University of the West of England
BRISTOL

CORPORATE AND ACADEMIC SERVICES

MODULE SPECIFICATION

Part 1: Basic Data						
Module Title	Healthcare Science in Practice					
Module Code	USSJTA-60-2		Level	2	Version	
Owning Faculty	Health and Applied Sciences		Field	Department of Biological Biomedical and Analytical Sciences		
Contributes towards	Foundation Degree in Healthcare Science					
UWE Credit Rating	60	ECTS Credit Rating		Module Type	Standard	
Pre-requisites	Level 1 A&P + IBD		Co- requisites			
Excluded Combinations			Module Entry requirements			
Valid From	September 2013		Valid to	September 2019		

CAP Approval Date	21st November 2012

Part 2: Learning and Teaching	
Learning Outcomes	**On successful completion of this module students will be able to fulfil the common learning outcome:** • Demonstrate an understanding of the integrated nature of diagnostic assessments conducted on patients and/or patient samples. **On successful completion of this module students will be able to fulfil the learning outcomes from 4 of the following 11 themed units of study:** **Life Sciences Themed Units 1-5:** **1. Applied Genetics** • describe the range of current gene-based techniques used in genetic studies (component A) • discuss selected applications of current gene-based technology (component A, B) • appreciate the continuing development gene-based technology (component A, B) • explain the impact of gene-based technology on human society (component A) • analyse and interpret laboratory data (component B) **2. Biology of Microorganisms** • understand fundamental aspects of microbial growth, metabolism and lifestyle (component A) • describe the unique nature of viruses (component A) • appreciate the significance of classification of bacteria (component A) • analyse and interpret laboratory data (component B)

3. Blood and Tissue Sciences

- review the mechanisms responsible for disease and disorders in the human body (component A)
- demonstrate knowledge of the pathophysiology, investigation and diagnosis of selected diseases (component A, B)
- develop the ability to integrate the specialist areas of biomedical science into the context of a coherent case study approach (component B)

4. Immunology & Disease

- demonstrate basic knowledge of the cellular and molecular aspects of immunology (component A)
- distinguish the role of humoral and cellular mechanisms in response to a wide spectrum of pathogens and antigens (component A)
- recognise how antibodies and effector cells cause tissue damage in selected immune mediated diseases (component A)
- demonstrate a basic understanding of the role of the immune system in blood transfusion and transplantation (component A)
- associate particular symptoms with selected diseases of the immune system (component A, B)
- evaluate important laboratory immunological techniques and their theoretical bases (component A, B)
- analyse and interpret laboratory data (component B)

5. Human Physiology

- interpret and explain the principles of operation of the major physiological systems (as in the condition of health), with particular reference to homeostasis (component A)
- relate particular practical investigative instrumentation / techniques in human physiology and pharmacology to the principles of operation noted above (component A)
- analyse and interpret laboratory data (component B)

Physiological Sciences Themed Units 6-11:

6. CVRS Physiology

- Demonstrate a detailed knowledge of the anatomy, physiology, pharmacology and control of the CVRS systems (component A)
- interpret and explain the principles of operation of the CVRS systems (as in the condition of health), with particular reference to homeostasis (component A)
- relate particular practical investigative instrumentation / techniques in human physiology and pharmacology to the principles of operation noted above (component A, B)
- Understand the characteristics of blood and air flow (component A, B)
- Cardiac embryology and foetal heart development (component A)
- analyse and interpret measurement data acquired either in the lab or in practice (component B)

7. Cardiac Physiology A

- Know and use in context the abbreviations and units used in Cardiac Physiology (component A,B)
- Describe the concept of “normal” and the calculation and use of normal ranges in the interpretation of cardiac investigations and demonstrate the ability to apply these to clinical situations. (component A,B)
- Recognise the normal physiological variability in humans. (component A,B)
- Explain the need for calibration and quality assurance for all measurements undertaken in Cardiac Physiology. (component A)
- Explain the clinical framework for, and basic principles of: Clinical Electrocardiography; The normal Electrocardiogram from birth to old age; Common arrhythmias; Interpretation of Electrocardiograms. (component A,B)
- Recognise life-threatening arrhythmias. (component A,B)

	• Outline management of common arrhythmias (e.g. AT/VT) (component A) **8. Cardiac Physiology B** • Know and use in context the abbreviations and units used in Cardiac Physiology (component A,B) • Describe the concept of "normal" and the calculation and use of normal ranges in the interpretation of cardiac investigations and demonstrate the ability to apply these to clinical situations. (component A,B) • Recognise the normal physiological variability in humans. (component A,B) • Explain the need for calibration and quality assurance for all measurements undertaken in Cardiac Physiology. (component A) • Understand the clinical framework for, and basic principles of: Blood pressure measurement; Ambulatory blood pressure monitoring; Ambulatory electrocardiography; Cardiac exercise stress testing. (component A,B) • Discuss and analyse procedure limitations with cardiac physiology for example sensitivity and specificity of exercise stress testing. (component A,B) **9. Pathophysiology of CVRS** • Understand major abnormalities of physiological control mechanisms in diseases of the Cardiac, Vascular and Respiratory systems. (Component A,B) • Explain cellular, tissue and systems responses to diseases of the Cardiac, Vascular and Respiratory systems concentrating on disorders of growth, tissue responses to injury, cell death, inflammation, neoplasia, normal and abnormal immune responses, atheroma, thrombosis, embolism and infarction. (Component A, B) • Describe the basis of common infections of the Cardiac, Vascular and Respiratory systems. (Component A, B) • Describe common diseases that affect the Cardiac, Vascular, Respiratory and Sleep Physiology. (Component A, B) • Gain an awareness of primary and secondary autonomic disorders. (Component A, B) 10. **Respiratory & Sleep Physiology A** • Know and apply the abbreviations and units used in Respiratory and Sleep Science. (Component A, B) • Explain the concept of "normal" and the calculation, use and limitations of reference values, reference ranges, Lower Limits of Normal (LLN) and standardized residuals(Component A) • Explain the normal physiological variability in humans in a range of tests from birth to old age. (Component A) • Describe the generation and use of reference ranges to define normal and abnormal lung function and apply knowledge to calculate reference ranges, LLN and Standardized residuals (Component A) • Explain the need for calibration and quality assurance for all measurements undertaken in Respiratory and Sleep Science. (Component A, B) • Explain the application of dynamic lung volumes and flows in routine clinical practice and analyse data. (Component A, B) • Compare different techniques to estimate lung volumes and the limitations of each technique. (Component A, B) • Discuss the role and application of inhaled drug therapy (Bronchodilators) in the management of respiratory disease. (Component A) **11. Respiratory & Sleep Physiology B** • Explain the need for calibration and quality assurance for all measurements undertaken in Respiratory and Sleep Science. (Component A) • Explain the methods that can be used to estimate static lung volumes and analyse data. (Component A, B) • Compare different techniques to estimate lung volumes and the limitations of each technique. (Component A, B) • Explain the principles of operation of respiratory gas analysers to measure commonly used gases in respiratory measurement. (Component A)

	• Describe the routine procedures for care and calibration of gas analysers. (Component A) • Explain the structure-function relationship determining gas exchange and Carbon Monoxide Transfer Factor. (Component A) • Assess the principles and operation of pulse oximeters. (Component A,B) • Explain the different techniques for measuring respiratory muscle function (Component A, B)
Syllabus Outline	**Students will study an appropriate combination of 4 from the following 11 themed units of study:** **1. Applied Genetics** • Overview: applied genetics; revision of basic genetic concepts and terminology; manipulating the genome – recombinant DNA technology. • Genome Mapping: Human genome structure; DNA types; approaches to mapping genes – functional and positional cloning; comparing physical and genetic maps; interpreting sequence data; Using model genomes to afford an insight into functional genomics; legal and ethical issues. • Genotyping: DNA variation within organisms; detecting specific DNA variants within individual genomes; disease diagnosis; genetic screening; DNA profiling; ethical and legal issues. • Population genetics : Allele frequencies, genetic equilibria, population mixing, genetic drift and gene flow. • Transgenic Organisms: Creating transgenic organisms; using the technology to study gene function and regulation, transgenic mouse models for human disease; introduction to gene therapy; legal and ethical issues. • Developmental genetics: Stem cells; cell type specification in animals; patterning during embryogenesis; Hox genes in drosophila and mammals **2. Biology of Microorganisms** • Growth, nutrition and death of microbes; catabolism and anabolism • Microbial evolution; 16sRNA; bacterial taxonomy • Gram positive and Gram negative bacteria of medical, general or industrial importance • Virus structure and replication; lysogeny; classification of viruses • Certain microbiological diseases and their control • relationship between host and microorganisms, mechanisms of pathogenicity, **3. Blood and Tissue Sciences** • Students will carry out case studies selected to illustrate the multifactorial and integrated nature of disease and its laboratory investigation. Indicative content includes; • Homeostasis and malignant disease: Central importance of homeostasis, mechanisms of control and the consequences of failure. Concepts of disease and normality, reference ranges Mechanisms of cancer development at a cellular level, haematological disorders and diagnosis and treatment • Cellular Pathology: Microscopic analysis of cells and tissues. Preparative processes for microscopical analysis of tissues and cells. Cell and tissue stabilisation. Histological and cytological features of the disease state. Clinical laboratory applications of cellular pathology; its role in diagnosis, prognosis and prediction. • Clinical Biochemistry: diagnosis, screening and monitoring of disease through qualitative and quantitative evaluation. Diagnosis of Liver, Cardiac diseases and endocrine disorders. Drug toxicity and drug monitoring • Haematology and Transfusion Science: haematology of normal and disease states, haemoglobinopathies and thalassaemias, anaemias, leukaemias and thrombosis. Laboratory investigation of disease states. The role of the laboratory in monitoring of therapy. Immunohaematology; including identification of blood group antigens, methods for antibody detection and compatibility testing and safety aspects of blood transfusion.

4. Immunology and Disease

Basic immunology

- The host and environment, antigens, foreignness, innate and acquired immunity
- Innate immune mechanisms, the problem of immune recognition, immunogens and antigens
- Recognition of self and tolerance
- B cells, epitopes, and antibodies
- Recognition of antigens by T cells, the major histocompatibility complex, and antigen presentation
- Cell-mediated immune reactions
- Basic structure of antibodies, antibody classes, isotypes, allotypes and idiotypes, monoclonal antibodies
- Biological functions of antibodies and complement
- Antigen–antibody interactions; detection and measurement of antibodies
- Different types of immune cells and the lymphatic system
- The humoral response, T–B cell interactions, cytokines and memory cells

Clinical immunology

- Antibody-mediated diseases: hypersensitivity reactions, red cell antigens and transfusion reactions, transplantation
- Humoral and cell responses to bacteria, viruses, fungi and parasites
- Prophylaxis and vaccines
- Rogue T lymphocytes in autoimmunity such as multiple sclerosis, rheumatoid arthritis and diabetes
- The immunology of cancer and immunodeficiency diseases, including AIDS
- Immunoassay, ELISA, SDS-PAGE and Western blotting

5. Human Physiology

- review of neural and endocrine communication systems related to homeostatic control; somatic neuromuscular control; types of muscle as effectors;
- cardiovascular system: cardiac muscle and intrinsic properties of the heart; extrinsic control; vascular system and peripheral resistance; regulation of cardiovascular parameters such as blood pressure;
- respiration: mechanics of lung ventilation; neural and chemical control; gas exchange and transport including acid-base considerations;
- endocrinology: selected examples from the endocrine system will be used to illustrate the role of hormones in homeostatic systems;
- digestion: structure and functional differentiation of human digestive tract; examples of integration of neural and endocrine control of motility and digestive secretions;
- renal physiology: nephron form and function; measures of function such as clearance; fluid, electrolyte and acid-base balance; endocrinology as appropriate, including ADH, Aldosterone, ANP, Renin-Angiotensin system;
- principles of Pharmacology: receptors, autonomic and neuromuscular pharmacology; structure-activity relationships; pharmacological analysis of drug-receptor interactions.

Applied physiology: examples of the integrative functioning of physiological systems under stress, to include dynamic, sustained exercise; extreme heat; stress and the general adaptation syndrome.

6. CVRS Physiology

Introduction to Cardiac Physiology

- Investigations and procedures carried out in the diagnosis and treatment of cardiac disease
- Characteristics of recording equipment and their evaluation
- Control of the circulation
- Cardiac embryology and foetal heart development
- The relationship between atherosclerosis and cardiovascular disease
- Heart failure and its effect on the cardiovascular and other body systems

Introduction to Respiratory and Sleep Science

- Anatomy and physiology of the respiratory system, and central and autonomic

nervous systems
- Control of respiration during sleep
- Control of sleep wake cycle
- Pharmacology and therapeutics
- Introduction to investigations and procedures carried out in the diagnosis and treatment of respiratory disease including sleep disorders
- Physiological measurement systems used to measure respiration during sleep
- Calculation of reference values and calibration and quality control procedures
- Communicable disease and microbiological hazards in the respiratory laboratory; Methods of sterilisation and disinfection

Introduction to Vascular Science
- Anatomy of the vasculature; characteristics of blood flow
- Diseases of the vascular system
- Investigations and procedures carried out in the diagnosis and treatment of vascular disease
- Characteristics of recording equipment and their evaluation
- Ultrasound and physiological measurement systems in the evaluation of the vascular system

7. Cardiac Physiology A
- Clinical Electrocardiography
- Development of a framework for interpretation of Electrocardiograms
- The Normal Electrocardiogram from birth to old age
- Recognition of life threatening arrhythmias
- Recognition of:
  - Common arrhythmias
  - The effect of myocardial infarction and ischaemia on the electrocardiogram
- Management of common arrhythmias.

8. Cardiac Physiology B
- Routine Blood Pressure Measurement
- Ambulatory blood pressure monitoring
- Ambulatory electrocardiography
- Cardiac Exercise stress testing including an understanding of stress echo and myocardial perfusion scans.

9. Pathophysiology of Common Cardiovascular and Respiratory Conditions
- Cellular, tissue and systems response to common Cardiac, Vascular and Respiratory diseases.
- Basis of common infections affecting the Cardiac, Vascular and Respiratory systems.
- Common diseases of the Cardiac, Vascular and Respiratory system including the epidemiology, public health and psychosocial aspects including:
  - *Cardiac Disease:* Ischaemic heart disease and myocardial infarction; Acquired valvular disease; Hypertensive heart disease; Cardiomyopathy; Congenital heart disease; Autonomic disorders; Heart failure
  - *Vascular Disease:* Peripheral arterial disease*;* Venous disease*;* Cerebrovascular disease
  - *Respiratory Diseases:* Chronic obstructive pulmonary disease*;* Asthma*;* Restrictive lung disease*;* Congenital and genetic lung conditions*;* Pneumonia*;* Lung cancer*;* Pulmonary Vascular Disorders*;* Cystic fibrosis*;* Obstructive sleep apnoea*;* Central sleep apnoea; Respiratory muscle disorders*;* Occupational lung disease
  - The role of respiratory mechanics in control of breathing; Effect of neuromuscular disease on the respiratory system
- Impact of smoking on health; common risk factors for cardiovascular disease; the concept of risk assessment.

10. Respiratory & Sleep Physiology A
- Pathophysiological basis of changes in lung function tests observed in common

	lung diseases. • Pharmacology – basic principles (receptors, pharmacodynamics, pharmacokinetics) • Lung Functions in context – Clinical History, X-Rays. HRCT, Blood Tests • Assessing Lung Function – which test for which question? • Techniques used in the assessment of lung function • Reference ranges, LLN and SR's • Reporting Results • Dynamic Lung Volumes and Flows • Reversibility Testing **11. Respiratory & Sleep Physiology B** • Assessment of Lung Function • Static Lung Volumes • Measurement of Gas Transfer • Spot Check Pulse Oximetry • Respiratory Muscle Assessment
Contact Hours	**A full-time student will have the following contact:** • Work-based training: A minimum of 16 h per week total (pro rata contribution towards learning related to this module). • University-based learning: There will be a total of 12 hours of on-campus learning in each of the allocated block weeks. Therefore in year two there would be 36 hours direct contact at UWE for this module spread across the three weeks in January (2 weeks) and June (1 week). Included in these weeks are practical classes, lectures, tutorials and assessment. • The remaining 64 hours split into periods of 2 hours of protected learning time in the work place throughout the year. These will be required for the engagement of online learning material/online tutorials/cohort interaction.
Teaching and Learning Methods	**Scheduled learning:** During block periods at UWE, lectures, seminars, tutorials, and practical classes will be delivered. When in the work place scheduled contact time will be assigned for interactive online discussion and for online 'office hours' for more immediate responses to queries relating to the module. **Independent learning:** Using defined TEL strategies 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 unit choices made. **Work-based learning**: Students will learn subject specific content during work-based learning as well as consolidating knowledge through seeing the application of subject in practice during their employment and employer-based training.
Key Information Sets Information	Key Information Sets (KIS) are produced at programme level for all programmes that this module contributes to, which is a requirement set by HESA/HEFCE. KIS are comparable sets of standardised information about undergraduate courses allowing prospective students to compare and contrast between programmes they are interested in applying for.

Hours to be allocated	Scheduled learning and teaching study hours	Independent study hours	Placement study hours	Allocated Hours
600	100	210	290	600

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

Written Exam: Unseen written exam, open book written exam, In-class test
Coursework: Written assignment or essay, report, dissertation, portfolio, project
Practical Exam: Oral Assessment and/or presentation, practical skills assessment, practical exam

Please note that this is the total of various types of assessment and will not necessarily reflect the component and module weightings in the Assessment section of this module description:

Total assessment of the module:	
Written exam assessment percentage	50%
Coursework assessment percentage	50%
	100%

Reading Strategy	Students will be expected to access key recommended texts listed and to access the further reading. The student will be expected to purchase key texts as directed and to access further recommended reading provided as e-books and journals or as digitalised book chapters or journal articles, where free electronic access is not available. Such access will be provided via the library website and through Blackboard. All students are encouraged to read widely using the library catalogue, a variety of remote access bibliographic and full text databases and Internet resources are available. 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. Support is available through the Library Services web pages, including interactive tutorials on finding books and journals, evaluating information and referencing.
Indicative Reading List	**Applied Genetics** Brown, T.A. (2002) *Genomes 2nd Edition*. Oxford: Wiley-Liss Lamb, B.C. (2006). *The Applied Genetics of Plants, Animals, Humans and Fungi 2nd edition*. World Scientific Publishing. Lodish, H., Berk, A., Kaiser, C.A., Krieger, M., Bretscher, A., Ploegh, H., Amon, A. & Russell, P.J. (2009). *iGenetics: A Molecular Approach 3rd edition*. Benjamin Cummings.

Scott, M.P. (2012). *Molecular Cell Biology 7th edition*. W.H. Freeman.

Biology of Microorganisms

Brooks, G. F., Carroll, K. C., Butel, J. S., Morse, S. A. & Mietzner, T. (2010). *Jawetz, Melnick & Adelberg's Medical Microbiology 25th edition*. New York: McGraw Hill.

Strelkauskas, A., Strelkauskas, J. & Moszyk-Strelkauskas, D. (2010). *Microbiology: a clinical approach*. New York: Garland Science.

Willey, J. M., Sherwood, L. M. & Woolverton, C. J. (2011). *Prescott's Microbiology 8th edition*. New York: McGraw Hill.

Human Physiology

Berne, R. & Levy, M. (2010). *Principles of Physiology 6th edition*. Mosby.

Marieb, E & Hoen, K. (2011) *Human Anatomy and Physiology 9th edition.* Benjamin Cummings.

Silverthorn, D. (2012) *Human Physiology: An Integrated Approach 6th edition*. Pearson Benjamin Cummings.

Stanfield, C.L. & Germann, W.J. (2007). *Principles of Human Physiology 3rd edition*. Pearson Benjamin Cummings.

Tortora, J.G. & Derrickson, B.H. (2008) *Principles of Anatomy and Physiology 12th edition.* John Wiley & Sons.

Immunology and Disease

Male D., Bronstoff J., Roth D.B. & Roitt, I. (2012). *Immunology 8th edition*. Elsevier Ltd.

Owen, J. Punt, J. & Stranford, S. (2012). *Kuby: Immunology 7th edition*. WH Freeman Ltd.

Blood & Tissue Sciences

Ahmed, N., Dawson, M., Smith, C. & Wood, E.(2007). *Biology of Disease*. Abingdon: Taylor & Francis Gp.

The following text is highly recommended for professional aspects:

Pitt, S.J. & Cunningham, J.M. (2009). *An Introduction to Biomedical Science in Professional and Clinical Practice*. Wiley-Blackwell.

CVRS Physiology

Brown H. and Kozlowski R. (1997) Physiology and Pharmacology of the heart. Wiley Blackwell

Davies A. And Moores C. (2011) The Respiratory System. Second edition. Churchill Livingstone

Holler T., (2008), Cardiology Essentials, Jones and Bartlett Publishers, London

West J.B. (2012) Respiratory Physiology The Essentials. Ninth Edition. Lippincott Williams & Wilkins

Cardiac A

Bennett, D.H. (2006). *Cardiac Arrhythmias: Practical notes on interpretation and treatment 7th edition*. Wiley-Blackwell (8th edition due 2013).

Davey, P. (2008). *ECGs at a Glance*. Wiley Blackwell.

Jenkins, D. & Gerred, S. (2011). *ECGs by Example 3rd edition*. Churchill Livingstone.

Remedica Medical Education and Publishing (2011). *ECG Pocket Reference UK*. Version 1.041. Free App for iPhone

Cardiac B

Ahmed, M. (2009). *Cardiac Stress Testing Pocketcard Set*. Borm Bruckmeier Publishing LLC

Ellestad M.H. (2003) *Stress Testing: Principles and Practice 5th edition.* Oxford University Press.

Respiratory & Sleep A

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

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

Newall, C., Evans, A., Lloyd, J., Shakespeare, J. & Carter, R. *ARTP Handbook in*

	Spirometry 2nd edition. Association of Respiratory Technology & Physiology. *The ARTP Practical Handbook of Respiratory Function Testing - Part 1, 2nd edition* (2003). Association of Respiratory Technology & Physiology. *The ARTP Practical Handbook of Respiratory Function Testing - Part 2.* (2005). **Respiratory & Sleep B** Cotes, J., Chinn, D.J. & Miller, M.R. (2006). *Lung Function, 6th edition*. Blackwell Publishing. Gibson, G.J. (2009). *Clinical Tests of Respiratory Function, 3rd edition*. Hodder Arnold. Hughes, M. (2010). *Physiology & Practice of Pulmonary Function*. Association of Respiratory Technology & Physiology. West, J.B. (2012) *Respiratory Physiology The Essentials, 9th Edition*. Lippincott Williams & Wilkins. **Pathophysiology of CVRS** Lumb, A.B. (2010). *Nunn's Applied Respiratory Physiology 7th edition*. Churchill Livingstone. Nobel, A., Johnson, R., Thomas, A. & Bass, P. (2010) *The Cardiovascular System: Basic Science and Clinical Conditions 2nd edition*. Churchill Livingstone. Shneerson, J.M. (2005). *Sleep Medicine 2nd edition*. Blackwell. *The ARTP Practical Handbook of Respiratory Function Testing - Part 1 2nd edition.* (2003) ARTP. West J.B. (2012). *Respiratory Physiology The Essentials 9th edition.* Lippincott Williams & Wilkins. Wilson, S. & Nutt, D. (2008) *Sleep Disorders*. OUP.

Part 3: Assessment	
Assessment Strategy	• A case study will capture the content of online learning up to block 2 and of practical workshops delivered in week 1 of block 2. This summative assessment will take the form of a poster defence in week 2 of block 2, and constitutes element 1 of component B. • An independent case study of direct relevance to the student's employment will be prepared and presented for assessment as an oral presentation during block 3 attendance at university. This constitutes element 2 of component B. • A 1,000 word contextual review of a recent article related to diagnostic advance(s) in a technique(s) of relevance to the student's employment, the content of which will be negociated with the appropriate academic tutor, will form element 3 of component B. • Throughout the year there will be a series of online assessments (MCQs and short answer questions) during and at the end of each study unit. These will form the basis of formative assessment. • The final summative examinations will use short and longer answer questions. The exams will consist of two 2 h exams where students will have a choice of questions to answer, within the subject units that they have studied. Paper 1 will utilise short answers and paper 2 will focus on short essays. • Together, this examination strategy will address all learners and give a balanced assessment of the module as a whole, in addition to providing exposure to exam formats in preparation for entry to BSc study in the future.

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** **(as % of component)**
1. Written examination (2 hours)	50
2. Written examination (2 hours)	50
Component B **Description of each element**	**Element weighting** **(as % of component)**
1. Case study poster presentation	40
2. Case study oral presentation	40
3. Short contextual review	20

Resit (further attendance at taught classes is not required)	
Component A (controlled conditions) **Description of each element**	**Element weighting** **(as % of component)**
1. Written examination (2 hours)	50
2. Written examination (2 hours)	50
Component B **Description of each element**	**Element weighting** **(as % of component)**
1. Case study poster presentation	40
2. Case study oral presentation	40
3. Short contextual review	20

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.