Module Definition Form (MDF)

Module code: MOD010867	**Version:** 1 **Date Amended:** 07/Mar/2025

1. Module Title
Exercise Physiology

2a. Module Leader
Null

2b. School
School of Psychology, Sport and Sensory Sciences

2c. Faculty
Faculty of Science and Engineering

3a. Level
5

3b. Module Type
Standard (fine graded)

4a. Credits
15

4b. Study Hours
150

5. Restrictions

Type	Module Code	Module Name	Condition
Pre-requisites:	None		
Co-requisites:	None		
Exclusions:	None		
Courses to which this module is restricted:			

LEARNING, TEACHING AND ASSESSMENT INFORMATION

6a. Module Description

Exercise physiology is to understand the way in which the body's systems respond and adapt to exercise and training. This module focuses on acute respiratory and cardiovascular responses to exercise and how these are regulated by the nervous and endocrine systems. The module also covers the long-term, chronic responses to training of the cardiovascular, pulmonary and muscular systems and considers how each system contributes to limitations of human performance.

Within this module, you'll develop an understanding of the scientific principles behind physical training and the physiological factors affecting athletic performance. Emphasis will be placed on the physiological responses to exercise as well as the adaptations that occur because of long-term physical training. You'll look in detail at responses of the individual body systems as well as the athlete as a whole. You'll cover the methods of both training and performance testing and discuss the efficacy of specific training techniques. You'll also gain insight into the recent advances and techniques in the preparation for performance regarding the literature.

6b. Outline Content

Indicative content will include:

- Define exercise physiology
- Understand the history and development of exercise physiology
- Explain the importance of exercise physiology
- Describe different types of exercise
- Understand the implications of different types of exercise on the physiology of the cardiovascular, respiratory, muscular, nervous and endocrine systems.
- Understand the anatomical basics of the cardiovascular, respiratory, muscular, nervous and endocrine systems.
- Understand the physiology of the cardiovascular, respiratory, muscular, nervous and endocrine systems at rest.
- Discuss physiology factors limiting human performance
- Describe the changes in the cardiovascular system in response to a single bout of exercise and a training programme.
- Describe the changes in the respiratory system in response to a single bout of exercise and a training programme.
- Describe the changes in the muscular system in response to a single bout of exercise and a training programme.
- Describe how exercise capacity can be measured
- Describe how oxygen consumption is measured and discuss methods used to estimate energy expenditure and $\dot{V}O_{2peak}$.
- Describe nervous and endocrine control of the different systems during a single exercise bout.
- Describe nervous and endocrine control of the different systems responses to training.
- Explain how homeostasis is maintained and then modified during exercise and adaptation following chronic training.

6c. Key Texts/Literature

The reading list to support this module is available at: https://readinglists.aru.ac.uk/

6d. Specialist Learning Resources

n/a

7. Learning Outcomes (threshold standards)		
No.	**Type**	**On successful completion of this module the student will be expected to be able to:**
1	Knowledge and Understanding	Describe the structure and function of the cardiovascular, pulmonary, muscular and endocrine systems, with specific relevance to exercise
2	Knowledge and Understanding	Explain the acute exercise responses of the cardiovascular, pulmonary and muscular systems respond to exercise and adapt to training
3	Knowledge and Understanding	Evaluate the roles of the cardiovascular, pulmonary and muscular systems in the limitation of human exercise performance
4	Intellectual, practical, affective and transferrable skills	Describe the chronic response of the cardiovascular, pulmonary and muscular systems to exercise training and explain how the nervous and endocrine systems co-ordinate the acute and chronic responses to exercise

8a. Module Occurrence to which this MDF Refers				
Year	**Occurrence**	**Period**	**Location**	**Mode of Delivery**
2026/7	ZZF	Template For Face To Face Learning Delivery		Face to Face

8b. Learning Activities for the above Module Occurrence			
Learning Activities	**Hours**	**Learning Outcomes**	**Details of Duration, frequency and other comments**
Lectures	30	1-4	3-hour lecture per week
Other teacher managed learning	10	1-4	Individual and small group seminars, and peer discussion/collaboration opportunities
Student managed learning	110	1-4	Additional reading, tasks, synthesis and assessment preparation
TOTAL:	150		

9. Assessment for the above Module Occurrence					
Assessment No.	**Assessment Method**	**Learning Outcomes**	**Weighting (%)**	**Fine Grade or Pass/Fail**	**Qualifying Mark (%)**
010	Coursework	1-4	100 (%)	Fine Grade	30 (%)
3000-word scientific paper- Pilot study or exemplar data related to sports performance					

In order to pass this module, students are required to achieve an overall mark of 40% (for modules at levels 3, 4, 5 and 6) or 50% (for modules at level 7*).

In addition, students are required to:
(a) achieve the qualifying mark for each element of fine graded assessment as specified above
(b) pass any pass/fail elements

[* the pass mark of 50% applies for all module occurrences from the academic year 2024/25 – see Section 3a of this MDF to check the level of the module and Section 8a of this MDF to check the academic year]