

Module specification

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

Module Code	SPT524
Module Title	Physiological Responses to Training and Testing
Level	5
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) Football Coaching and the Performance Specialist	Core
BSc (Hons) Applied Sport and Exercise Sciences	Core
BSc (Hons) Sport Injury and Rehabilitation (registered SIR502)	Core

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	14 hrs
Project supervision (level 6 projects and dissertation modules only)	0 hrs
Total active learning and teaching hours	30 hrs
Placement / work-based learning	0 hrs
Guided independent study	170 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

Develop practical experience of physiological testing techniques and become fully aware of the safety issues relating to physiological monitoring and prescription of training.

Examine, quantify and analyse the body's acute response to sport and exercise and chronic adaptation to training, with reference to the various systems of the body (e.g. cardiovascular, respiratory, metabolic, musculoskeletal and energy systems).

Demonstrate how physiological knowledge can be used to enhance performance.

Examine the impact of various ergogenic aids on performance outcomes.

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

1	To describe and evaluate the various physiological adaptations associated with different training methods.
2	To be able to plan/design and complete a physiological experiment and produce a coherent physiological report on the results.
3	To be able to evaluate and analyse physiological test data using various statistical analysis and procedures.
4	To explain and describe the physiological response to various tests and exposure to ergogenic aids.

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 design their own physiological experiment to be conducted within their seminar classes exploring the effect of an ergogenic aid on performance of which they will produce a report outlining the results

2: Students will complete a 2-hour exam evaluating and describing the various physiological adaptations (muscular, cardiovascular, metabolic) associated with their chosen method of training (endurance, resistance, interval) and determine the principles of training within that particular method.

Assessment number	Learning Outcomes to be met	Type of assessment	Weighting (%)
1	2 - 4	Written Assignment	50
2	1	Examination	50

Derogations

BSc (Hons) Applied Sport and Exercise:

Applied Sport and Exercise Sciences students must pass at 40% both elements of assessment.

Learning and Teaching Strategies

Lectures, practical seminars and workshops.

Indicative Syllabus Outline

Principles of training
 Neuromuscular/muscular skeletal adaptations to strength training
 Body composition
 Cardiovascular adaptations to endurance training
 Metabolic adaptations to exercise
 VO₂max testing
 Lactate threshold testing
 Blood sampling
 Statistical analysis
 Ergogenic aids

Indicative Bibliography:

Please note the essential reads and other indicative reading are subject to annual review and update. Please *ensure correct referencing format is being followed as per University referencing guide*.

Essential Reads

McArdle, W. D. Katch, F. I. and Katch, V. L. (2015). *Exercise Physiology: Energy, Nutrition & Human Performance*. 8th ed. Philadelphia: Williams and Wilkins.

Whyte, G. P. (2006). *The Physiology of Training*. Edinburgh ; New York : Churchill Livingstone/Elsevier

Other indicative reading

Bindera, R. K. Wonisch, M. Corra, U. Cohen-Solal, A. Vanhees, L. Saner, H. Jean-Paul Schmid, J-P. (2008). 'Methodological approach to the first and second lactate threshold in incremental cardiopulmonary exercise testing. *European Journal of Cardiovascular Rehabilitation and Prevention*, Vol.15, No.6, pp. 726-34.

Hackney, A. C. (2019). 'Molecular and Physiological Adaptations to Endurance Training: Scientific Basics and Practical Applications' in Schumann, M. and Ronnestad, B.R. (eds.), *Concurrent Aerobic and Strength Training*. Cham: Springer.

Housh, T. J. Housh, D. J. deVries, H. A. (2016). *Applied Sport and Exercise Physiology With Labs*. 4TH ed. London: Routledge.

Malcnnis, M. J. Gibala, M. J. (2016). 'Physiological adaptations to interval training and the role of exercise intensity'. *The Journal of Physiology*, Vol.595, No. 9, pp.2915-2930.

Tschakert, G. Hofmann, P. (2013). 'High Intensity Interval Training: Methodological and Physiological Aspects'. *International Journal of Sports Physiology and Performance*, Vol 8, No. 6, pp.600-610.

Wilmore, J. H. Costill, D. L. (2004). *Physiology of Sport and Exercise*. 3rd ed. Leeds: Human Kinetics.

Wolinsky, I. Driskell, J. A. (2004). *Nutritional Ergogenic Aids*. 1st ed. Taylor and Francis.

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