and 2

BMS1234 **Professional Practice** (includes 10 weeks of placement in term 2 starting in week 16) (15 credits)	**BMS1xx4** **Biological Basis of Healthcare** (30 Credits)	**BMS1xxx4** **Social Aspects of Healthcare** (15 Credits)	**BMS1624** **Clinical Technology & Mathematics** **(15 Credits)**	**BMS1XX4** **Cardiovascular & Respiratory Systems** (Formerly BMS1804) (15 Credits)

Year 2 – Term 1 and 2

BMS2015 **Research Methods & Professional Practice** (includes 15 weeks of placement starting at the end of term 2) (30 Credit Points)	**BMS2625** **Medical Instrumentation and Imaging** (15 Credits)	**BMX1XX4** **Cardiac, Respiratory and Sleep Science** (Formerly BMS1884) (30 credits)	EXIT POINT: Pass all year 1 & 2 modules: **CertHE in Healthcare Science**

Year 3 - Term 1 and 2

BMS2885 **Cardiovascular Science** (45 Credits)	**BMS2445** **Cardiovascular and Respiratory Conditions** (30 Credits)	**BMS3336** **Dissertation** (30 Credits)

Year 4 – Term 1 only (until teaching week 10)

BMS3236 **Professional Practice** (Includes 25 weeks of placement: 3 weeks prior to Term 1; then 22 weeks from teaching week 10) (30 Credits)	**BMS3826** **(Provocative Electrocardiography** (15 Credits)	**BMS3856** **Pacing & Catheterisation** (45 Credits)	EXIT POINT: Pass all year 1, 2 & 3 modules: **DipHE in Healthcare Science**

The part-time programme will only be available for students employed by the appropriate clinical physiology laboratory in an NHS hospital. It will allow students to remain in full-time employment whilst studying. Attendance requirements for students is 2 days per week, to minimise time away from employment.

12.2 Levels and modules

Level 4

COMPULSORY	OPTIONAL	PROGRESSION REQUIREMENTS
Students must take all the following: BMS1234 BMS1014 BMS1024 BMS1624 BMS1054 BMS1444	There are no optional modules.	All module assessments must be passed. Exit point (120 credits): **CertHE (Healthcare Science)**

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): **DipHE (Healthcare Science)**

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.

12.3 Non-compensatable modules

Module level	Module code
4-6	All

13. Curriculum map relating learning outcomes to modules – see Appendix 2

14. Information about assessment regulations

-
- The assessment regulations are the general university regulations.
- 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.

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

Placements are an integral part of the programme. Over the three years, students will spend a total of 50 weeks in a NHS clinical physiology department in London or the South East; 10 weeks in year 1, 15 weeks in year 2 and 25 weeks in year 3.

Students are only placed in University approved learning environments. The designated Placement Officer, in collaboration with placement providers, will ensure that learning opportunities and support will be available in the placement area to help students meet the module learning outcomes and complete the Practitioner Training Programme (PTP) training manual.
Both parties will also ensure that a robust quality monitoring processes will be in place and establish clear lines of communication.

Prior to going on placement, students are required to get an enhanced DBS and Occupational Health clearance. Students, who do not get either an enhanced DBS or Occupational Health clearance, will be unable to go on placement, but will be able to discuss their options with the programme team. DBS checks and Occupational Health appointments are arranged by the University. Placement is unpaid.

Students are notified in advanced of their placement allocation and contact details of placement staff. Students will be required to attend placement Monday to Friday during normal working hours; 37.5 hours per week. Their duty rota may include Bank Holidays. Any absences must be reported to both the Programme Leader and the placement mentor, following local sickness reporting policies.

At the start of each placement, students will receive an induction and support and guidance will be provided for students with diverse needs.

Each placement area is given a copy of the placement handbook, which outlines, for example, lines of communication, contact details of key academic staff, attendance policy and complaints procedures. Practice learning is assessed using the training manual and written assignments.

In the final year, students have an opportunity to undertake a research project, which could include a clinical audit. Research projects carried out on placement will require local ethical approval.

16. Future careers (if applicable)

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).
For those graduates that aim to progress to Band 8 or above via CPD, a master's degree will be essential.

17. Support for learning (if applicable)

Key areas:

- Specialist laboratory facilities available on site to learn and develop practical skills
- Online support for all modules in the programme available on My Learning
- Learning resource facilities at the University including computing suites and internet access
- Access to English Language and Learning Support on campus
- Student welfare

UniHelp is the University's central service; you can contact UniHelp online, by phone, in person and via Chat.
http://unihub.mdx.ac.uk/your-support-services/unihelp

You can also use our FAQs to find the answer to your question here:
http://wgfp-prrw02.mdx.ac.uk:8001/KnowledgeBase/FaqSearch.aspx

Student Welfare Advice Team – providing information and advice on money and funding matters, and housing
http://www.mdx.ac.uk/life-at-middlesex/support-services/finance/student-welfare

Learning Enhancement Team (LET)
They provide academic support to you in areas such as writing essays and reports, giving presentations and participating in academic discussions.
Contact Details: http://unihub.mdx.ac.uk/let , LET@mdx.ac.uk

18. JACS code (or other relevant coding system)	Cardiac Physiology 144B91F (B702)
19. Relevant QAA subject benchmark group(s)	N/A

20. Reference Points

The following reference points were used in designing the Programme:

Internal documentation:

- Middlesex University (2014) *Learning Framework Document*
- Middlesex University (2018/19) *Middlesex University Regulations.* MU
- Middlesex University (2018/19) *Learning and Quality Enhancement Handbook.* MU

External Documentation:

1. Quality Assurance Agency (2008) *The QAA Framework for framework for higher education qualifications in England, Wales and Northern Ireland.* QAA
2. Quality Assurance Agency (2010) *Code of practice for the assurance of academic quality and standards in higher education - Section 9: Work-based and placement learning. QAA*
3. National School for Healthcare Science (2016) Modernising Scientific Careers, Practitioner Training Programme, BSc (Hons) Healthcare Science Curriculum: *Cardiovascular, Respiratory and Sleep Sciences* 2016/17

21. Other information

Course costs; (see programme handbook for further details)

The following course-related costs are not included in the fees:

- Travel costs to Middlesex campus
- Travel costs *within* London (i.e. within TfL Travel Zones) during placement:
    - Travel card / season tickets, cost depending on start point of journey
    - Placement location to be provided during the first term.

You ***may*** also be required to purchase the following to complete the course:

- Visits to NHS meetings (~ 4 one-day travel cards / year)
- Additional books that you wish to purchase

Students that are placed outside of London (i.e. beyond TfL Travel Zone 9) will have travel costs or accommodation paid by the University.

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.

Appendix 2: Curriculum Map

BSc(Hons) Healthcare Science (Cardiac Physiology)

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
Skills			
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		

BSc(Hons) Healthcare Science (Cardiac Physiology)

Programme outcomes																				
A1	A2	A3	A4	A5	A6	A7	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12	B13	B14
Highest level achieved by all graduates																				
6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6

Module Title	Module Code by Level	A 1	A 2	A 3	A 4	A 5	A 6	A 7		B 1	B 2	B 3	B 4	B 5	B 6	B 7	B 8	B 9	B10	B11	B12	B13	B14
Professional Practice	BMS1234	x	x	x			x			x	x	x	x	x		x	x	x	x	x	x	x	x
Social Aspects of Healthcare Science	BMS1024	x		x						x				x				x					
Biological Basis of Healthcare Science	BMS1014		x		x	x				x													
Cardiovascular and Respiratory Systems	BMS1054		x	x	x							x		x									
Clinical Technology & Clinical Mathematics	BMS1624				x																	x	x
Cardiac, Respiratory and Sleep Sciences	BMS1044	x	x	x	x		x			x		x		x								x	
Research Methods and Professional Practice	BMS2015	x		x		x	x	x		x		x		x	x	x	x	x	x	x	x	x	x
Cardiovascular Conditions	BMS2445			x	x	x				x		x		x									
Medical Instrumentation and Imaging	BMS2625				x							x		x								x	
Cardiovascular Science	BMS2885		x	x	x		x			x	x	x		x									
Dissertation	BMS3336					x		x		x	x	x	x	x	x			x	x			x	x
Professional Practice	BMS3236	x		x			x	x		x	x	x	x	x		x	x	x	x	x	x		
Provocative Electrophysiology	BMS3826		x	x				x	x	x		x											
Pacing and Catheterisation	BMS3856				x		x	x		x	x	x		x									