



Module Specification

Applied Cardiac Physiology

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Part 1: Information

Module title: Applied Cardiac Physiology

Module code: USSJY4-30-3

Level: Level 6

For implementation from: 2023-24

UWE credit rating: 30

ECTS credit rating: 15

Faculty: Faculty of Health & Applied Sciences

Department: HAS Dept of Applied Sciences

Partner institutions: None

Field: Applied Sciences

Module type: Module

Pre-requisites: Pathophysiological Sciences B 2023-24

Excluded combinations: None

Co-requisites: Advanced Cardiac Physiology and Neurophysiology 2023-24

Continuing professional development: No

Professional, statutory or regulatory body requirements: None

Part 2: Description

Overview: Pre-requisites: students must have taken USSKAW-30-2 Cardiac Physiology and Pathophysiology A and USSKAX-30-2 Cardiac Physiology and Pathophysiology B or USSKL9-30-2 Pathophysiological Sciences A and USSKLA-30-2 Pathophysiological Sciences B

This module explores the clinical environment in the context of Cardiac Physiology. It 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.

Features: Module Entry requirements: Level 5 (or equivalent) physiological sciences qualification.

Educational aims: In addition to the Learning Outcomes 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.

Outline syllabus: The syllabus covers:

Titrating treatment strategies and care pathways for patients with cardiovascular disease

Anatomy, physiology, pathophysiology and pharmacology related to provocative electrocardiography, and diagnostic cardiac catheterisation

Principles and practice of invasive pressure measurement and cardiac interventions in paediatric and adult patients

Equipment and set up

Procedures and angiography

Catheter use and design, operation of equipment and safe use

Identification and measurement of intracardiac pressures (normal and abnormal) and

changes associated with a range of pathological states

Haemodynamics, circulatory control and regulation of the cardiac cycle

Cardiac output control, measurements and calculations

Changes to invasive measurement and interventions associated with heart diseases

Data interpretation

Acquired heart disease and effects on circulation

Heart failure and effects on the heart and circulation

Practice and principles of provocative testing, stress testing, head-up tilt testing, Valsalva manoeuvres

Part 3: Teaching and learning methods

Teaching and learning methods: Material within the module will be presented to the students in the form of lectures, clinical workshops and tutorials. These will be held in block weeks at certain points within semesters 1 and 2. The learning of lecture content will be reinforced by regular tutorials throughout the academic year, 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 clinical sessions will be incorporated during the block teaching, in addition to the work based learning that must be achieved under supervision by a workplace supervisor. Clinical sessions will drive 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, and undertaking revision for the exams.

Scheduled learning includes lectures, seminars, tutorials, clinical workshops, external visits, work based learning.

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.

Module Learning outcomes: On successful completion of this module students will achieve the following learning outcomes.

MO1 Discuss the key areas of physiology, pathophysiology and pharmacology related provocative testing, and diagnostic cardiac catheterisation

MO2 Discuss the underpinning principles and practice of invasive pressure measurement and cardiac interventions.

MO3 Discuss the differences between children and adults with respect to cardiac physiology investigations and demonstrate the ability to apply this to clinical situations.

MO4 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.

MO5 Actively seek accurate and validated information from all available sources with respect to cardiac investigations.

MO6 Select and apply appropriate analysis or assessment techniques and tools.

Hours to be allocated: 300

Contact hours:

Independent study/self-guided study = 225 hours

Face-to-face learning = 75 hours

Total = 300

Reading list: The reading list for this module can be accessed at [readinglists.uwe.ac.uk](https://uwe.rl.talis.com/modules/ussjy4-30-3.html) via the following link <https://uwe.rl.talis.com/modules/ussjy4-30-3.html>

Part 4: Assessment

Assessment strategy: The assessments within this module have been designed to show that the apprentice has developed the required knowledge and clinical skills required to practice as a cardiac physiologist. There will be three assessments of this module.

Assessment 1 is a clinical examination; assessment 2 is a set exercise. These assessments will assess a broad knowledge base, and focus on data analysis and interpretation of clinical scenarios, case based material, and demonstration of appropriate clinical skills in order to assess the understanding and application of specialist clinical knowledge.

Assessment 3 is an integrated case-study.

Formative feedback is available to apprentices throughout the module through group discussions, and in workshops. Apprentices 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.

Assessment tasks:

Practical Skills Assessment (First Sit)

Description: Clinical exam

Students must achieve a mark of 40% or above in this element in accordance with professional body requirements.

Weighting: 20 %

Final assessment: No

Group work: No

Learning outcomes tested: MO1, MO2, MO3, MO4, MO5, MO6

Set Exercise (First Sit)

Description: Set Exercise

Weighting: 30 %

Final assessment: Yes

Group work: No

Learning outcomes tested: MO1, MO2, MO3, MO4, MO5, MO6

Portfolio (First Sit)

Description: Integrated case study portfolio

Weighting: 50 %

Final assessment: No

Group work: No

Learning outcomes tested: MO1, MO2, MO3, MO4, MO5, MO6

Practical Skills Assessment (Resit)

Description: Clinical exam

Students must achieve a mark of 40% or above in this element in accordance with professional body requirements.

Weighting: 20 %

Final assessment: No

Group work: No

Learning outcomes tested: MO1, MO2, MO3, MO4, MO5, MO6

Set Exercise (Resit)

Description: Set Exercise

Weighting: 30 %

Final assessment: Yes

Group work: No

Learning outcomes tested: MO1, MO2, MO3, MO4, MO5, MO6

Portfolio (Resit)

Description: Integrated case study portfolio

Weighting: 50 %

Final assessment: No

Group work: No

Learning outcomes tested: MO1, MO2, MO3, MO4, MO5, MO6

Part 5: Contributes towards

This module contributes towards the following programmes of study:

Healthcare Science (Cardiac Physiology) {Apprenticeship-UWE}

[Sep][FT][Frenchay][3yrs] BSc (Hons) 2021-22