



Module Descriptor

Title	Physiological Adaptations to Exercise		
Session	2024/25	Status	
Code	SPOR09024	SCQF Level	9
Credit Points	20	ECTS (European Credit Transfer Scheme)	
School	Health and Life Sciences		
Module Co-ordinator	D Buchan		
Summary of Module			
<p>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.</p> <p>The module will take the basic principles and apply them to the typical adaptation that results from appropriate exercise.</p> <p>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.</p> <p>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:</p> <p>Universal:</p> <p>Critical Thinker</p> <p>Emotionally Intelligent</p> <p>Collaborative</p> <p>Work Ready:</p> <p>Problem-solver</p> <p>Motivated</p> <p>Potential Leader</p> <p>Successful:</p> <p>Innovative</p> <p>Resilient</p> <p>Transformational</p>			

Module Delivery Method	On-Campus¹ <input type="checkbox"/>	Hybrid² <input checked="" type="checkbox"/>	Online³ <input type="checkbox"/>	Work -Based Learning⁴ <input type="checkbox"/>
Campuses for Module Delivery	<input type="checkbox"/> Ayr <input type="checkbox"/> Dumfries	<input checked="" type="checkbox"/> Lanarkshire <input type="checkbox"/> London <input type="checkbox"/> Paisley	<input type="checkbox"/> Online / Distance Learning <input type="checkbox"/> Other (specify)	
Terms for Module Delivery	Term 1 <input type="checkbox"/>	Term 2 <input checked="" type="checkbox"/>	Term 3 <input type="checkbox"/>	
Long-thin Delivery over more than one Term	Term 1 – Term 2 <input type="checkbox"/>	Term 2 – Term 3 <input type="checkbox"/>	Term 3 – Term 1 <input type="checkbox"/>	

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 adaptations 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 flexible hybrid model of delivery supported with both tutorials and practical laboratory experience. The core material will be delivered primarily via asynchronous delivery with dedicated tutorial sessions to compliment this material. Practical sessions will be specifically designed to bring to life the asynchronous 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	Student Learning Hours
During completion of this module, the learning activities undertaken to achieve the module learning outcomes are stated below:	(Note: Learning hours include both contact hours and hours spent on other learning activities)
Tutorial / Synchronous Support Activity	12
Laboratory / Practical Demonstration / Workshop	12
Asynchronous Class Activity	12
Independent Study	164
Please select	
Please select	
TOTAL	200

Indicative Resources

The following materials form essential underpinning for the module content and ultimately for the learning outcomes:

Bouchard, Claude. 2015. *Molecular and Cellular Regulation of Adaptation to Exercise*. Academic Press.

Hughes, David C., Stian Ellefsen, and Keith Baar. 2018. "Adaptations to Endurance and Strength Training." *Cold Spring Harbor Perspectives in Medicine* 8 (6).
<https://doi.org/10.1101/cshperspect.a029769>.

McGee, Sean L., and Mark Hargreaves. 2020. "Exercise Adaptations: Molecular Mechanisms and Potential Targets for Therapeutic Benefit." *Nature Reviews. Endocrinology* 16 (9): 495–505.

Viru, A. (2017). *Adaptation in Sports Training*. United Kingdom: Taylor & Francis.

McArdle, W.D., Katch, F.I and Katch, V.L., (2015). *Essentials of Exercise Physiology*. 5th International Edition. Lippincott, Williams and Wilkins*. ISBN: 978-1496302090.

(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 regularly attending and participating in timetabled on-campus and online teaching sessions, asynchronous online learning activities, course-related learning resources, and complete assessments and submit these on time.

For the purposes of this module, academic engagement equates to the following:

The university is committed to providing a supportive learning environment that actively facilitates student success. In this module, there is a high degree of student-led flexibility. You are academically engaged if you are regularly engaged with scheduled live sessions on-campus and online, including engaging with online learning activities in your own time, course-related learning resources, and with timely completion and submission of assessments.

Whilst we understand that there may be times when conflicting priorities make participation challenging, for you to gain the most from this module it is recommended that you participate in all scheduled live classes and complete your self-directed learning activities in a timely manner.

It may be difficult to pass the assessment associated with this module if you are not regularly engaging with the module work and live classes. We may reach out to check how things are going and offer support if we observe that you have not been attending sessions or completing online activities.

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 and/or laboratory based learning or assessment required to meet accrediting body requirements the University will make reasonable adjustment such as adjustable height benches or assistance of a 'buddy' or helper.

(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	<input type="checkbox"/> Pass / Fail <input checked="" type="checkbox"/> Graded
Module Eligible for Compensation	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> 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 and Exercise
Moderator	R Kimble
External Examiner	A Tocknell
Accreditation Details	N/A
Module Appears in CPD catalogue	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Changes / Version Number	

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)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	50	

Component 2

Assessment Type	LO1	LO2	LO3	LO4	LO5	Weighting of Assessment Element (%)	Timetabled Contact Hours
Presentation	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	50	

Component 3							
Assessment Type	LO1	LO2	LO3	LO4	LO5	Weighting of Assessment Element (%)	Timetabled Contact Hours
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Combined total for all components						100%	hours

Change Control

What	When	Who