

Module Title:	Exercise Physiology 1
Language of Instruction:	English
Credits:	5
NFQ Level:	6
Module Delivered In	4 programme(s)
Teaching & Learning Strategies:	The module includes both large-group and small-group classes, alongside tutor-directed and self-directed independent student learning. The large group lecture classes will include interactive learning activities and formative assessment tasks such as discussions, quizzes, and case studies. The small group practical classes will provide students with the opportunity to develop their hands-on skills in physiological measurement, along with opportunities to reflect on and discuss the application of theory to practice. Independent student learning time will be used for preparation for classes, review of class materials and activities, and work associated with assessment tasks
Module Aim:	To provide students with an understanding of the operation of the muscular system and the systems of energy production in relation to physical exercise and performance
Learning Outcomes	
<i>On successful completion of this module the learner should be able to:</i>	
LO1	Describe and illustrate the micro anatomy of human skeletal muscle and explain the process of muscular contraction and analyse the factors affecting the generation of force and apply the principles of training and the development of strength
LO2	Explain the processes involved in energy production for physical activity, synthesise and apply the bioenergetic processes to exercise training principles and the control body composition
LO3	Accurately measure, record and interpret the data collected in laboratory measures of exercise and demonstrate an ability to take laboratory numerical data and integrate it into a structured standard laboratory report and construct scientific essays.
Pre-requisite learning	
Module Recommendations	
<i>This is prior learning (or a practical skill) that is recommended before enrolment in this module.</i>	
No recommendations listed	
Incompatible Modules	
<i>These are modules which have learning outcomes that are too similar to the learning outcomes of this module.</i>	
No incompatible modules listed	
Co-requisite Modules	
No Co-requisite modules listed	
Requirements	
<i>This is prior learning (or a practical skill) that is mandatory before enrolment in this module is allowed.</i>	
No requirements listed	

Module Content & Assessment

Indicative Content

Anatomy of the muscle and muscular contraction

Gross- and micro-anatomy; sliding filament theory; muscle fibre types

Factors affecting the development of force

Architectural, neural, and mechanical factors affecting force and velocity

Factors affecting maximal endurance capacity

VO₂max & Lactate Threshold physiology, principles and concepts

Physiological adaptations to exercise

General Adaptation Syndrome, EIMD, Neuromuscular and morphological adaptations to training

Energy for Cellular Activity & Bioenergetics

PCR system, glycolytic system, oxidative system

Measuring energy expenditure

Energy expenditure at rest and during exercise; laboratory measurement and estimation; EPOC

Body composition, weight, obesity and exercise

Adipose tissue physiology; Measuring body composition; energy balance

Practical

The practical element will include laboratory testing of physiological variables during rest, submaximal, and maximal exercise testing

Assessment Breakdown	%
Continuous Assessment	10.00%
Practical	40.00%
End of Module Formal Examination	50.00%

Special Regulation

Students must achieve a minimum grade (35%) in both the practical/CA and final examination

Continuous Assessment

Assessment Type	Assessment Description	Outcome addressed	% of total	Assessment Date
Other	The Mid term assessment assessment strategy may incorporate MCQ's, essays, presentations, reflective logs, case studies and written reports.	1	10.00	n/a

No Project

Practical

Assessment Type	Assessment Description	Outcome addressed	% of total	Assessment Date
Practical/Skills Evaluation	The practical assessment strategy may incorporate practical skills assessments, presentations and/or written laboratory reports	3	40.00	Sem 1 End

End of Module Formal Examination

Assessment Type	Assessment Description	Outcome addressed	% of total	Assessment Date
Formal Exam	No Description	1,2	50.00	End-of-Semester

SETU Carlow Campus reserves the right to alter the nature and timings of assessment

Module Workload

Workload: Full Time		
<i>Workload Type</i>	<i>Frequency</i>	<i>Average Weekly Learner Workload</i>
Lecture	12 Weeks per Stage	3.00
Laboratory	12 Weeks per Stage	2.00
Estimated Learner Hours	15 Weeks per Stage	4.33
Total Hours		125.00

Module Delivered In

Programme Code	Programme	Semester	Delivery
CW_SASPS_B	Bachelor of Science (Honours) in Sport and Exercise Science	2	Mandatory
CW_SASRA_B	Bachelor of Science (Honours) in Sports Rehabilitation and Athletic Therapy	2	Mandatory
CW_SASAC_B	Bachelor of Science (Honours) in Strength and Conditioning	2	Mandatory
CW_SAPHS_C	Higher Certificate in Science in Physiology and Health Science	2	Mandatory