

**MODULE SPECIFICATION**

Part 1: Information			
Module Title	Applied Neurophysiology, Respiratory and Sleep Physiology		
Module Code	USSJYC-30-3	Level	3
For implementation from	September 2017		
UWE Credit Rating	30	ECTS Credit Rating	15
Faculty	Health & Applied Sciences	Field	Applied Sciences
Department	Applied Sciences		
Contributes towards	BSc (Hons) Healthcare Science (Physiological Sciences)		
Module type:	Standard		
Pre-requisites	USSKAY-30-2 Respiratory & Sleep Physiology & Pathophysiology A USSKBA-30-2 Respiratory & Sleep Physiology & Pathophysiology B OR USSKL9-30-2 Pathophysiological Sciences A USSKLA-30-2 Pathophysiological Sciences B		
Excluded Combinations	N/A		
Co-requisites	USSJY3-30-3 Advanced Cardiac Physiology and Neurophysiology		
Module Entry requirements	Level 5 (or equivalent) physiological sciences qualification		

Part 2: Description
<p>This module explores the clinical environment and contains two distinct units, namely</p> <ul style="list-style-type: none"> Unit 1: Applied Respiratory and Sleep Physiology Unit 2: Applied Neurophysiology <p>Students complete one of these units as prescribed by their pathway. Unit 1 aligns to the Healthcare Science (Physiological Sciences) Respiratory & Sleep Physiology pathway. Unit 2 aligns to the Healthcare Science (Physiological Sciences) Neurophysiology pathway.</p> <p>The syllabus covers:</p> <p>1. Applied Respiratory and Sleep Physiology [Respiratory & Sleep Physiology pathway]</p> <p>Patient Centred Care</p> <ul style="list-style-type: none"> Communication skills Care pathways for patients with respiratory disease Problems associated with care <p>Sleep Studies</p> <ul style="list-style-type: none"> 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 & 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 USSJYB-30-3 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
 - 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 & 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.

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 75 hours).

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.

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.

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 table below. 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.

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 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-learning-mathematics-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>).

Identify final timetabled piece of assessment (component and element)

A1


A:

B:

	50	50
First Sit		
Component A (controlled conditions) Description of each element	Element weighting (as % of component)	
1. In class assessment (3 hours)	60%	
2. Practical exam Students must achieve a mark of 40% or above in this element in accordance with professional body requirements.	40%	
Component B Description of each element	Element weighting (as % of component)	
1. Integrated assignment	70%	
2. Oral presentation (30 minutes including questions)	30%	
Resit (further attendance at taught classes is not required)		
Component A (controlled conditions) Description of each element	Element weighting (as % of component)	
1. In class assessment (3 hours)	60%	
2. Practical exam Students must achieve a mark of 40% or above in this element in accordance with professional body requirements.	40%	
Component B Description of each element	Element weighting (as % of component)	
1. Integrated assignment & presentation	100%	

Part 4: Teaching and Learning Methods

Learning Outcomes	<p>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> <ul style="list-style-type: none"> • Unit 1: Applied Respiratory and Sleep Physiology • Unit 2: Applied Neurophysiology <p>Unit 1 aligns to the Healthcare Science (Physiological Sciences) Respiratory & Sleep Physiology pathway. Unit 2 aligns to the Healthcare Science (Physiological Sciences) Neurophysiology pathway.</p> <p>On successful completion of this module the student will be able to:</p> <p>1. Applied Respiratory and Sleep Physiology [Respiratory & Sleep Physiology pathway]</p> <ul style="list-style-type: none"> • Explain in detail the underpinning basic and clinical science with respect to sleep studies including the neurological aspects of sleep and sleep disturbed breathing [A1, A2, B1, B2] • Evaluate the mode of action and application of key pharmacological and nonpharmacological treatments for disorders assessed in the key areas [A1, A2, B1, B2] • Discuss in detail the differences between children and adults with respect to investigations in the key areas [A1, A2, B1, B2] • Detail the importance of patient-centred care within this care pathway [B1, B2] • Use a wide range of contemporary literature and guidelines to discuss and evaluate clinical practice in a range of relevant settings [B1, B2] • Effectively communicate clinical and scientific concepts [A1, A2, B1, B2] <p>2. Applied Neurophysiology [Neurophysiology pathway]</p> <ul style="list-style-type: none"> • Correlate stimuli characteristics with the effect on recorded waveforms [A1, A2, B1, B2] • Distinguish normal from abnormal waveforms and phenomena in adult EEG [A1, B1, B2] • Characterise the features of a normal paediatric EEG and provide a technical description of an example measurement [A1, B1, B2] • Explain the process of factual report writing and EEG interpretation [A1, B1, B2] • Characterise the effects of activation techniques and drugs on the adult EEG [A1, A2, B1, B2] • Describe the adult VEP, brainstem evoked potential (BSEP) and SSEP, and the annotation of the waveforms [A1, A2, B1, B2] • Interpret abnormal findings of the VEP [A1, A2, B1, B2] • Appraise the value of the EEG and evoked potential in the intensive care unit (ICU) [A1, A2]
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Key Information Sets Information (KIS)	Key Information Set - Module data				
	Number of credits for this module			30	
	Hours to be allocated	Scheduled learning and teaching study hours	Independent study hours	Placement study hours	Allocated Hours
300	75	225	0	300	

Contact Hours

The table below indicates as a percentage the total assessment of the module which constitutes a;

In class assessment: Unseen or open book written exam

Coursework: Written assignment or essay, report, dissertation, portfolio, project or in class test

Practical Exam: Oral Assessment and/or presentation, practical skills assessment, practical exam (i.e. an exam determining mastery of a technique)

Total Assessment

Total assessment of the module:			
In class assessment assessment percentage		30%	
Coursework assessment percentage		50%	
Practical exam assessment percentage		20%	
		100%	

Reading List

Modernising Scientific Careers Programme Training Manual for appropriate Division and Specialist Route. Available from <http://www.nshcs.hee.nhs.uk/curricula>

The module reading list can be accessed through the following link:

<https://uwe.rl.talis.com/lists/48873C60-9323-8B2E-71D1-492BA4D08231.html>

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First CAP Approval Date	May 2012			
Revision CAP Approval Date	31 May 2017	Version	2	MIA 10686