



**CORPORATE AND ACADEMIC SERVICES**

**MODULE SPECIFICATION**

Part 1: Basic Data					
Module Title	Applied Cardiac Physiology				
Module Code	USSJY4-30-3	Level	3	Version	1.1
Owning Faculty	HAS	Field	Applied Sciences		
Department	Applied Sciences				
Contributes towards	BSc. (Hons) Healthcare Science (Physiological Sciences) : Cardiac Physiology				
UWE Credit Rating	30	ECTS Credit Rating	15	Module Type	Standard
Pre-requisites	USSKAX-30-2 CARDIOVASCULAR PHYSIOLOGY AND PATHOPHYSIOLOGY B, USSKAW-30-2, CARDIOVASCULAR HYSIOLOGY AND PATHOPHYSIOLOGY A		Co- requisites	None	
Excluded Combinations	None		Module Entry requirements	None	
Valid From	September 2012		Valid to	September 2018	

<b>CAP Approval Date</b>	V1 <i>May 2012</i> V1.1 <i>July 2016</i>
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Part 2: Learning and Teaching	
Learning Outcomes	<p>On successful completion of this module students will be able to:</p> <ol style="list-style-type: none"> <li>1. Discuss the key areas of physiology, pathophysiology and pharmacology related provocative electrocardiography, and diagnostic cardiac catheterisation (A1&amp;2, B)</li> <li>2. Discuss the practice and principles of provocative testing. (A1&amp;2, B)</li> <li>3. Discuss the underpinning principles and practice of invasive pressure measurement and cardiac interventions. (A1&amp;2, B)</li> <li>4. Discuss the differences between children and adults with respect to cardiac physiology investigations and demonstrate the ability to apply this to clinical situations. (A1&amp;2, B)</li> <li>5. Critically evaluate the importance of patient-centred care within the relevant care pathway, and discuss the problems associated with the care of patients undergoing cardiac investigations or treatments. (A1&amp;2, B)</li> <li>6. Actively seek accurate and validated information from all available sources with respect to cardiac investigations. (A1&amp;2, B)</li> <li>7. Select and apply appropriate analysis or assessment techniques and tools. (A1&amp;2, B)</li> </ol> <p>In addition the educational experience may explore, develop, and practise <u>but not formally discretely assess</u> the following Professional aspects, as set out within the Modernising Scientific Careers Curriculum:</p>

	<ol style="list-style-type: none"> <li>1. Respect and uphold the rights, dignity and privacy of patients.</li> <li>2. . Establish patient-centred rapport and demonstrate effective communications skills.</li> <li>3. Appreciate the empathy and sensitivity needed when dealing with the patient experience of long-term conditions and terminal illness.</li> </ol>
Syllabus Outline	<p>Patient Centred Care</p> <ul style="list-style-type: none"> <li>• Communication skills, Consent, Confidentiality, Disability including learning disabilities.</li> <li>• Titrating treatment strategies and care pathways for patients with cardiovascular disease</li> </ul> <p>Anatomy, Physiology, pathophysiology and pharmacology related to provocative electrocardiography, and diagnostic cardiac catheterisation</p> <p>Principles and practice of invasive pressure measurement and cardiac interventions in paediatric and adult patients</p> <p>Coronary &amp; vascular anatomy</p> <ul style="list-style-type: none"> <li>• Principles and practice of invasive pressure measurement</li> <li>• Equipment and set up</li> <li>• Procedures and angiography</li> <li>• Operation of equipment and safe use</li> <li>• Catheter use and design</li> <li>• Identification and measurement of intracardiac pressures (normal and Abnormal) and changes associated with a range of pathological states</li> </ul> <p>Haemodynamics and circulatory control</p> <ul style="list-style-type: none"> <li>• Regulation of the cardiac cycle</li> <li>• Cardiac output control, measurements and calculations</li> <li>• Changes to invasive measurement and interventions associated with Heart diseases</li> </ul> <p>Data interpretation</p> <ul style="list-style-type: none"> <li>• Acquired heart disease and its effect of the heart and circulation</li> </ul> <p>Heart failure and its effect on the heart and circulation</p> <ul style="list-style-type: none"> <li>• Cardiac drugs: effects, functions and application</li> </ul> <p>Practice and principles of provocative testing</p> <ul style="list-style-type: none"> <li>• Stress testing</li> <li>• Head Up tilt testing</li> <li>• Valsalva manoeuvres</li> </ul> <p>This module will also build on earlier work to develop the themes of public health and epidemiology of cardiovascular disease, risk factors, risk assessment and primary prevention including behavioural change management.</p>
Contact Hours/Scheduled Hours	<p>The student will have a minimum of 6 hours per week contact time over the course of semester 1. The module will be delivered by specialist practitioners (some sessions will be held within the work-place setting) and will comprise lectures, seminars, tutorials, practicals clinical skills, and observation as appropriate to the module content at the time. The teaching will take place within the UWE, and at placement centres within the region.</p>
Teaching and Learning Methods	<p>Students are expected to spend 72 hours on scheduled learning and 228 hours on independent learning.</p> <p>Independent learning will take the following forms with an approximate indication of time required for each:</p> <ul style="list-style-type: none"> <li>• Essential reading to support acquisition of knowledge relating to lectures and practical exercises – 96 hours</li> <li>• Researching case studies &amp; preparation and submission of assessment, – 24 hours</li> <li>• Observational learning and discussions within the placement setting – 36 hours</li> </ul>

- Revision and preparation for exams – 72 hours

**Scheduled learning** includes lectures, seminars, tutorials, demonstration, practical classes and workshops, work based learning.

**Independent learning** includes hours engaged with essential reading, case study preparation, assignment preparation and completion etc.

**Placement learning:** may include practice placement learning, & clinical workshops

Key Information Sets Information

Key Information Sets (KIS) are produced at programme level for all programmes that this module contributes to, which is a requirement set by HESA/HEFCE. KIS are comparable sets of standardised information about undergraduate courses allowing prospective students to compare and contrast between programmes they are interested in applying for.

Hours to be allocated	Scheduled learning and teaching study hours	Independent study hours	Placement study hours	Allocated Hours	
300	72	192	36	300	✓

The table below indicates as a percentage the total assessment of the module which constitutes a -

**Written Exam:** Unseen written exam

**Coursework:** Written assignment.

Please note that this is the total of various types of assessment and will not necessarily reflect the component and module weightings in the Assessment section of this module description:

Total assessment of the module:		
Exam assessment percentage		50%
Coursework assessment percentage		50%
		100%

Reading Strategy	<p>Students will be expected to purchase any core text recommended, access to the core text will also be provided for reference via the library, but is not expected to negate the need for the student to provide their own copy. Students will be expected to access all other essential reading either via handouts provided or online through the library, Blackboard, or other recommended source (typically free access e-journal). Wherever possible, where free online access is not available digitalised copies of book chapters or articles will be provided.</p> <p>All students are encouraged to read widely using the library catalogue, a variety of bibliographic and full text databases and Internet resources. Many resources can be accessed remotely. Guidance to some key authors and journal titles available through the Library will be given in the Module Guide and updated annually. Assignment reference lists are expected to reflect the range of reading carried out.</p>
Indicative Reading List	<p><i>The following list is offered to provide validation panels/accrediting bodies with an indication of the type and level of information students may be expected to consult. As such, its currency may wane during the life span of the module specification. However, as indicated above, CURRENT advice on readings will be available via other more frequently updated mechanisms.</i></p> <p>Bennett D.H., (2013) Cardiac Arrhythmias: Practical notes on interpretation and treatment. Seventh edition. Wiley-Blackwell</p> <p>Bonow,RO, Mann DL Zipes DP, Libby P (2012) Brunwalds Heart disease.9<sup>th</sup> Edition. Elsevier</p> <p>Butler R., Gunning M., and Nolan J. (2007) Essential Cardiac Catheterization. Hodder Arnold</p> <p>Ellestad M. H. (2003) Stress Testing: Principles and Practice. Fifth edition Oxford University Press, USA</p> <p>Frampton, S. B &amp; Charmel, P. A (2009) Putting patients first: best practices in patient-centered care. 2nd ed. Jossey-Bass. eBook</p> <p>Klabunde R.E. (2012) Cardiovascular Physiology Concepts. Second Edition. Lippincott Williams &amp; Wilkins.</p> <p>Moscucci M (2014) Cardiac catheterisation, angiography &amp; Intervention. Lippencott &amp; Williams Philadelphia</p> <p>Rang HP, Ritter JM, Flower RJ, Henderson G(2016) Pharmacology 8<sup>th</sup> edition Elsevier</p> <p><b>Journals</b>  Acute Cardiac Care  Journal of Cardiac Failure  Journal of Interventional Cardiac Electrophysiology</p>

### Part 3: Assessment

Assessment Strategy	<p>The assessments within this module have been designed to show that the student has developed the required knowledge and clinical skills required to practice as a cardiac physiologist.</p> <p>Component A will comprise two elements. An end of module written exam under controlled conditions. The exam will explore the student's ability to discuss, evaluate and synthesise materials and topics covered during the course of the module. The focus of the exam will be on interpretation and analysis of clinical data and scenarios. Component A will also include a practical exam, allowing the student to demonstrate the competencies and clinical skills required of a cardiac physiologist. In accordance with professional body requirements, students must achieve a mark of 40% or above in the practical exam in order to pass the module.</p> <p>Component B will comprise an integrated clinical workbook, which will include completion of a range of relevant clinical tasks undertaken in practical classes and clinical workshops. The focus of the clinical workbook will be to assess the interpretation of clinical data, which is an essential requirement of a healthcare science practitioner.</p> <p>Opportunities for formative assessment will occur throughout the module to check students' grasp of content. The nature of the formative assessment will be designed to ensure student familiarity with the summative assessment styles.</p> <ul style="list-style-type: none"> <li>The generic assessment criteria used in the department of Applied Sciences, will be used for all assessments.</li> </ul>
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Identify final assessment component and element	<b>Component A, element 1</b>
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% weighting between components A and B (Standard modules only)	<b>A:</b>	<b>B:</b>
	<b>50</b>	<b>50</b>

First Sit	
Component A (controlled conditions) Description of each element	Element weighting (as % of component)
1. Exam (3 hours)	60%
2. Practical Exam  Students must achieve a mark of 40% or above in this element in accordance with professional body requirements	40%
Component B Description of each element	Element weighting (as % of component)
1. Integrated clinical workbook	100%

Resit (further attendance at taught classes is not required)	
Component A (controlled conditions) Description of each element	Element weighting (as % of component)
1. Exam (3 hours)	60%
2. Practical Exam  Students must achieve a mark of 40% or above in this element in accordance with professional body requirements	40%
Component B	Element weighting (as % of component)

Description of each element	
1. Integrated clinical workbook	100%
If a student is permitted a retake of the module under the University Regulations and Procedures, the assessment will be that indicated by the Module Description at the time that retake commences.	