



MODULE SPECIFICATION

Part 1: Information			
Module Title	Applied Neurophysiology, Respiratory and Sleep Physiology		
Module Code	USSJYC-30-3	Level	Level 6
For implementation from	2020-21		
UWE Credit Rating	30	ECTS Credit Rating	15
Faculty	Faculty of Health & Applied Sciences	Field	Applied Sciences
Department	HAS Dept of Applied Sciences		
Module type:	Standard		
Pre-requisites	Pathophysiological Sciences A 2020-21, Pathophysiological Sciences B 2020-21, Respiratory and Sleep Physiology and Pathophysiology A 2020-21, Respiratory and Sleep Physiology and Pathophysiology B 2020-21		
Excluded Combinations	None		
Co- requisites	Advanced Cardiac Physiology and Neurophysiology 2020-21		
Module Entry requirements	None		

Part 2: Description
<p>Overview: Pre-requisites: students must take USSKAY-30-2 Respiratory and Sleep Physiology and Pathophysiology A and USSKBA-30-2 Respiratory and Sleep Physiology and Pathophysiology B or USSKL9-30-2 Pathophysiological Sciences A and USSKLA-30-2 Pathophysiological Sciences B.</p> <p>This module explores the clinical environment and contains two distinct units, namely:-</p> <p>Unit 1: Applied Respiratory and Sleep Physiology Unit 2: Applied Neurophysiology</p> <p>Students complete one of these units as prescribed by their pathway. Unit 1 aligns to the Healthcare Science (Physiological Sciences) Respiratory and Sleep Physiology pathway. Unit 2 aligns to the Healthcare Science (Physiological Sciences) Neurophysiology pathway.</p> <p>Features: Module Entry requirements: Students must have a Level 5 (or equivalent) physiological sciences qualification.</p> <p>Educational Aims: On successful completion of this module students will be able to fulfil the learning outcomes from 1 of the following 2 Physiological Sciences themed units of study:-</p>

STUDENT AND ACADEMIC SERVICES

Unit 1: Applied Respiratory and Sleep Physiology

Unit 2: Applied Neurophysiology

Unit 1 aligns to the Healthcare Science (Physiological Sciences) Respiratory and Sleep Physiology pathway. Unit 2 aligns to the Healthcare Science (Physiological Sciences) Neurophysiology pathway.

Outline Syllabus: The syllabus covers:

1. Applied Respiratory and Sleep Physiology (Respiratory and Sleep Physiology pathway)

Patient Centred Care:-

Communication skills

Care pathways for patients with respiratory disease

Problems associated with care

Sleep Studies:-

Sleep physiology including neurological aspects of sleep

Sleep pathophysiology – International Classification of Sleep Disorders

Physiological changes between wake and sleep

Sleep-breathing disorders

Overnight oximetry and transcutaneous PCO₂ measurements

Limited (semi) and full polysomnography

Channels

Equipment characteristics

Use of electroencephalography (EEG), electrooculography (EOG), electromyography (EMG) and electrocardiography (ECG)

Actigraphy

American Academy of Sleep Medicine (AASM) guidelines and normal values

Adults vs paediatrics

Subjective Assessment of Sleepiness and Fatigue:-

Epworth Sleepiness Score

Fatigue Score

Stop-Bang Questionnaire

Driver and Vehicle Licensing Agency (DVLA) regulations

Treatment of Sleep-Breathing Disorders:-

Continuous Positive Airway Pressure

Machines - function/types/modalities

Cleaning and filter changing

Mask/interface types

Contraindications

Side effects/troubleshooting

Patient education

Monitoring

Indications for other treatments

Mandibular Advancement Device

Non-Invasive Ventilation

Additionally, it is expected that students will integrate knowledge from both this unit and the co-requisite USSJYB30-3 Advanced Respiratory and Sleep Physiology module in order to fully understand the scientific basis and diagnosis of respiratory and sleep conditions.

2. Applied Neurophysiology (Neurophysiology pathway)

The adult EEG and recording of other physiological variables and common adult EEG abnormalities:-

Waveform measurement and annotation

Effect of stimuli or activation techniques on the EEG

Common adult EEG abnormalities

Generalised

STUDENT AND ACADEMIC SERVICES

Focal
Repetitive/intermittent
Localisation of abnormalities
Polygraphy – respiration, movement, ECG, eye movement

Factual report and the interpretation of the EEG

Control of consciousness, reticular activating system, sleep/wake circulation, influence of brainstem, levels of consciousness defined by EEG

Visual evoked potentials, auditory evoked potentials, somatosensory evoked potentials and the annotation of the waveforms and interpretation of abnormal findings

Additionally, it is expected that students will integrate knowledge from both this unit and the Advanced Neurophysiology unit within the co-requisite USSJY3-30-3 module in order to fully understand the scientific basis and diagnosis of neurophysiological conditions.

Teaching and Learning Methods: If the COVID-19 situation allows, there will be blocks of contact time at UWE. Included in each block week are laboratory workshops, lectures and tutorials. The contact time will equate to approximately 15 hours per block (a total of 45 hours). If onsite block weeks are not possible, these sessions will be delivered online as far as possible.

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.

If the COVID-19 situation allows, 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. If onsite Block Weeks are not possible due to COVID-19, these sessions will be delivered as online workshops, lectures and tutorials.

The remainder of the independent learning time allocated to the module should be spent preparing for assessments (B1, B2), and undertaking revision for the exams (A1, A2).

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 Contact Hours. 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 respiratory and sleep physiologist or neurophysiologist, as appropriate. There will be two components to the assessment of this module.

Component A will comprise an in class assessment conducted under controlled conditions. This will assess a broad knowledge base and focus on data interpretation of clinical scenarios and case based material. Component A will also include a practical examination in a relevant clinical setting in order to assess both knowledge and the application of the relevant clinical skills required of a respiratory and sleep physiologist or neurophysiologist, as appropriate. The practical exam relates to clinical competence and therefore students must achieve a minimum pass mark of 40% in this element, in order to satisfy professional body requirements.

STUDENT AND ACADEMIC SERVICES

Component B will comprise an integrated assignment with a written component and an oral presentation. The student will be expected to demonstrate the synthesis of data and literature from multiple sources, effective communication, and the ability to answer questions and justify their approach to the relevant treatment and management strategy.

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-learningmathematics-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>).

First Sit Components	Final Assessment	Element weighting	Description
Practical Skills Assessment - Component A		20 %	Practical exam Students must achieve a mark of 40% or above in this element in accordance with professional body requirements.
Written Assignment - Component B		35 %	Integrated assignment
Presentation - Component B		15 %	Oral presentation (30 minutes including questions)
In-class test - Component A	✓	30 %	In class assessment (3 hours)
Resit Components	Final Assessment	Element weighting	Description
Practical Skills Assessment - Component A		20 %	Practical exam Students must achieve a mark of 40% or above in this element in accordance with professional body requirements.
Written Assignment - Component B		50 %	Integrated assignment and presentation
In-class test - Component A	✓	30 %	In class assessment (3 hours)

Part 4: Teaching and Learning Methods		
Learning Outcomes	On successful completion of this module students will achieve the following learning outcomes:	
	Module Learning Outcomes	Reference
	Applied Respiratory and Sleep Physiology (Respiratory and Sleep Physiology pathway): Explain in detail the underpinning basic and clinical science with respect to sleep studies including the neurological aspects of sleep and sleep disturbed breathing	MO1
	Applied Respiratory and Sleep Physiology (Respiratory and Sleep Physiology pathway): Evaluate the mode of action and application of key pharmacological and non-pharmacological treatments for disorders assessed in the key areas	MO2
	Applied Respiratory and Sleep Physiology (Respiratory and Sleep Physiology pathway): Discuss in detail the differences between children and adults with respect to investigations in the key areas	MO3
	Applied Respiratory and Sleep Physiology (Respiratory and Sleep Physiology pathway): Detail the importance of patient-centred care within this care pathway	MO4
	Applied Respiratory and Sleep Physiology (Respiratory and Sleep Physiology pathway): Use a wide range of contemporary literature and guidelines to discuss and evaluate clinical practice in a range of relevant settings	MO5
	Applied Respiratory and Sleep Physiology (Respiratory and Sleep Physiology pathway): Effectively communicate clinical and scientific concepts	MO6
	Applied Neurophysiology (Neurophysiology pathway): Correlate stimuli characteristics with the effect on recorded waveforms	MO7
	Applied Neurophysiology (Neurophysiology pathway): Distinguish normal from abnormal waveforms and phenomena in adult EEG	MO8
	Applied Neurophysiology (Neurophysiology pathway): Characterise the features of a normal paediatric EEG and provide a technical description of an example measurement	MO9
	Applied Neurophysiology (Neurophysiology pathway): Explain the process of factual report writing and EEG interpretation	MO10
	Applied Neurophysiology (Neurophysiology pathway): Characterise the effects of activation techniques and drugs on the adult EEG	MO11
	Applied Neurophysiology (Neurophysiology pathway): Describe the adult VEP, brainstem evoked potential (BSEP) and SSEP, and the annotation of the waveforms	MO12
	Applied Neurophysiology (Neurophysiology pathway): Interpret abnormal findings of the VEP	MO13
	Applied Neurophysiology (Neurophysiology pathway): Appraise the value of the EEG and evoked potential in the intensive care unit (ICU)	MO14
Contact Hours	Independent Study Hours:	
	Independent study/self-guided study	225
	Total Independent Study Hours:	225
	Scheduled Learning and Teaching Hours:	
	Face-to-face learning	75

STUDENT AND ACADEMIC SERVICES

	Total Scheduled Learning and Teaching Hours:	75
	Hours to be allocated	300
	Allocated Hours	300
Reading List	<i>The reading list for this module can be accessed via the following link:</i> https://uwe.rl.talis.com/modules/ussjyc-30-3.html	

Part 5: Contributes Towards	
This module contributes towards the following programmes of study:	