

Module specification

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Refer to guidance notes for completion of each section of the specification.

Module Code	SPT628
Module Title	Physiology in Extreme Environments
Level	6
Credit value	20
Faculty	FSLS
HECoS Code	100433
Cost Code	GASP

Programmes in which module to be offered

Programme title	Is the module core or option for this programme
BSc (Hons) Applied Sport and Exercise Sciences	Option
BSc (Hons) Football Coaching and the Performance Specialist	Option

Pre-requisites

N/A

Breakdown of module hours

Learning and teaching hours	16 hrs
Placement tutor support	0 hrs
Supervised learning e.g. practical classes, workshops	8 hrs
Project supervision (level 6 projects and dissertation modules only)	0 hrs
Total active learning and teaching hours	24 hrs
Placement / work based learning	0 hrs
Guided independent study	176 hrs
Module duration (total hours)	200 hrs

For office use only	
Initial approval date	08/12/2021
With effect from date	01/09/2022
Date and details of revision	
Version number	1

Module aims

Introduce students to the physiological responses to exposure in extreme environments.
 To evaluate various adaptation strategies to preparing to exercise in extreme environments.
 To build and extend knowledge from level 5 in training prescription.
 To utilize skills in conducting physiological tests in an applied scenario.

Module Learning Outcomes - at the end of this module, students will be able to:

1	Critically evaluate the acute and/or chronic effects of exercise undertaken in challenging environments.
2	Critically evaluate the use of adaptation strategies used in preparation of undertaking exercise in challenging environments.
3	Conduct physiological tests with a client preparing to undertake exercise in a challenging environment.
4	Evaluate physiological data test data and apply it in a working environment.

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.

1. Students will complete a practical exam, undertaking a physiological test with a client based on case study information. They are then to provide a report outlining the key adaptation strategies of exercising in extreme environments

Assessment number	Learning Outcomes to be met	Type of assessment	Weighting (%)
1	1 - 4	Coursework	100

Derogations

N/A

Learning and Teaching Strategies

Lectures, seminars, practical laboratory workshops.

Indicative Syllabus Outline

Altitude
Thermoregulation
Hydration and fluid loss
Overtraining
Biological rhythms
Ultra endurance events
Physiological testing
Reliability and validity

Indicative Bibliography:

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

Essential Reads

Gunga, H-A. *Human physiology in extreme environments*. (2014). Amsterdam: Academic Press.

Périard, J. D. (2018). *Heat Stress in Sport and Exercise: Thermophysiology of Health and Performance*. Switzerland: Springer, Cham.

Other indicative reading

Beltz, N. M. Gibson, A. L. Janot, J. M. Kravitz, L. Mermier, C. M. Dalleck, L. C. (2016). Graded Exercise Testing Protocols for the Determination of VO₂max: Historical Perspectives, Progress, and Future Considerations. *Journal of Sports Medicine*, doi:10.1155/2016/3968393.

Lee, A. Galvez, J. C. (2012). Jet Lag in Athletes. *Sports Health*, 4, (3), pp. 211-216.

Noakes, T. D. St Claire Gibson, A. Lambert, E. V. (2006). From catastrophe to complexity: a novel model of integrative central neural regulation of effort and fatigue during exercise in humans: summary and conclusions. *British Journal of Sports Medicine*, 39, pp. 120-124.

Reilly, T. Waterhouse, J. (2004). *Sport Exercise and Environmental Physiology*. 1ST ed. London: Churchill Livingstone.

Winter, E. M. Jones, A. M. Davison, R. Bromley, P. D. Mercer, T. H. (2007). *Sport and Exercise Physiology Testing Guidelines: The British Association for Sport and Exercise Science Guide*. Volume 2: Exercise and Clinical Testing. Oxon: Routledge.

Wyatt, F. B. (2014). Physiological Responses to Altitude: A Brief Review. *Journal of Exercise Physiology*, 17, (4), pp. 90-96.

Employability skills – the Glyndŵr Graduate

Each module and programme is designed to cover core Glyndŵr Graduate Attributes with the aim that each Graduate will leave Glyndŵr having achieved key employability skills as part of their study. The following attributes will be covered within this module either through the content or as part of the assessment. The programme is designed to cover all attributes and each module may cover different areas.

Core Attributes

Engaged
Enterprising
Creative
Ethical

Key Attitudes

Commitment
Curiosity
Resilience
Confidence
Adaptability

Practical Skillsets

Digital Fluency
Organisation
Leadership and Team working
Critical Thinking
Emotional Intelligence
Communication