



Module Specification

Cardiac Physiology

Version: 2025-26, v1.0, 26 Feb 2025

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Part 1: Information

Module title: Cardiac Physiology

Module code: USSYQH-60-2

Level: Level 5

For implementation from: 2025-26

UWE credit rating: 60

ECTS credit rating: 30

College: College of Health, Science & Society

School: CHSS School of Applied Sciences

Partner institutions: None

Field: Applied Sciences

Module type: Module

Pre-requisites: Introduction to Physiological Diagnostics 2025-26

Excluded combinations: None

Co-requisites: None

Continuing professional development: Yes

Professional, statutory or regulatory body requirements: None

Part 2: Description

Overview: This module introduces apprentices in the cardiac sciences, to a range of pathological conditions, and appropriate interventions used in the diagnosis and management of cardiovascular disease. Apprentices will gain theoretical and practical knowledge of a range of diagnostic and therapeutic tools used within the cardiac sciences.

Pre-requisites: Students must have passed USSJRQ-45-1 Introduction to Physiological Diagnostics before starting this module.

Features: Not applicable

Educational aims: The module aims:

To equip students with the knowledge and skills to use, interpret, and evaluate key diagnostic tools within the cardiovascular sciences.

To develop an understanding of the treatment strategies for patients with a range of cardiovascular and related pathologies.

To combine theoretical knowledge with practical application through hands-on experience with different diagnostic and simulation tools and clinical scenarios.

To encourage the use of evidence-based approaches to diagnose and manage cardiovascular conditions, ensuring students can critically assess current research and guidelines.

To promote a patient-centred approach that considers the physiological, psychological, and lifestyle aspects of managing cardiovascular and related conditions.

Outline syllabus: The indicative syllabus for the module is as follows:

The normal structure and function of the Cardiac and Vascular systems, and the relevant normal physiological variability in humans.

The concept of “normal” and the calculation and use of normal ranges in the interpretation of relevant cardiac investigations and the ability to apply these to clinical situations.

The relevant abbreviations and units used in Cardiac Physiology and the ability to apply these to clinical situations.

The cellular, tissue and systems responses to diseases of the Cardiac and Vascular systems, and the symptoms associated with disease.

Common diseases of the Cardiovascular systems including the epidemiology, public health and psychosocial aspects.

The major abnormalities of physiological control mechanisms in diseases of the Cardiovascular system.

Utilisation of normal ranges to define normal and abnormal test results across a range of relevant cardiovascular investigations.

The characteristics of recording and analytical equipment used in cardiovascular investigations, how it is calibrated and maintained, and the quality assurance processes for relevant measurements undertaken in Cardiac Physiology.

The clinical framework for Clinical Electrocardiography and arrhythmia management, ambulatory BP measurement, and different modes of ambulatory cardiac monitoring and patient management.

The basis for cardiac stress testing including an understanding of exercise testing, stress echo and myocardial perfusion scans.

The clinical framework for practice and principles of provocative testing, including head-up tilt testing, and Valsalva manoeuvres.

An introduction to basic electrophysiological concepts and principles of rhythm management devices.

Different therapeutic management strategies utilised in cardiovascular physiology, with reference to current guidelines and technological advances.

Patient centred care in cardiac care pathways.

Part 3: Teaching and learning methods

Teaching and learning methods: Delivery of the underpinning knowledge and practical skills will be via a combination of:

- 1) Blended learning, with on-campus teaching and practical skills/ simulation sessions, coupled with online lectures and tutorials provided throughout the academic year.
- 2) Practice based learning, where apprentices will learn and develop their skills through clinical practice, by interaction with patients, and teaching from practitioners within their department.

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

MO1 Identify and describe a range of cardiovascular conditions, including their epidemiology, clinical presentation, diagnostic assessment and clinical management.

MO2 Explain the underlying pathophysiological mechanisms of cardiovascular disorders and relate these to clinical symptoms and outcomes.

MO3 Review and interpret a range of cardiovascular investigations, and be able to discern normal and abnormal results in relation to a range of cardiovascular and related pathologies.

MO4 Demonstrate an understanding of the different therapeutic management strategies utilised in cardiovascular physiology, with reference to current guidelines and technological advances.

MO5 Integrate principles of patient-centred care to address the diverse needs of individuals with cardiovascular and related conditions, considering age, cultural background, and individual preferences.

MO6 Demonstrate the ability to evaluate clinical investigations and resources to support clinical decision making, in the physiological sciences.

Hours to be allocated: 600

Contact hours:

Independent study/self-guided study = 200 hours

Face-to-face learning = 80 hours

Reading list: The reading list for this module can be accessed at [readinglists.uwe.ac.uk](https://uwe.rl.talis.com/courses/ussyqh-60-2.html) via the following link <https://uwe.rl.talis.com/courses/ussyqh-60-2.html>

Part 4: Assessment**Assessment strategy:** Assessment 1: Portfolio

A portfolio of clinical evidence collected from the workplace throughout the academic year, as required by the National School of Healthcare Science, to demonstrate attainment of clinical competence. This will include a range of assessment formats, including, the assessment of clinical competencies, Direct Observation of Practical Skills, Observed Clinical Events, and Case Based Discussions. These elements of the portfolio will be signed off by the work based supervisor, and will be assessed as a Pass or Fail only. Three 1500 word assignments will be assessed and graded by UWE academic staff, to generate an overall grade for the portfolio.

This assessment is included as a professional body requirement, and will provide evidence of all aspects of the course. The different assessment formats (DOPS, and OCEs,) will allow the apprentices to demonstrate their practical skills in the clinical environment. CBDs provide structured teaching and feedback in a particular area of clinical or technical practice by evaluating interpretation of evidence and clinical decision making. CBDs also provide the apprentice to demonstrate their presentation skills and discuss the context, professional ethical and governance framework of their practice.

Apprentices will be supported in achieving portfolio work, by regular meetings with their practice educator, and regular support tutorials and guidance from the academic team. Additionally, apprentices will meet regularly with their tripartite co-ordinator to monitor portfolio progress.

Assessment 2: Examination (2 hours)

This exam will be designed to enable the apprentice to demonstrate their knowledge of the pathophysiology of disease, the diagnosis and interpretation of results, and the management of a range of cardiovascular and associated conditions.

This assessment is included to enable the apprentices to demonstrate their knowledge of how the pathophysiology of disease relates to results obtained in cardiac investigations, and that they are able to draw appropriate clinical conclusions from these results, in a real world, time critical setting.

Assessment tasks:**Examination (First Sit)**

Description: A controlled conditions on campus exam. (2 hours)

Weighting: 40 %

Final assessment: No

Group work: No

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

Portfolio (First Sit)

Description: A portfolio of clinical evidence collected from the workplace.

1500 word limit on each graded piece of work. The remaining work is submitted as appropriate according to the workplace.

Weighting: 60 %

Final assessment: Yes

Group work: No

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

Examination (Resit)

Description: A controlled conditions on campus exam (2 hours)

Weighting: 40 %

Final assessment: No

Group work: No

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

Portfolio (Resit)

Description: A portfolio of clinical evidence collected from the workplace.

1500 word limit on each graded piece of work. The remaining work is submitted as appropriate according to the workplace.

Weighting: 60 %

Final assessment: Yes

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} [Frenchay] BSc (Hons) 2024-25