Prifysgol Wrecsam
Wrexham University

Module specification

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Module Code	PAR501
Module Title	Applied Life Sciences
Level	5
Credit value	20
Faculty	Faculty of Social and Life Sciences
HECoS Code	100749
Cost Code	APA
Pre-requisite module	N/A

Programmes in which module to be offered

Programme title	Core/Optional/Standalone
BSc (Hons) Paramedic Science	Core

Breakdown of module hours

Learning and teaching hours	30 hrs
Placement tutor support hours	0 hrs
Supervised learning hours e.g. practical classes, workshops	0 hrs
Project supervision hours	0 hrs
Active learning and teaching hours total	**30** hrs
Placement hours	0 hrs
Guided independent study hours	170 hrs
Module duration (Total hours)	200 hrs

Module aims

To reflect on practice placement experiences and explore how diseases, illnesses, injuries, and well-being affect anatomy and physiology across the lifespan and the impact they have on normal body function.

Module Learning Outcomes

At the end of this module, students will be able to:

1	Apply knowledge of anatomy and physiology to common illnesses, diseases, injuries, and well-being conditions across the life span
2	Differentiate between different pathophysiological changes for common illnesses, diseases, injuries, and well-being conditions
3	Interpret clinical changes arising from commonly encountered pathophysiological conditions
4	Determine the impact of pathophysiological changes to someone's health

Assessment

Indicative Assessment Tasks:
This section outlines the type of assessment task the student will be expected to complete as part of the module. More details will be made available in the relevant academic year module handbook.

Formative Assessment

The module's formative assessment and feedback opportunities will be outlined in the assessment strategy in the module handbook. Students will undertake formative assessments within the first four to six weeks of the module.

Student's learning will be observed during the teaching of the module with ongoing feedback during topical group discussion and case studies to improve their understanding. The predetermined questions on anatomy, physiology, and pathophysiology used for the summative assessment will be used throughout the teaching and learning so that students can consider the biological processes occurring for each condition discussed during sessions. Worksheets and mini quizzes will be used during and after sessions to allow students to consolidate their knowledge and identify topic areas for further study.

Summative Assessment

The summative assessment for this module will be written coursework based on clinical case studies. Students will be provided with two case studies of service users with clinical presentations of conditions encountered in the out-of-hospital setting. These can be either medical, trauma or wellbeing based and across the age ranges. Along with these case studies will be pre-determined questions that will need to be addressed considering the relevant anatomy, physiology, and pathophysiology prosses relating to the case studies.

There is one summative assessment for this module which is the combined coursework of the two case studies (3000 words). This is a core module and therefore an overall pass of the module is required for progression within the course. You will need to achieve an overall grade of 40% or above to receive a passing mark for the coursework. The coursework has a

100% weighting and therefore the mark you achieve for this will be the overall grade for the module.

Assessment number	Learning Outcomes to be met	Type of assessment	Duration/Word Count	Weighting (%)	Alternative assessment, if applicable
1	1 - 4	Coursework	3000 words	100%	N/A

Derogations

- Compensation of marginally failed modules is not permitted
- Condonement of failed modules is not permitted

Learning and Teaching Strategies

Using the spiral curriculum approach, this module follows and further develops the foundation knowledge gained from the *Introduction to life sciences module*. With an understanding of the basic principles of science, anatomy, and physiology, you will gain further awareness of the pathophysiology of conditions encountered in the out-of-hospital setting and the effect they have on the normal functions of the human body. Students will reflect on service user conditions from their clinical placements and use case studies to review the relevant anatomy and physiology and then discuss the pathological processes involved. We will also investigate how we can differentiate between different healthcare conditions by the signs and symptoms observed and discuss the impact these conditions may have on the person experiencing them.

A blended learning approach, a balance between classroom elements and digitally enabled (online) activity, will be used during the delivery of this module. Face-to-face sessions and online educational materials, using the University's Virtual Learning Environment (VLE) – Moodle, will be combined to allow more flexibility over the time, place, and pace of your study.

There will be directed pre-session materials that will prepare you for the synchronous learning that takes place in real time in the form of seminars or workshops. Post-session learning materials, such as additional reading, worksheets, and quizzes, will be provided to amalgamate and further your understanding of the topics covered. Learners have a responsibility to manage and engage with the asynchronous learning course materials (video clips, recorded lectures, forums, readings, and quizzes) available on Moodle.

Face-to-face sessions – or synchronous learning - will allow students to develop their understanding of a topic through further discussions and tutor-led problem-based tasks and other learning activities. Teaching will be delivered through seminar style sessions incorporating group and project work.

Welsh Elements

Students are entitled to submit assessments in the medium of Welsh.

Indicative Syllabus Outline

- Principles of physical science
- Normal anatomy of the major body systems across the lifespan
- Normal Physiology of the major body systems across the lifespan
- Impact of illnesses, diseases, and injuries to homeostasis
- Pathophysiology of illnesses, diseases, injuries, and well-being
- Impact of pharmacology to physiology and pathophysiology
- Human development and the influence of illnesses, diseases, injuries, and well-being
- Well-being and psychopathology
- Impact of illnesses, diseases, and injuries on a service user
- Interpretation of clinical data and observations
- Impact of treatment and interventions on pathophysiology
- Pathophysiology of the major body systems:
    - Cells, genetics, tissues, and blood
    - Respiratory system
    - Cardiovascular system
    - Nervous system
    - Digestive system
    - Urinary system
    - Lymphatic system
    - Endocrine system
    - Integumentary system
    - Musculoskeletal system
    - Reproductive system
    - Immune system

Indicative Bibliography

Please note the essential reads and other indicative reading are subject to annual review and update.

Essential Reads:

Seifter, Julian L. & David E Sloane & Elisa Walsh. *Integrated Physiology and Pathophysiology*, 1st Edition. Elsevier. 2021

Other indicative reading:

Pilbery, R. *Paramedic Case Studies – 35 Prehospital Emergencies Explored and Explained*. Bridgwater, Class Professional Publishing. 2021

Toy, Eugene C. et al. *Emergency Medicine*. Fourth edition. New York: McGraw-Hill Medical, 2017

Waugh, Anne, Allison Grant, and Janet S. Ross. *Ross and Wilson Anatomy & Physiology in Health and Illness.* Thirteenth edition. Amsterdam: Elsevier, 2018.

Willis, Sam, Ian Peate, and Rod Hill. *Clinical Cases in Paramedicine*. Hoboken, NJ: Wiley-Blackwell, 2020

Administrative Information

For office use only	
Initial approval date	31/8/22
With effect from date	September 22
Date and details of revision	August 2025 – AM0 change of details to Summative Assessment from 4 to 2 case studies
Version number	2