



CORPORATE AND ACADEMIC SERVICES

MODULE SPECIFICATION

Part 1: Basic Data					
Module Title	Respiratory & Sleep Physiology & Pathophysiology B				
Module Code	USSKBA-30-2	Level	2	Version	1
Owning Faculty	HAS	Field	BBAS		
Contributes towards	Healthcare Science (Physiological Sciences) Cardiovascular and Respiratory & Sleep Sciences				
UWE Credit Rating	30	ECTS Credit Rating	15	Module Type	Standard,
Pre-requisites	USSKA9-30-1 Introduction to Physiological Sciences & Patient Care	Co- requisites			
Excluded Combinations	Cardiac Physiology A and B [for those registered on HCS(PS)]	Module Entry requirements	Appropriate Experiential Learning		
Valid From	September 2014	Valid to	September 2020		

CAP Approval Date	28/03/2014
--------------------------	------------

Part 2: Learning and Teaching	
Learning Outcomes	<p>On successful completion of this module students will be able to:</p> <ol style="list-style-type: none"> 1. Describe the basis of common infections of the Respiratory system. 2. Describe common diseases that affect Respiratory and Sleep Physiology. 3. Gain an awareness of primary and secondary autonomic disorders. 4. Explain the need for calibration and quality assurance for all measurements undertaken in Respiratory and Sleep Science. 5. Explain the methods that can be used to estimate static lung volumes. 6. Compare different techniques to estimate lung volumes and the limitations of each technique. 7. Explain the principles of operation of respiratory gas analysers to measure commonly used gases in respiratory measurement. 8. Explain the routine procedures for care and calibration of gas analysers. 9. Explain the structure-function relationship determining gas exchange and Carbon Monoxide Transfer Factor. 10. Explain the principles and operation of pulse oximeters. 11. Explain the different techniques for measuring respiratory muscle function

	<p>All Learning Outcomes will be assessed via component A, the focus of the component B case-study will alter year on year but will reflect one or more of the LOs listed above.</p> <p>In addition the educational experience may explore, develop, and practise <u>but not formally discretely assess</u> the following Professional aspects, as set out within the Modernising Scientific Careers Curriculum:</p> <ol style="list-style-type: none"> 1. Discuss complex scientific information in ways that can be understood by patients and practitioners in other areas. 2. Use correct terminology when discussing scientific issues. 3. Work safely in clinical areas.
Syllabus Outline	<p>Assessment of Lung Function</p> <ul style="list-style-type: none"> • Techniques used in the assessment of lung function • Reference ranges <ul style="list-style-type: none"> • Uses • Limitations • Reporting Results <p>A) Static Lung Volumes</p> <ul style="list-style-type: none"> • Characteristics of recording equipment • Indications • Contra-Indications • Measurement techniques – Body Plethysmography, Nitrogen • Washout, and Helium Dilution • Calculations • Cleaning procedures • Common problems • Normal values and interpretation of results <p>B) Measurement of Gas Transfer</p> <ul style="list-style-type: none"> • Structure-Function Characteristics • Pathway of Diffusion • Characteristics of recording equipment • Indications • Contra-Indications • Measurement technique – single-breath and rebreathing • Calculations • Cleaning procedures • Technical and Physiological Variations • Normal values and interpretation of results <p>C) Spot Check Pulse Oximetry</p> <ul style="list-style-type: none"> • Characteristics of recording equipment • Indications • Contra-Indications • Recommended measurement technique • Common problems • Normal values and interpretation of results <p>D) Respiratory Muscle Assessment</p> <ul style="list-style-type: none"> • Mouth pressures • Sniff pressures • Cough PEF • Supine and sitting vital capacity (VC) <p>E) Basis of common infections affecting the Respiratory system.</p> <p>F) Common diseases of the Respiratory system including the epidemiology, public health and psychosocial aspects including:</p> <ul style="list-style-type: none"> • Chronic obstructive pulmonary disease • Asthma • Restrictive lung disease • Congenital and genetic lung conditions • Pneumonia • Lung cancer • Pulmonary Vascular Disorders • Cystic fibrosis • Obstructive sleep apnoea

	<ul style="list-style-type: none"> • Central sleep apnoea • Respiratory muscle disorders • Occupational lung disease
Contact Hours/Scheduled Hours	<ul style="list-style-type: none"> • The student will have a minimum of 3 hours per week contact time over the two semesters. This will typically take the form of alternating lecture and practical weeks. The module will be delivered by Applied Sciences staff plus specialist practitioners. • The module will also take advantage of virtual learning environments (VLEs) and other technology-aided means, such as 'Virtual Patient' to aid and consolidate student learning.
Teaching and Learning Methods	<p>Students are expected to spend 72 hours on scheduled learning and 228 hours on independent learning.</p> <p>Independent learning will take the following forms with an approximate indication of time required for each:</p> <ul style="list-style-type: none"> • Essential reading to support acquisition of knowledge relating to lectures and practical exercises – 104 hours • Researching case studies, including accessing VLE scenarios such as 'Virtual Patient' – 37 hours • Preparation and submission of assessment – 15 hours • Revision and preparation for exam – 72 hours <p>Scheduled learning includes lectures, tutorials, demonstration, practical classes and workshops; external visits.</p> <p>Independent learning includes hours engaged with essential reading, case study preparation, assignment preparation and completion etc.</p>
Reading Strategy	<p>Students will be expected to purchase one or more of the Essential texts listed and to access the further reading. The module booklet will set out which text(s) should be purchased – where more than one, the cost of items and/or their use on other modules will have been considered in making the recommendation. Copies of essential texts will be provided within the library stock, on restricted loan for reference. Further reading will be provided as handouts, or as digitalised book chapters or journal articles, where free electronic access is not available.</p> <p>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.</p> <p>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.</p>
Indicative Reading List	<p>There is no one essential text for this course, therefore students are guided to access a range of texts available either in hardcopy through the library or electronically as free access material or as digitalised copies available on Blackboard and through the library.</p>

Bourke, S.J. Burns, G.P. (2011) *Lecture Notes: Respiratory Medicine*. Oxford: Wiley-Blackwell

Cotes, J.E. Chinn, D.J. Miller, M.R. (2006) *Lung Function*, 6th ed. Oxford: Blackwell Publishing

Davies, A. and Moores, C. (2011) *The Respiratory System*. 2nd ed.. Edinburgh: Churchill Livingstone

Gibson, G.J. (2009). *Clinical Tests of Respiratory Function*, 3rd ed. London: Hodder Arnold

Hughes, M. (2010) *Physiology & Practice of Pulmonary Function*. Boldmere: Association of Respiratory Technology & Physiology.

Lumb, A.B. (2010). *Nunn's Applied Respiratory Physiology*, 7th ed. Edinburgh: Churchill Livingstone.

Maskell, N. Millar, A. (2009). *Oxford Desk Reference: Respiratory Medicine*. Oxford: OUP

Naish, J., Revest, P. and Syndercombe, Court, D. (2009) *Medical Sciences*. Edinburgh: W.B Saunders

Newall, C., Evans, A., Lloyd, J., Shakespeare, J. & Carter, R. *ARTP Handbook in Spirometry*. 2nd ed.. Lichfield: Association of Respiratory Technology & Physiology

Ruppel, G.L. (2003) *Manual of Pulmonary Function Testing*. 8th ed., London: Mosby

Shneerson, J.M. (2005). *Sleep Medicine: a guide to sleep and its disorders.*, 2nd ed. Oxford: Blackwell

ARTP, (2003) *The ARTP Practical Handbook of Respiratory Function Testing - Part 1*. 2nd ed. Lichfield: Association of Respiratory Technology & Physiology.

ARTP, (2005) *The ARTP Practical Handbook of Respiratory Function Testing - Part 2*. 2nd ed.. Lichfield: Association of Respiratory Technology & Physiology.

West, J.B. (2012) *Respiratory Physiology The Essentials*. 9th ed.. Philadelphia, PA: Lippincott Williams & Wilkins

Journals

Respiration Physiology

Thorax

Chest

European Respiratory Journal

Respiratory Medicine

Therapeutic Advances in Respiratory Disease

Journal of Sleep Research

Sleep and Breathing

--	--

Part 3: Assessment	
Assessment Strategy	<ul style="list-style-type: none"> • Component A (controlled condition) will take the form of a 3 hour examination. The examination will assess across the module curriculum to ensure an appropriate breadth and depth of knowledge. • Component B will comprise two elements the first being a mid-point in class assessment using a Personal Response System ('Clickers') to provide an early assessment of learning and rapid feedback to the student about their level of understanding. The second element will be a case-study assessing the student's ability to synthesise information and draw upon their learning to arrive at an appropriate set of responses. • Lectures and supporting tutorials will use case-based investigations to enable students to engage in group discussions and explore their decision making processes ahead of their coursework submission. The generic assessment criteria used in the Department of Applied Sciences, and made available to students, will be used for all assessments.

Identify final assessment component and element		
% 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 <i>(as % of component)</i>
1. Examination (3 hours)	100
Component B Description of each element	Element weighting <i>(as % of component)</i>
1. Clicker test	30
2. Case-study	70

Resit (further attendance at taught classes is not required)	
Component A (controlled conditions) Description of each element	Element weighting <i>(as % of component)</i>
1. Exam (3 hours)	100
Component B Description of each element	Element weighting <i>(as % of component)</i>
1. Extended Case-study	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.