



## **Module Specification**

### **Introduction to Physiological Sciences and Patient Care**

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## Part 1: Information

**Module title:** Introduction to Physiological Sciences and Patient Care

**Module code:** USSKA9-30-1

**Level:** Level 4

**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:** None

**Excluded combinations:** None

**Co-requisites:** None

**Continuing professional development:** No

**Professional, statutory or regulatory body requirements:** None

## Part 2: Description

**Overview:** Not applicable

**Features:** Not applicable

**Educational aims:** This module will provide a broad introduction to the physiological sciences. It will combine key learning of underpinning scientific theory in the physiological sciences, with a focus on the patient journey and patient centred care. In this module we will begin to explore normal physiology, and how this can change

in disease states. We will consider a range of diagnostic testing that is appropriate for patients with cardiovascular, respiratory and neurophysiological disorders.

**Outline syllabus:** An introduction to the workings of the cardiovascular system: the development, and anatomy and physiology of the heart and vasculature, the electrical and mechanical properties of the heart and vasculature, and their regulation. The characteristics of blood flow. An introduction to the investigations and procedures carried out in the diagnosis and treatment of cardiovascular disease. An understanding of the characteristics of recording equipment and their evaluation. An introduction to cardiovascular disease and therapeutics

An introduction to the workings of the respiratory system: The development and anatomy and physiology of the respiratory system, and its regulatory controls. The mechanics of lung ventilation; neural and chemical control; gas exchange and transport including acid-base considerations, and changes in breathing associated with disease states. An introduction to the investigations and procedures carried out in the diagnosis and treatment of respiratory disease. An understanding of the characteristics of recording equipment and their evaluation. An introduction to respiratory disease and therapeutics. An introduction to the physiological mechanisms involved in sleep and its regulation and assessment.

An introduction to the workings of the brain: The development and anatomy and physiology of the central nervous system. The structure of neurones, and function of neurotransmitters. An introduction to disorders of the nervous system, and their diagnostic assessment. An understanding of the characteristics of recording equipment and their evaluation. An introduction to the anatomy and physiology of the visual and auditory systems. An understanding of the characteristics of recording equipment used in the evaluation of visual and auditory disorders.

An introduction to the different Healthcare Science pathways and disciplines, and how they contribute to patient care. An understanding of the basis of disease, and its progression. An understanding of the basis of disease response mechanisms such as inflammation, necrosis and cell death. An introduction to microbiology, and an awareness of how microbiological organisms can cause disease, and infection

control processes to prevent spread of disease. An introduction to immunology, and knowledge of the cells and tissues within the immune system

An introduction to patient care: an understanding of patient presentation, physiological examinations that may be required and an understanding of specific patient needs and care. An awareness of patient pathways for patients with cardiovascular, respiratory and neurophysiological disorders. Knowledge of good scientific practice in relation to the physiological sciences and patient centred care. Awareness of patient needs and rights as an individual.

### **Part 3: Teaching and learning methods**

**Teaching and learning methods:** The module will be taught through a blended learning approach. It will incorporate clinical classes and workshops taught in block week sessions at specific points throughout the academic year, combined with online lectures and tutorials throughout semester 1 and 2.

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

**MO1** Demonstrate a broad basic and clinical sciences knowledge, and apply that knowledge with respect to Cardiovascular physiology, Respiratory and Sleep physiology, and Neurophysiology.

**MO2** Discuss the application of safe and effective practice in physiological measurement, and an awareness of the processes involved in clinical physiology practice contributing to the identification of health care needs and the delivery of care.

**MO3** Discuss the basic principles underpinning typical investigations and procedures carried out in the diagnosis and treatment of cardiovascular, respiratory and diseases of the central nervous system, using correct terminology.

**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.

**MO6** Discuss and present complex scientific information in ways that can be understood by peers, colleagues, patients and by practitioners in other areas.

**Hours to be allocated:** 300

**Contact hours:**

Independent study/self-guided study = 228 hours

Face-to-face learning = 72 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/usska9-30-1.html) via the following link <https://uwe.rl.talis.com/modules/usska9-30-1.html>

## Part 4: Assessment

**Assessment strategy:** The assessment strategy has been designed to support the development of the underpinning physiological and patient centred care theory and practice, and development of the clinical skills that are required of a healthcare science practitioner.

### Assessment 1: Case Study

Assessment 1 is a written clinical case study (1000 words). The case study will draw on knowledge from taught material, combined with knowledge and experience drawn from the clinical workplace. This case study assignment will enable demonstration of the breadth of underpinning science knowledge and include knowledge of appropriate diagnostic testing, and interpretation of clinical data. The focus of the case study will be to assess the interpretation of clinical data in the context of relevant patient history and presentation, which is an essential requirement of a healthcare science practitioner. The case study will be submitted in a written format

and presented in poster form during the subsequent block week. This will enable the apprentice to demonstrate their ability to discuss and present complex scientific information in ways that can be understood by patients and by practitioners in other areas.

#### Assessment 2: Set Exercise

Assessment 2 is a set exercise. This assessment will provide apprentices with an opportunity to demonstrate their knowledge on a broad range of topics. This assessment will test the full range of learning outcomes, particularly, the underpinning scientific theory, physiological diagnostics, and basis of patient centred care. It will provide a valuable learning experience through recalling, applying and demonstrating the knowledge required of a healthcare science practitioner.

#### **Assessment tasks:**

##### **Case Study (First Sit)**

Description: Written case study (1000 words) with poster

Weighting: 50 %

Final assessment: No

Group work: No

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

##### **Set Exercise (First Sit)**

Description: Set Exercise

Weighting: 50 %

Final assessment: Yes

Group work: No

Learning outcomes tested: MO1, MO2, MO3, MO4

##### **Case Study (Resit)**

Description: Written case study (1000 words) with poster

Weighting: 50 %

Final assessment: No

Group work: No

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

**Set Exercise (Resit)**

Description: Set Exercise

Weighting: 50 %

Final assessment: Yes

Group work: No

Learning outcomes tested: MO1, MO2, MO3, MO4

**Part 5: Contributes towards**

This module contributes towards the following programmes of study:

Healthcare Science (Respiratory & Sleep Physiology) {Apprenticeship-UWE}  
[Frenchay] BSc (Hons) 2023-24

Duplicate of Healthcare Science (Cardiac Physiology) {Apprenticeship-UWE}  
[Frenchay] BSc (Hons) 2023-24

Healthcare Science (Neurophysiology) {Apprenticeship-UWE} [Frenchay] BSc  
(Hons) 2023-24

Healthcare Science (Cardiac Physiology) {Apprenticeship-UWE} [Frenchay] BSc  
(Hons) 2023-24

Duplicate of Healthcare Science (Cardiac Physiology) {Apprenticeship-UWE}  
[Frenchay] BSc (Hons) 2023-24

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

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

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