



Module Specification

Introduction to Physiological Diagnostics

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Part 1: Information

Module title: Introduction to Physiological Diagnostics

Module code: USSJRQ-45-1

Level: Level 4

For implementation from: 2024-25

UWE credit rating: 45

ECTS credit rating: 22.5

College: College of Health, Science & Society

School: CHSS School of Applied Sciences

Partner institutions: None

Field: Applied Sciences

Module type: Module

Pre-requisites: None

Excluded combinations: None

Co-requisites: None

Continuing professional development: No

Professional, statutory or regulatory body requirements: None

Part 2: Description

Overview: This module introduces apprentices in the physiological sciences, to the knowledge skills and behaviours that are required within their discipline, including performing appropriate diagnostic tests, and interpreting them.

Features: A blended learning environment, where practical teaching will be delivered on campus during block weeks, and underpinning scientific and clinical knowledge will be developed during online teaching sessions.

Educational aims: This module aims to provide apprentices in the physiological sciences to develop the knowledge, skills and behaviours required to practice within their specialism.

Outline syllabus: This module provides the specialist subject content that is required by both employers and the National School of healthcare Science (NSHCS), to enable apprentices to develop their academic and clinical competence in their specialism.

Apprentices will study the syllabus that aligns to their specialist pathway, enabling them to develop the appropriate knowledge, skills and behaviours required for practice.

All apprentices will be expected to:

-develop an understanding of other disciplines related to their specialism (other physiological science disciplines, radiology, pathology), in a variety of settings (e.g. wards, primary care, emergency care, critical care, community settings).

Neurophysiology apprentices only:

Physiology of the central and peripheral nervous system.

The clinical and scientific the basis of the electroencephalogram (EEG) , and maturational changes of the EEG (paediatric to adult).

Patient preparation for diagnostic testing.

Head measuring and electrode application for EEG to The Association of Neurophysiological Scientists (ANS) standards.

Montage design and EEG convention

Room and equipment preparation for EEG recording, including calibration of equipment, and function testing procedures.

Performing an EEG on an awake and sleeping adult.

Recognition of different artefacts and remedial actions. Polygraphy.

Normal EEG phenomena

Normal EEG activation procedures in wakeful and sleeping adults.

Patient centred care in neurophysiology.

Patient communication and history taking.

An introduction to disease and therapeutics

Cardiac physiology apprentices only:

The clinical and scientific basis of cardiovascular measurements, and underpinning physiology of the cardiovascular system.

Preparation of the patient for physiological investigations in cardiac science.

Patient centred care in cardiac physiology.

Patient communication and history taking.

An understanding of the characteristics of recording equipment and their evaluation.

Performing a resting 12 lead (Electrocardiogram) ECG and manual, automatic and ambulatory blood pressure measurements to the Society for Cardiological Science & Technology (SCST) standards.

An understanding of, and the interpretation of the normal ECG including all basic waveform measurements, and normal variants.

An introduction to cardiovascular disease and therapeutics

Interpretation of the full range of ECG abnormalities, including:

Sinus rhythms, supraventricular arrhythmias, bradyarrhythmias and conduction abnormalities, rhythms from the ventricles, identification of artificial cardiac pacemaking, endocrine disorders, ECG changes associated with abnormal cardiac conditions, ECG changes seen after drug administration, channelopathies, cerebrovascular conditions, and the effect of artefact and error.

Respiratory and Sleep Physiology apprentices only:

The clinical and scientific basis of respiratory and sleep measurements, and the underpinning physiology of the system.

Preparation of the patient for physiological investigations in respiratory and sleep science.

An understanding of the characteristics of recording equipment and their evaluation.

Calibration and verification procedures.

Calculation of reference ranges, LLN/ULN and z-scores, and their application in the interpretation of lung function testing.

Recognise obstructive and restrictive patterns of disease, and relate it to the patients underlying condition.

To perform spirometry testing with reversibility to the Association of Respiratory Technology and Physiology (ARTP) standards.

To perform full lung function testing, including gas transfer and lung volume measurements to ARTP standards.

To perform spot check oximetry

An introduction to respiratory and sleep breathing disorders.

To perform overnight oximetry.

To gain an understanding of the treatment of sleep breathing disorders.

Patient centred care in respiratory and sleep physiology.

Patient communication and history taking.

Understands the principles of interpretation of lung function testing and overnight sleep breathing disorder assessment in a range of disorders.

Part 3: Teaching and learning methods

Teaching and learning methods: This module will be delivered via a blended approach of on-campus practical and skills development activities held during block release weeks, and online lectures, seminars and tutorials. held throughout the academic year.

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

MO1 Demonstrate a detailed subject knowledge, and to be able to apply that knowledge, within their specialism.

MO2 Demonstrate safe and effective practice of physiological measurements within their primary specialism, and associated disciplines.

MO3 Demonstrate and apply their knowledge and understanding of the principles underpinning typical investigations and procedures carried out in the assessment, diagnosis and treatment of clinical disorders.

MO4 Demonstrate the ability to interpret clinical data, and to draw appropriate conclusions from the data.

MO5 Demonstrate an understanding of patient treatment pathways, from initial patient presentation, diagnostic testing, therapeutic strategy, to overall patient outcomes.

Hours to be allocated: 450

Contact hours:

Independent study/self-guided study = 102 hours

Face-to-face learning = 108 hours

Total = 210

Reading list: The reading list for this module can be accessed at [readinglists.uwe.ac.uk](https://uwe.rl.talis.com/modules/ussjrq-45-1.html) via the following link <https://uwe.rl.talis.com/modules/ussjrq-45-1.html>

Part 4: Assessment

Assessment strategy: The assessments within this module will assess the ability of the apprentice to perform and evaluate diagnostic clinical tests within their specialism, enabling them to demonstrate safe and effective practice.

Apprentices will be supported in their training, during block week practical and interpretation sessions, online tutorials, and work-based training throughout the academic year. Practical and portfolio progress will be monitored and regular feedback will be given by academic tutors and tri-partite co-ordinators.

Assessment 1: Practical Skills Assessment

A practical skills assessment that will take place under controlled conditions (3 hours). The assessment will incorporate a range of practical/clinical scenario based stations, that will allow the apprentice to demonstrate that they have developed the appropriate knowledge, skills and behaviours required of their specialism.

Assessment 2: Work Based Learning Portfolio

In line with the National School of Healthcare Science (NSHCS) requirements, this will be a portfolio of content showing knowledge and practical skills directly applicable to their Work Based Learning, This will be assessment as learning for the content in the module. The evidence presented will be led by the needs of each individual workplace but will comprise the following:

- Professional competencies (As per the NSHCS requirements).
- Direct Observation of Practical Skills (DOPS)
- A Case Based Discussion

The module content will complement the professional competencies. Formative feed-forward will be given at the start of the module and through individual feedback. Formative feedback will be given periodically by the apprentices Work Place Assessors throughout the module.

Assessment tasks:**Practical Skills Assessment (First Sit)**

Description: A practical skills assessment.

Weighting: 100 %

Final assessment: No

Group work: No

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

Portfolio (First Sit)

Description: A portfolio of activities, required by the National School of Healthcare Science, to demonstrate the attainment of clinical competence.

Weighting:

Final assessment: Yes

Group work: No

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

Practical Skills Assessment (Resit)

Description: A practical skills assessment.

Weighting: 100 %

Final assessment: No

Group work: No

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

Portfolio (Resit)

Description: A portfolio of activities, required by the National School of Healthcare Science, to demonstrate the attainment of clinical competence.

Weighting:

Final assessment: Yes

Group work: No

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

Part 5: Contributes towards

This module contributes towards the following programmes of study:

Healthcare Science (Cardiac Physiology) {Apprenticeship-UWE} [Frenchay] BSc (Hons) 2024-25

Healthcare Science (Neurophysiology) {Apprenticeship-UWE} [Frenchay] BSc (Hons) 2024-25

Healthcare Science (Respiratory & Sleep Physiology) {Apprenticeship-UWE} [Frenchay] BSc (Hons) 2024-25