Programme Specification

Cardiac Physiology (Healthcare Science) (2019-20)

This specification provides a concise summary of the main features of the programme and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if s/he takes full advantage of the learning opportunities that are provided.

Awarding Institution	University of Southampton
Teaching Institution	University of Southampton
Mode of Study	Full-time
Duration in years	3
Accreditation details	National School of Healthcare Sciences (NSHCS)
	Registration Council for Clinical Physiologists (RCCP)
Final award	Bachelor of Science with Honours (BSc (Hons))
Name of award	Cardiac Physiology (Healthcare Science)
Interim Exit awards	Bachelor of Science (Ordinary) in Health Studies
	Certificate of Health Studies
	Diploma of Health Studies
FHEQ level of final award	Level 6
UCAS code	
Programme code	8409
QAA Subject Benchmark or other external reference	
Programme Lead	Richard Bain (rb2d12)

Programme Overview

Brief outline of the programme

This BSc (Hons) Cardiac Physiology (Healthcare Science) programme is a three year course which, upon successful completion, entitles you to apply for registration with the Academy of Healthcare Science (AHCS) and the Registration Council for Clinical Physiologists (RCCP) as a cardiac physiologist.

Cardiac physiology is concerned with heart function and throughout your study you will learn how to diagnose and treat a spectrum of cardiac related pathologies thanks to our state of the art learning facilities, highly respected academics and clinical placements in NHS Hospitals. You will gain experience in using medical equipment to perform a range of tests, initially in our dedicated clinical skills facility and then out on placement in an NHS Hospital. Supported by lectures, seminars and visits to dissection rooms, you will develop an in depth theoretical understanding covering topics such as anatomy & physiology, pathology, scientific and research skills.

During the first year of this BSc Healthcare Science degree course you will study both cardiac physiology and respiratory & sleep physiology before specialising in cardiac physiology in your second and third years. In all three years you will attend clinical placement.

Your contact hours will vary depending on modules taken in each year. Full information about contact hours is provided in individual module profiles.

Learning and teaching

The Faculty has a published Learning & Teaching Strategy for its programmes which underlines its commitment to providing a student centered, friendly, supportive and receptive environment in which you will be able to reach your full potential and assume responsibility for your own learning objectives. You are supported in an experiential, problem-solving learning approach to acquire knowledge and skills in a contextual and integrated manner achieved through the use of: key-note lectures; student and tutor led tutorials and seminars; case-based learning; inter-professional and trans-disciplinary learning; group work; directed learning activities; practical skill based sessions; experiential learning; practice placement experience; web based learning and video/DVD resources. In addition, the Faculty has underlined its commitment to engage in the pursuit of research excellence to underpin practice by ensuring you are facilitated and supervised by research-led and research-informed academic educators. Your learning will be facilitated through: expert-led lectures; student and tutor-led seminars & debates; action learning sets; e-learning; problem-based learning opportunities; tutorials, self-directed study and conference style presentations. Finally, the Faculty is committed to developing learners who are independent, intrinsically motivated thinkers who can utilise reflective practice to critically analyse their own and others' practice both in the academic and practice placement settings. Your independent learning will be facilitated through active participation in learning sessions; computer based learning; self-directed study, guided learning activities; conference attendance; case based learning opportunities; tutorials; academic and personal reviews; personal portfolio development and reflective diaries.

Assessment

Throughout this healthcare science degree course you will be assessed on your knowledge, clinical skills and attitudes. You will be expected to complete essays and written exams, along with practical exams. Your clinical practice grades will also count towards your final award.

The Assessment Strategy for the Faculty allows you to demonstrate your successful learning using fair and reliable assessment methods. These include formative and summative assessments such as: essays; extended essays; written case studies; unseen examinations; practice placement assessment; production of research reports; practical/laboratory demonstrations; conference style practical presentations; poster presentations; critical appraisal of literature; group guided learning activities; group presentations and the use of video/DVD to demonstrate skills and reflection.

Special Features of the programme

Special features of the programme include:

- Access to a dedicated Skills facility equipped with cardiac and respiratory equipment, where you can apply your knowledge and gain practical competence on volunteer models before starting their clinical placements
- Access to the Faculty of Medicine's Anatomy Laboratory to enhance your anatomy and physiology learning

Please note: As a research-led University, we undertake a continuous review of our programmes to ensure quality enhancement and to manage our resources. As a result, this programme may be revised during a student's period of registration; however, any revision will be balanced against the requirement that the student should receive the educational service expected. Please read our Disclaimer to see why, when and how changes may be made to a student's programme.

Major changes to programmes are approved through the University's programme validation process which is described in the University's Quality handbook.

Educational Aims of the Programme

The main aims of the programme are to:

- Provide you with the knowledge, skills and attitudes to equip you for a career in modern clinical physiology
- Develop your understanding of the application of physiological science across cardiovascular and respiratory & sleep science so that you are able to work safely and effectively within these environments
- Recognise the principles and properties of the measurement techniques that underpin investigations in cardiology and respiratory & sleep science
- Develop your competence in applying professional skills to the autonomous practice of cardiac physiology or respiratory & sleep physiology
- Develop key, transferable skills for general use in graduate employment to enable you to become a provider of quality care for users of health services
- Develop critical and analytical competence so that you become a user and/or creator of research evidence to improve health care and its outcomes
- Provide opportunities for you to learn with and from other healthcare professionals so that you develop competence in inter-professional practice to meet the needs of service users
- Provide you with the enthusiasm and capacity for life-long learning
- Provide a responsive, nationally accredited, curriculum that acknowledges the need to work within a diverse and changing health and social care environment
- Provide a stimulating educational programme which fulfils the University criteria for the award of an honours degree.

Programme Learning Outcomes

Knowledge and Understanding

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

A1. Current theoretical perspectives on healthcare science practice

A2. Anatomy, physiology, pharmacology, pathology, biochemistry, immunology, epidemiology, public health medicine, genetics, microbiology and the psychosocial dimensions of health to provide the foundations for practice in the physiology divisions of healthcare science

A3. Requirements of the Department of Health (DoH) in respect of clinical governance and its importance within healthcare practice

A4. Ethical, moral and legal issues in relation to healthcare science

A5. The importance of the theoretical and scientific basis of evidence-based practice including research, research methodology and clinical audit in order to continually improve healthcare services

A6. Modern provision of healthcare in the public sector including health promotion: leadership, management, funding, structure, drivers of change and policies

Subject Specific Intellectual and Research Skills

On successful completion of this programme you will be able to:

B1. Formulate strategies for selecting appropriate and relevant information from a wide range of professional and inter-professional sources of knowledge

B2. Synthesise and critically appraise information from a variety of sources in order to gain a coherent and evidenced based understanding of healthcare science theory and practice

B3. Reflect critically on your own and other's professional practice and recognise the limits of your competency

B4. Utilise appropriate study skills to facilitate your own learning

B5. Engage in debate and discussion in areas of professional controversy and future professional development areas including debating leadership within the NHS

B6. Construct reasoned argument concerning the funding and ethics of modern health and social care

B7. Identify the needs of service users from physical, psychological, environmental, social, emotional and spiritual perspectives to understand and value the diversity and complexity of human behaviour

B8. Communicate with other professionals and agencies working in collaboration with cardiac and respiratory & sleep physiology services, to ensure the needs of service users are met

Transferable and Generic Skills

On successful completion of this programme you will be able to:

C1. Communicate effectively in a variety of forms to a variety of audiences

C2. Critically evaluate academic, clinical and professional performance and utilise research skills

C3. Effectively manage time and prioritise workload to sustain efficient and effective practice

C4. Work autonomously and develop leadership skills

C5. Demonstrate a concern for and promote the safety, rights, dignity and diversity of clients and colleagues

C6. Demonstrate adherence to safe practice by ensuring the safety of yourself as a practitioner, your client and others who utilise your service through risk assessment and management

C7. Utilise creative problem-solving skills in a variety of theoretical and practical situations

C8. Utilise information management/technologies to support learning, practice and research activities and take responsibility for this

C9. Contribute confidently and appropriately to discussion utilising evidence based practice to support and justify your argument and professional decisions

C10. Demonstrate effective self-management in order to manage personal emotions and stress

C11. Manage change effectively and respond to changing service demands

C12. Evaluate your own personal, academic, clinical and professional performance through reflective practice

C13. Take responsibility for the continuing development required to engage with life-long learning needs

Disciplinary Specific Learning Outcomes

On successful completion of this programme you will be able to:

E1. Practise autonomously, professionally and be responsible and accountable for safe, evidence-based practice with particular reference to cardiac physiological measurement and intervention

E2. Fully articulate the role of cardiac and respiratory & sleep physiologists in relevant patient pathways

E3. Demonstrate understanding of the broad base of physiological science and apply that knowledge with respect to the cardiac and respiratory clinical sciences

E4. Understand the patho-physiology of medical/surgical conditions which may determine cardiovascular and respiratory symptoms and patient well-being

E5. Understand the basic principles underpinning routine investigations and procedures carried out in the treatment of cardiovascular disease or respiratory disease

E6. Use appropriate diagnostic, decision-making and risk assessment skills and safely use invasive and non-invasive procedures, medical devices, current technological and pharmacological interventions

E7. Work in partnership with other healthcare professionals, agencies and service users in all settings to ensure decisions about care are informed and shared

E8. Promote the concept, knowledge and practice of patient centered care

Programme Structure

The programme structure table is below:

Information about pre and co-requisites are included in individual module profiles.

Part I

The programme is 3 years long and incorporates 1875 hours (50 weeks) of clinical practice in accordance with the requirements of NSHCS and RCCP.

All students are recruited into the cardiac specialism. The first year of the 3 year programme (level 4) is generic to both cardiac physiology and respiratory & sleep physiology. It provides an introduction to modern healthcare practice and deals with the scientific basis of healthcare, including anatomy, physiology and pathology modules, and modules which introduce basic diagnostic tests and the underpinning theory. During the year you will have the opportunity to observe in each of the two specialisms for one week, develop technical expertise in using devices in the dedicated skills facility and then, at the end of the academic year, undertake six weeks formal clinical placement leading to a total of ten weeks practice over the year.

Starting in the second year (level 5) you will follow the specialist cardiac pathway, studying modules dedicated to this area of practice. Second year modules are concerned with the application of basic sciences to real-life health scenarios and to learning about more advanced diagnostic techniques for practice in cardiac physiology. Other modules undertaken include signal processing and pathophysiology that enhance the context of your clinical knowledge. You will also study research methods focusing on both quantitative and qualitative approaches. After the Easter vacation, you will commence a formal 15 week clinical placement.

The final year of the programme (level 6) prepares you for autonomous practice in modern health care settings. It requires a focus on the application of cardiac physiology to patient care. It also requires a concentration on ethical, reflective professional practice and the skills necessary to undertake clinical research. All knowledge and skills acquired during the programme are put into practice in the final, formal clinical placement (25 weeks). Whilst on this final placement, you will undertake a research project, linked to your specialism, which will provide the basis for your final assessment submission.

The award of the degree of BSc (with Honours) is attained by following a 3 year route which comprises a 120 week programme and completion of a minimum of 180 European Credit Transfer Scheme (ECTS) points at the appropriate

levels (this is equivalent to 360 points in the UK Credit Accumulation and Transfer Scheme). The 3 year route is studied over 3 full academic years.

The 3 year programme is undertaken at National Qualifications Framework (NQF) academic levels 4, 5 and 6, corresponding to years 1, 2 and 3 and the University's Part 1, 2 and 3. Completion of each level accrues a minimum of 60 ECTS credits at the respective level. The 3 year route is normally completed in 3 years and the maximum allowed period of registration is normally 6 years. On the 3 year route students are required to be available for 5 days per week with a mixture of directed and self-directed study.

The programme is divided into study modules which each carry credit. All modules are core/mandatory to the programme in accordance with professional regulations. Multi-professional learning is a strength of the University of Southampton and students from several different disciplines (including: audiology; healthcare science; midwifery; nursing; occupational therapy; physiotherapy; podiatry) have opportunities to undertake shared learning in several modules throughout the programme.

The balance of the programme is 60% academic time and 40% practice placement designed so that on completion of the programme, students are ready for employment as cardiac physiologists. The amount of work-based learning (50 weeks) is determined by the requirements of the professional bodies (DoH, 2010, Modernising Scientific Careers Programme, London: TSO)

Part I

Code	Module Title	ECTS	Type
HSGM1001	An Introduction to Professional Practice (BSc) 2019-20	7.5	Core
HPRS1033	Applied Healthcare Science 2019-20	7.5	Core
HPRS1032	Extended Healthcare Science 2019-20	7.5	Core
HPRS1031	Foundations of Healthcare Science 2019-20	7.5	Core
HPRS1034	Scientific Basis of Cardiovascular/Respiratory and Sleep Science (part 1) 2019-20	7.5	Core
HPRS1035	Scientific Basis of Cardiovascular/Respiratory and Sleep Science (part 2) 2019-20	15	Core
HPRS1036	Work-Based Training 1 (Cardiac Physiology and Respiratory and Sleep Physiology) 2019-20	7.5	Core

Part II

Code	Module Title	ECTS	Type
HPRS2027	Non invasive Cardiac Physiology 2020-21	15	Core
HPRS2030	Instrumentation, Signal Processing and Imaging 2020-21	15	Core
HPRS2031	Public health aspects of Cardiovascular pathology 2020-21	7.5	Core
HSGM2001	Research Methods 2019-20	7.5	Core
HPRS2033	Work-based Training 2 Cardiac Physiology (Clinical Portfolio) 2020-21	7.5	Core
HPRS2032	Work-based Training 2 Cardiac Physiology (Specialist Skills) 2020-21	7.5	Core

Part III

Code	Module Title	ECTS	Type
HPRS3BBB	Invasive Cardiac Physiology 2021-22	15	Core
HSGM3AAA	Influencing Innovation and Change (Level 6) 2021-22	7.5	Core
HPRS3ZZZ	Research Project 2021-22	15	Core
HPRS3GGG	Work-based Training 3 Cardiac Physiology (Clinical Portfolio) 2021-22	15	Core
HPRS3EEE	Work-based Training 3 Cardiac Physiology (Specialist Skills) 2021-22	7.5	Core

Progression Requirements

The programme will follow the University's regulations for ***Progression, Determination and Classification of Results: Undergraduate and Integrated Masters Programmes*** as set out in the General Academic Regulations in the University Calendar: http://www.calendar.soton.ac.uk/sectionIV/sectIV-index.html

Support for student learning

There are facilities and services to support your learning some of which are accessible to students across the University and some of which will be geared more particularly to students in your particular Faculty or discipline area.

The University provides:

- library resources, including e-books, on-line journals and databases, which are comprehensive and up-to-date; together with assistance from Library staff to enable you to make the best use of these resources
- high speed access to online electronic learning resources on the Internet from dedicated PC Workstations onsite and from your own devices; laptops, smartphones and tablet PCs via the Eduroam wireless network. There is a wide range of application software available from the Student Public Workstations.
- computer accounts which will connect you to a number of learning technologies for example, the Blackboard virtual learning environment (which facilitates online learning and access to specific learning resources)
- standard ICT tools such as Email, secure filestore and calendars.
- access to key information through the MySouthampton Student Mobile Portal which delivers timetables, Module information, Locations, Tutor details, Library account, bus timetables etc. while you are on the move.
- IT support through a comprehensive website, telephone and online ticketed support and a dedicated helpdesk in the Hartley Library.
- Enabling Services offering support services and resources via a triage model to access crisis management, mental health support and counselling. Support includes daily Drop In at Highfield campus at 13.00 – 15.00 (Monday, Wednesday and Friday out of term-time) or via on-line chat on weekdays from 14.00 – 16.00. Arrangements can also be made for meetings via Skype.
- assessment and support (including specialist IT support) facilities if you have a disability, long term health problem or Specific Learning Difficulty (e.g. dyslexia).
- the Student Services Centre (SSC) to assist you with a range of general enquiries including financial matters, accommodation, exams, graduation, student visas, ID cards
- Career and Employability services, advising on job search, applications, interviews, paid work, volunteering and internship opportunities and getting the most out of your extra-curricular activities alongside your degree programme when writing your CV
- Other support that includes health services (GPs), chaplaincy (for all faiths) and 'out of hours' support for students in Halls and in the local community, (18.00-08.00)
- A Centre for Language Study, providing assistance in the development of English language and study skills for non-native speakers.

The Students' Union provides

- an academic student representation system, consisting of Course Representatives, Academic Presidents, Faculty Officers and the Vice-President Education; SUSU provides training and support for all these representatives, whose role is to represent students' views to the University.
- opportunities for extracurricular activities and volunteering
- an Advice Centre offering free and confidential advice including support if you need to make an academic appeal
- Support for student peer-to-peer groups, such as Nightline.

Associated with your programme you will be able to access:

- Professional bodies' (e.g. Society for Cardiological Science and Technology (SCST)) libraries, journals, special interest groups and publications
- Support while in placement via the School support strategy for learning in practice
- Facilities based at some of the sub campuses/study centres.

Methods for evaluating the quality of teaching and learning

You will have the opportunity to have your say on the quality of the programme in the following ways:

We consider it extremely important that your comments and those of your student colleagues influence any change and development that may be made to the programme. We intend that the programme is 'student

centred' and to meet that we aim to encourage you to have your say on the learning experience at Southampton. We will achieve this through seeking your views and opinions by:

- Monitoring of individual student progression through personal tutor and review system
- Monitoring of modules through student mentor system
- Module evaluation and report including for practice placement
- Annual School/University Learning and Teaching Reports and Action Plans
- Annual monitoring by Higher Education Wessex
- Annual external examiners' reports
- Annual report to the professional bodies
- Quinquennial review and re-approval involving professional statutory bodies, the University, Higher Education Wessex, employers and peer professionals
- Student reflection of clinical experience
- Student membership of programme committees.

Further details on the University's quality assurance processes are given in the *Quality Handbook.*

Career Opportunities

Cardiac physiologists are at the forefront of technological and scientific developments in the health sector. They work as part of medical teams primarily in hospitals focusing on cardiovascular related conditions. After graduating with a degree in Cardiac Physiology (Healthcare Science), you will be eligible to apply for professional registration and could pursue a career with the National Health Service (NHS). As a cardiac physiologist practitioner, you will work with people of all ages with suspected illnesses. The ability to work closely with specialist doctors, nurses and other health professionals will be essential. That is why individuals with excellent interpersonal skills are ideal candidates for this profession. Many students return to the University during their careers to continue their professional development. To meet this demand, the Faculty of Health Sciences offers short post-qualification courses, MSc, PhD, Integrated PhD and Clinical Doctorate programmes on a full or part-time basis.

More information about careers in Healthcare Science can be found on the NHS Careers website.

External Examiner(s) for the programme

Mrs Cherith Wood – Plymouth University

Students must not contact External Examiner(s) directly, and external examiners have been advised to refer any such communications back to the University. Students should raise any general queries about the assessment and examination process for the programme with their Course Representative, for consideration through Staff: Student Liaison Committee in the first instance, and Student representatives on Staff: Student Liaison Committees will have the opportunity to consider external examiners' reports as part of the University's quality assurance process.

External examiners do not have a direct role in determining results for individual students, and students wishing to discuss their own performance in assessment should contact their Personal Academic Tutor in the first instance.

Please note: This specification provides a concise summary of the main features of the programme and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if s/he takes full advantage of the learning opportunities that are provided. More detailed information can be found in the programme handbook.

Appendix 1:

Students are responsible for meeting the cost of essential textbooks, and of producing such essays, assignments, laboratory reports and dissertations as are required to fulfil the academic requirements for each programme of study. In addition to this, students registered for this programme also have to pay for:

Additional Costs

Type	Details
Other	You will be expected to self-fund text books, travel outside of placements including any elective experiences, a university approved calculator for medicines management examinations, and a laboratory coat for your health sciences module. These requirements will be made explicit in the module specifications.
Travel Costs for placements	This programme involves mandatory placements in all years. The placements are organised by the University and will take place with regional healthcare providers; as such students will need to travel to placements/arrange accommodation. From August 2017, new students in England who pursue a career in Nursing, Midwifery and most Allied Health Professional (AHP) pre-registration courses will have access to the standard student support package of tuition fee loans and support for living costs, instead of receiving an NHS bursary. Students who are on an eligible programme may be entitled to claim travel and accommodation expenses incurred over and above daily travel costs to the University. The costs must be related to essential practice placements.

In some cases you'll be able to choose modules (which may have different costs associated with that module) which will change the overall cost of a programme to you. Details of such costs will be listed in the Module Profile. Please also ensure you read the section on additional costs in the University's Fees, Charges and Expenses Regulations in the University Calendar available at www.calendar.soton.ac.uk.