University of the West of England
BRISTOL

CORPORATE AND ACADEMIC SERVICES

MODULE SPECIFICATION

Part 1: Basic Data						
Module Title	Applied Respiratory and Sleep Physiology					
Module Code	USSJYC-30-3		Level	3	Version	1.1
Owning Faculty	Health and Applied Sciences		Field	Applied Sciences		
Department	Applied Sciences					
Contributes towards	BSc. (Hons) Healthcare Science (Physiological Sciences) Respiratory & Sleep Physiology					
UWE Credit Rating	30	ECTS Credit Rating	15	Module Type	Standard	
Pre-requisites	Respiratory and Sleep Physiology A and B (Level 2) [USSKAY-30-2 and USSKBA-30-2]		Co- requisites	USSJYB-30-3 Advanced Respiratory and Sleep Physiology		
Excluded Combinations	None		Module Entry requirements	None		
Valid From	September 2012		Valid to	September 2018		

CAP Approval Date	V1 May 2012 V1.1 July 2016

Part 2: Learning and Teaching	
Learning Outcomes	On successful completion of this module the student will: (relevant assessment component is listed in brackets after each LO) 1. Review respiratory and sleep physiology investigations and apply this knowledge to typical clinical scenarios. (**A1, A2**) 2. Discuss in detail the underpinning basic and clinical science with respect to the following key areas (**A 1&2 + B 1&2**): a) Challenge Testing b) Blood Gas Analysis– Invasive and Non-Invasive 3. Evaluate the mode of action and application of key pharmacological and non-pharmacological treatments for disorders assessed in the key areas. (**A1&2 + B1&2**) 4. Use a wide range of contemporary literature and guidelines to discuss and evaluate clinical practice in a range of relevant settings (**B1&2**). 5. Effectively communicate clinical and scientific concepts (**A 1&2 + B 1&2**). **Students are expected to integrate knowledge from this module with that of USSJYB-30-3 in order to develop a comprehensive understanding of the subject matter.** In addition, the educational experience may explore, develop, and practise but not formally discretely assess the following Professional aspects, as set out within the Modernising Scientific Careers Curriculum:

	1. Respect and uphold the rights, dignity and privacy of patients. 2. Establish patient-centred rapport. 3. Appreciate the empathy and sensitivity needed when dealing with the patient experience of long-term conditions and terminal illness. 4. Actively seek accurate and validated information from all available sources with respect to respiratory and sleep investigations. 5. Select and apply appropriate analysis or assessment techniques and tools. 6. Critically discuss the problems associated with the care of patients undergoing respiratory investigations or treatments.
Syllabus Outline	**Indicative Content** A. Review, physiology, inflammatory mechanisms and basic immunology of relevance to the key topics B. Airway Challenge Testing • Pharmacology and mechanism of action of - mannitol, methacholine, and histamine • Mechanisms of action of – cold air and of exercise of airway function • Methods for assessing airway reactivity – chemical, cold air, exercise and hyperventilation • Indications and contra-indications for testing • Safety precautions and safe handling of reagents • Presentation of results C. Allergy testing • Immunological mechanisms associated with allergy testing • Skin Prick Testing • Patch Testing D. Invasive and Non-invasive Blood Gas Measurement • Review of the physiological pathways contributing to maintenance of normal blood gases - a) gas exchange, b) gas transport and c) acid-base balance and d) blood gases • Characteristics and function of invasive blood gas analysers and non-invasive blood gas measurement systems (pulse oximetry and transcutaneous measurements) • Safety procedures for the handling of blood • Invasive sampling procedures – arterial versus capillary • Comparison of invasive and non-invasive blood gas measurements in clinical practice • Normal values • Application on invasive and non-invasive blood gases in - • Acute and Chronic care • LTOT assessments • Shunt testing • Exercise Testing • Interpretation of results in clinical practice E. Respiratory Muscle Assessment • Mouth pressures • Sniff pressures • Cough PEF • Supine and sitting vital capacity (VC) Additionally, it is expected that students will integrate knowledge from both Level 3 Respiratory Physiology models in order to fully understand the scientific basis and diagnosis of respiratory and sleep conditions.

Contact Hours/Scheduled Hours	• The student will have a minimum of 6 hours per week contact time over the course of semester 1. The module will be delivered by specialist practitioners within the work-place setting and will comprise lectures, seminars, tutorials, practicals, and observation as appropriate to the module content at the time. The teaching will take place within the University Hospitals Bristol Respiratory and Sleep departments and University Hospitals Bristol Education Centre.
Teaching and Learning Methods	Students are expected to spend 72 hours on scheduled learning and 228 hours on independent learning. Independent learning will take the following forms with an approximate indication of time required for each: Essential reading to support acquisition of knowledge relating to lectures and practical exercises – 96 hours Researching case studies, including accessing VLE scenarios such as 'Virtual Patient' – 30 hours Observational learning and discussions within the BRI or 'home' placement setting – 20 hours Preparation and submission of assessment – 10 hours Revision and preparation for exam – 72 hours **Scheduled learning** includes lectures, seminars, tutorials, demonstration, practical classes and workshops; work based learning. **Independent learning** includes hours engaged with essential reading, case study preparation, assignment preparation and completion etc.
Reading Strategy	Students will be expected to purchase any core text recommended, access to the core text will also be provided for reference via the library, but is not expected to negate the need for the student to provide their own copy. Students will be expected to access all other essential reading either via handouts provided or online through the library, Blackboard, or other recommended source (typically free access e-journal). Wherever possible, where free online access is not available digitalised copies of book chapters or articles will be provided. All students are encouraged to read widely using the library catalogue, a variety of bibliographic and full text databases and Internet resources. Many resources can be accessed remotely. Guidance to some key authors and journal titles available through the Library will be given in the Module Guide and updated annually. Assignment reference lists are expected to reflect the range of reading carried out. Students are expected to be able to identify and retrieve appropriate reading. This module offers an opportunity to further develop information skills introduced at Level 1. Students will be given the opportunity to attend the GDP sessions on selection of appropriate databases and search skills. Additional support is available through the Library Services web pages, including interactive tutorials on finding books and journals, evaluating information and referencing. Sign up workshops are also offered by the Library.
Indicative Reading List	*The following list is offered to provide validation panels/accrediting bodies with an indication of the type and level of information students may be expected to consult. As such, its currency may wane during the life span of the module specification. However, as indicated above, CURRENT advice on readings will be available via other more frequently updated mechanisms.* Cotes JE, Chinn DJ, Miller MR (2006) Lung Function, 6th Ed. Blackwell Publishing Gibson GJ (2009). Clinical Tests of Respiratory Function, 3rd Ed. Hodder Arnold Hughes M (2010) Physiology & Practice of Pulmonary Function. Association of

	Respiratory Technology & Physiology Lumb AB (2010). Nunn's Applied Respiratory Physiology, 7th Ed. Churchill Livingstone Maskell N, Millar A (2009). Oxford Desk Reference: Respiratory Medicine. OUP Ruppel GL (2003) Manual of Pulmonary Function Testing. 8th Ed, Mosby The ARTP Practical Handbook of Respiratory Function Testing - Part 1. (2003) Second edition. Association of Respiratory Technology & Physiology The ARTP Practical Handbook of Respiratory Function Testing - Part 2. (2005) Second edition. Association of Respiratory Technology & Physiology West J.B. (2012) Respiratory Physiology The Essentials. Ninth Edition. Lippincott Williams & Wilkins Wilson S, & Nutt D. (2008) Sleep Disorders. OUP **Journals** Respiration Physiology Thorax Chest European Respiratory Journal Therapeutic Advances in Respiratory Disease Respiratory Medicine Journal of Sleep Research Sleep and Breathing

Part 3: Assessment	
Assessment Strategy	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. There will two components to the assessment of this module **Component A**: Will comprise a awritten examination conducted under controlled conditions. This examination 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. 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 wioll 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.

Identify final assessment component and element	**Component A, element 1**	
% weighting between components A and B (Standard modules only)	**A:**	**B**:
	50	**50**

First Sit	
Component A (controlled conditions) **Description of each element**	**Element weighting** **(as % of component)**
1. Written exam (1.5 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 incliuding 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. Written exam (1.5 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. Assignment (3000 words)	100
If a student is permitted an **EXCEPTIONAL RETAKE** of the module the assessment will be that indicated by the Module Description at the time that retake commences.	