

### MODULE SPECIFICATION

| Part 1: Information       |  |                    |                  |
|---------------------------|--|--------------------|------------------|
| Module Title              | Applied Cardiac Physiology   |                    |                  |
| Module Code               | USSJY4-30-3  | Level              | 3                |
| For implementation from   | September 2017   |                    |                  |
| UWE Credit Rating         | 30   | ECTS Credit Rating | 15               |
| Faculty                   | Health & Applied Sciences  | Field              | Applied Sciences |
| Department                | Applied Sciences   |                    |                  |
| Contributes towards       | BSc (Hons) Healthcare Science (Physiological Sciences)   |                    |                  |
| Module type:              | Standard   |                    |                  |
| Pre-requisites            | USSKAW-30-2 Cardiac Physiology & Pathophysiology A<br>USSKAX-30-2 Cardiac Physiology & Pathophysiology B<br>OR<br>USSKL9-30-2 Pathophysiological Sciences A<br>USSKLA-30-2 Pathophysiological Sciences B |                    |                  |
| Excluded Combinations     | N/A  |                    |                  |
| Co- requisites            | USSJY3-30-3 Advanced Cardiac Physiology and Neurophysiology  |                    |                  |
| Module Entry requirements | Level 5 (or equivalent) physiological sciences qualification   |                    |                  |

| Part 2: Description   |
|---|
| <p>This module explores the clinical environment in the context of Cardiac Physiology. The syllabus covers:</p> <ul style="list-style-type: none"> <li>• Titrating treatment strategies and care pathways for patients with cardiovascular disease</li> <li>• Anatomy, Physiology, pathophysiology and pharmacology related to provocative electrocardiography, and diagnostic cardiac catheterisation</li> <li>• Principles and practice of invasive pressure measurement and cardiac interventions in paediatric and adult patients</li> <li>• Equipment and set up</li> <li>• Procedures and angiography</li> <li>• Catheter use and design, Operation of equipment and safe use</li> <li>• Identification and measurement of intracardiac pressures (normal and Abnormal) and changes associated with a range of pathological states</li> <li>• Haemodynamics, circulatory control, &amp; 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> <li>• Data interpretation</li> <li>• Acquired heart disease and effects on circulation</li> </ul> |

- Heart failure and effects on the heart and circulation
- Practice and principles of provocative testing, Stress testing, Head Up tilt testing, Valsalva manoeuvres

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.

There will be several blocks of contact time at UWE which include laboratory workshops, lectures and tutorials. The contact time for this module will equate to approximately 15 hours per block (a total of 75 hours).

Theoretical material within the module will be presented to the students in the form of lectures throughout the block periods in each of the semesters in the academic year. The learning of lecture content will be reinforced through tutorials and time spent in independent learning by the directed reading of recommended texts and through the use of technology enhanced learning resources that will be provided online.

A number of relevant practical sessions will be incorporated during the campus based blocks in addition to the work based learning that must be achieved under supervision by a workplace supervisor. Practical sessions will both drive hands on learning and the acquisition of technical skills at both an individual and group working level.

The remainder of the independent learning time allocated to the module should be spent preparing for assessments [B1], and undertaking revision for the in-class test [A1].

**Scheduled learning** includes lectures, seminars, tutorials, project supervision, demonstration, practical classes and workshops; fieldwork; external visits; work based learning; supervised time in studio/workshop.

**Independent learning** includes hours engaged with essential reading, case study preparation, assignment preparation and completion etc. These sessions constitute an average time per level as indicated in the table below. Scheduled sessions may vary slightly depending on the module choices you make.

### Part 3: Assessment

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. There will two components to the assessment of this module.

**Component A** will comprise of an in-class examination and a practical examination under controlled conditions. These examinations will assess a broad knowledge base, and focus on data analysis & interpretation of clinical scenarios, case based material, and demonstration of appropriate practical & clinical skills in order to assess the understanding and application of specialist clinical knowledge

**Component B** will comprise of an integrated case-study.

Formative feedback is available to students throughout the module through group discussions, and in workshops. Students are provided with formative feed-forward for their exam through a revision and exam preparation session prior to the exam and through the extensive support materials supplied through Blackboard.

All work is marked in line with the Faculty's Generic Assessment Criteria and conforms to university policies for the setting, collection, marking and return of student work. Where an individual piece of work has specific assessment criteria, this is supplied to the students when the work is set.

This assessment strategy has been designed following best practice on effective assessment from JISC (<http://www.jisc.ac.uk/whatwedo/programmes/elearning/assessment/digiassess.aspx>) and The Open University's Centre for Excellence in Teaching and Learning (<http://www.open.ac.uk/opencetl/centre-open-learning-mathematics-science-computing-and-technology/activities-projects/e-assessment-learning-the-interactive-comp>). Technical design and deployment of the activities will also follow best practice developed at UWE by the Education Innovation Centre in collaboration with academic colleagues across the university. Staff guidance and support are already in place (<http://info.uwe.ac.uk/online/Blackboard/staff/guides/summative-assessments.asp>).

|   |           |           |
|---|-----------|-----------|
| Identify final timetabled piece of assessment (component and element) | A1        |           |
| % weighting between components A and B (Standard modules only)        | <b>A:</b> | <b>B:</b> |
|   | <b>50</b> | <b>50</b> |

| <b>First Sit</b>   |  |
|--|--|
| <b>Component A (controlled conditions)</b><br><b>Description of each element</b>   | <b>Element weighting</b><br><b>(as % of component)</b> |
| 1. In class assessment (3 hours)   | 60%  |
| 2. Practical Exam<br>Students must achieve a mark of 40% or above in this element in accordance with professional body requirements. | 40%  |
| <b>Component B</b><br><b>Description of each element</b>   | <b>Element weighting</b><br><b>(as % of component)</b> |
| 1. Integrated case study portfolio   | 100%   |
| <b>Resit (further attendance at taught classes is not required)</b>  |  |
| <b>Component A (controlled conditions)</b><br><b>Description of each element</b>   | <b>Element weighting</b><br><b>(as % of component)</b> |
| 1. In class assessment (3 hours)   | 60%  |
| 2. Practical Exam<br>Students must achieve a mark of 40% or above in this element in accordance with professional body requirements. | 40%  |
| <b>Component B</b><br><b>Description of each element</b>   | <b>Element weighting</b><br><b>(as % of component)</b> |
| 1. Integrated case study portfolio   | 100%   |

**Part 4: Teaching and Learning Methods**

**Learning Outcomes** On successful completion of this module students will be able to:

1. Discuss the key areas of physiology, pathophysiology and pharmacology related provocative testing, and diagnostic cardiac catheterisation (A1&2, B)
2. Discuss the underpinning principles and practice of invasive pressure measurement and cardiac interventions. (A1&2, B)
3. Discuss the differences between children and adults with respect to cardiac physiology investigations and demonstrate the ability to apply this to clinical situations. (A1&2, B)
4. 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&2, B)
5. Actively seek accurate and validated information from all available sources with respect to cardiac investigations. (A1&2, B)
6. Select and apply appropriate analysis or assessment techniques and tools. (A1&2, B)

All Learning Outcomes assessed via component A, the focus of the case-study (component B) will alter year on year but will reflect one or more of the Learning Outcomes listed above.

In addition the educational experience may explore, develop, and practise but not formally discretely assess the following Professional aspects, as set out within the Modernising Scientific Careers Curriculum:


1. Respect and uphold the rights, dignity and privacy of patients.
2. Establish patient-centred rapport and demonstrate effective communications skills.
3. Appreciate the empathy and sensitivity needed when dealing with the patient experience of long-term conditions and terminal illness.

**Key Information Sets Information (KIS)**

**Key Information Set - Module data**

|  |  |  |  |  |    |
|--|--|--|--|--|----|
| <i>Number of credits for this module</i> |  |  |  |  | 30 |
|--|--|--|--|--|----|

**Contact Hours**

| Hours to be allocated | Scheduled learning and teaching study hours | Independent study hours | Placement study hours | Allocated Hours |   |
|-----------------------|---|-------------------------|-----------------------|-----------------|---|
| 300                   | 75  | 225                     | 0                     | 300             |  |

**Total Assessment**

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

**In class assessment:** In class assessment  
**Coursework:** Written assignment or essay, report, dissertation, portfolio, project or in class test  
**Practical Exam:** Oral Assessment and/or presentation, practical skills assessment, practical exam (i.e. an exam determining mastery of a technique)

|                                      |  |      |
|--------------------------------------|--|------|
| Total assessment of the module:      |  |      |
| In class assessment percentage       |  | 30%  |
| Coursework assessment percentage     |  | 50%  |
| Practical exam assessment percentage |  | 20%  |
|                                      |  | 100% |

|              |   |
|--------------|---|
| Reading List | <p>Modernising Scientific Careers Programme Training Manual for appropriate Division and Specialist Route. Available from <a href="http://www.nshcs.hee.nhs.uk/curricula">http://www.nshcs.hee.nhs.uk/curricula</a></p> <p>The module reading list can be accessed through the following link:</p> <p><a href="https://uwe.rl.talis.com/lists/36B1F341-C27A-15F4-9962-4F1CF7F1F8C6.html">https://uwe.rl.talis.com/lists/36B1F341-C27A-15F4-9962-4F1CF7F1F8C6.html</a></p> |
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|----------------------------|-----------|---------|---|---------------------------|
| First CAP Approval Date    | 1/5/2012  |         |   |                           |
| Revision CAP Approval Date | 31/5/2017 | Version | 2 | <a href="#">RIA 12283</a> |