Module Descriptor

Title	Physiological Adaptations to Exercise		
Session	2026/27	**Status**	Published
Code	SPOR09024	**SCQF Level**	9
Credit Points	20	**ECTS (European Credit Transfer Scheme)**	10
School	**Health and Life Sciences**		
Module Co-ordinator	Duncan Buchan		

Summary of Module

This module aims to build on the knowledge and practical skills of physiological principles covered in previous exercise physiology modules. The plasticity of the human body means that regular exercise and training leads to range of physiological adaptations that result in both health benefits as well as increased physical performance. The module will evaluate the magnitude, rate of change and typical physiological adaptations that result from a range of different exercise modes in different populations. In addition, it will explore how these adaptations might be measured and monitored as part of a training programme.

The module will take the basic principles and apply them to the typical adaptation that results from appropriate exercise.

The module will equip students with the theoretical knowledge and practical skills needed for those who wish to have a career in sports coaching, applied sport and exercise scientist.

This module will assist the student in the development of key 'I am UWS Graduate Attributes' to allow those that complete this module to be:

Universal:

Critical Thinker

Emotionally Intelligent

Collaborative

Work Ready:

Problem-solver

Motivated

Potential Leader

Successful:

Innovative

Resilient

Transformational

Module Delivery Method	On-Campus[1] ☒	Hybrid[2] ☐	Online[3] ☐	Work -Based Learning[4] ☐
Campuses for Module Delivery	☐ Ayr ☐ Dumfries	☒ Lanarkshire ☐ London ☐ Paisley	☐ Online / Distance Learning ☐ Other (specify)	

Terms for Module Delivery	Term 1	☐	Term 2	☒	Term 3	☐
Long-thin Delivery over more than one Term	Term 1 – Term 2	☐	Term 2 – Term 3	☐	Term 3 – Term 1	☐

Learning Outcomes	
L1	Discuss the potential physiological adaptations which occur as a consequence of aerobic based exercise training.
L2	Discuss the potential physiological adaptations which occur as a consequence of resistance and high intensity exercise training.
L3	Undertake laboratory based investigations to analyse, interpret and evaluate adaptations to exercise using numerical data and communicate this to an academic audience.
L4	
L5	

Employability Skills and Personal Development Planning (PDP) Skills	
SCQF Headings	**During completion of this module, there will be an opportunity to achieve core skills in:**
Knowledge and Understanding (K and U)	**SCQF 9** Demonstrate a comprehensive knowledge of the physiological adaptations to exercise training. Demonstrate a critical understanding of the factors that impact on the physiological adaptions to exercise training.
Practice: Applied Knowledge and Understanding	**SCQF 9** Using a significant range of laboratory tests to demonstrate and evaluate the physiological adaptation to exercise training.

[1] Where contact hours are synchronous/ live and take place fully on campus. Campus-based learning is focused on providing an interactive learning experience supported by a range of digitally-enabled asynchronous learning opportunities including learning materials, resources, and opportunities provided via the virtual learning environment. On-campus contact hours will be clearly articulated to students.

[2] The module includes a combination of synchronous/ live on-campus and online learning events. These will be supported by a range of digitally-enabled asynchronous learning opportunities including learning materials, resources, and opportunities provided via the virtual learning environment. On-campus and online contact hours will be clearly articulated to students.

[3] Where all learning is solely delivered by web-based or internet-based technologies and the participants can engage in all learning activities through these means. All required contact hours will be clearly articulated to students.

[4] Learning activities where the main location for the learning experience is in the workplace. All required contact hours, whether online or on campus, will be clearly articulated to students

	Designing testing strategies to monitor adaptation to exercise. Interpret results appropriately.
Generic Cognitive skills	**SCQF 9** Identifying, conceptualizing, and analysing nuances in the potential adaptations to exercise.
Communication, ICT and Numeracy Skills	**SCQF 9** Presenting or conveying, formally and informally, information about adaptations to exercise training. Using a range of ICT applications to support and enhance work at this level and adjust features to suit purpose. Interpreting, using, and evaluating a wide range of numerical and graphical data to set and achieve goals/targets.
Autonomy, Accountability and Working with Others	**SCQF 9** Exercising autonomy and initiative in practical sessions but also work as part of a team.

Prerequisites	**Module Code**	**Module Title**
	Other	
Co-requisites	**Module Code**	**Module Title**

Learning and Teaching	
In line with current learning and teaching principles, a 20-credit module includes 200 learning hours, normally including a minimum of 36 contact hours and maximum of 48 contact hours. The teaching and learning approach will be a combination of in-person delivery supported with practical laboratory experience. The core material will be delivered primarily via synchronous delivery. Practical sessions will be specifically designed to bring to life the synchronous material while also providing valuable practical skills. This will also give the students an opportunity to work together in groups developing important communication and collaboration skills.	
Learning Activities During completion of this module, the learning activities undertaken to achieve the module learning outcomes are stated below:	**Student Learning Hours** (Note: Learning hours include both contact hours and hours spent on other learning activities)
Lecture / Core Content Delivery	12
Laboratory / Practical Demonstration / Workshop	24
Independent Study	164
n/a	
n/a	
n/a	
TOTAL	200

Indicative Resources
The following materials form essential underpinning for the module content and ultimately for the learning outcomes: Laursen, Paul and Buchheit, Martin. 2019. Science and application of high-intensity interval training : solutions to the programming puzzle [electronic book]. Human Kinetics, USA. McArdle, William D. 2023. Exercise physiology : nutrition, energy and human performance. Lippincott, Williams & Wilkins, USA. Powers, Scott. 2021. Exercise Physiology (electronic book): Theory and application to fitness and performance. McGraw-Hill, USA.
(N.B. Although reading lists should include current publications, students are advised (particularly for material marked with an asterisk*) to wait until the start of session for confirmation of the most up-to-date material)

Attendance and Engagement Requirements
In line with the Student Attendance and Engagement Procedure, Students are academically engaged if they are attending and participating in all timetabled programme activities including on-campus and online teaching sessions, asynchronous online learning activities, placement, work-based elements, course-related learning resources, and complete assessments and submit these on time. **For the purposes of this module, academic engagement equates to the following:** 100% Attendance at all module events and consistent weekly engagement with online materials.

Equality and Diversity
The University's Equality, Diversity and Human Rights Procedure can be accessed at the following link: UWS Equality, Diversity and Human Rights Code. In line with current legislation (Equality Act, 2010) and the UWS Equality, Diversity, and Human Rights Code, our modules are accessible and inclusive, with reasonable adjustment for different needs where appropriate. Module materials comply with University guidance on inclusive learning and teaching, and specialist assistive equipment, support provision and adjustment to assessment practice will be made in accordance with UWS policy and regulations. Where modules require practical learning or assessment, alternative formats and/or roles will be provided for students with physical disabilities which impact participation.
(N.B. Every effort will be made by the University to accommodate any equality and diversity issues brought to the attention of the School)

Supplemental Information

Divisional Programme Board	**Sport Exercise Health**
Overall Assessment Results	☐ **Pass / Fail** ☒ **Graded**
Module Eligible for Compensation	☒ **Yes** ☐ **No** **If this module is eligible for compensation, there may be cases where compensation is not permitted due to programme accreditation requirements. Please check the associated programme specification for details.**
School Assessment Board	Sport, Exercise & Health

Moderator	Catarina Ramos
External Examiner	A Tocknell
Accreditation Details	
Module Appears in CPD catalogue	☐ **Yes** ☒ **No**
Changes / Version Number	2

Assessment (also refer to Assessment Outcomes Grids below)
Assessment 1
Class test (written).
Assessment 2
Presentation.
Assessment 3
(N.B. (i) Assessment Outcomes Grids for the module (one for each component) can be found below which clearly demonstrate how the learning outcomes of the module will be assessed. (ii) An indicative schedule listing approximate times within the academic calendar when assessment is likely to feature will be provided within the Student Module Handbook.)

Component 1							
Assessment Type	**LO1**	**LO2**	**LO3**	**LO4**	**LO5**	**Weighting of Assessment Element (%)**	**Timetabled Contact Hours**
Class test (written)	☒	☒	☐	☐	☐	50	1

Component 2							
Assessment Type	**LO1**	**LO2**	**LO3**	**LO4**	**LO5**	**Weighting of Assessment Element (%)**	**Timetabled Contact Hours**
Presentation	☐	☐	☒	☐	☐	50	0

Component 3							
Assessment Type	**LO1**	**LO2**	**LO3**	**LO4**	**LO5**	**Weighting of Assessment Element (%)**	**Timetabled Contact Hours**
	☐	☐	☐	☐	☐		
Combined total for all components						100%	1 hours

Change Control

What	**When**	**Who**
Hours uplift	March 2026	Duncan Buchan
