

Component Specification

Sports Anatomy and Physiology

NFQ Level 5

5N4648

1. Component Details

Title	Sports Anatomy and Physiology
Teideal as Gaeilge	Anatamaíocht agus Fiseolaíocht Spóirt
Award Class	Minor
Code	5N4648
Level	5
Credit Value	15
Purpose	The purpose of this award is to equip the learner with the knowledge, skill and competence in the structure and functions of the human body to enable the learner to understand the contribution made by the body's systems to participation in sports and exercise.
Learning Outcomes	<p>Learners will be able to:</p> <ol style="list-style-type: none">1 Differentiate between cells, tissues, organs and systems2 Classify tissues into the four main groups; epithelial, connective, muscle and nervous tissue3 Identify the major types of connective tissue4 Outline the composition of bone, including the functions of the skeleton, the main bones of the appendicular and axial skeleton and the structure of a typical long bone5 Identify the major categories and functions of joints, differentiating between the types of synovial joints

- 6 Identify a range of postural defects and how they impact on sports performance and injury
- 7 Identify the three types of muscle in the body with examples of each
- 8 Identify the main skeletal muscles of the body
- 9 Show the interconnections between the skeletal and muscular systems in body movement
- 10 Describe the sliding filament theory of muscle contraction
- 11 Outline the different types of muscular contraction using sporting contexts
- 12 Identify with examples of the main actions of muscles to include flexion, extension, abduction and adduction
- 13 Outline the structure and functions of blood and its role in sports performance
- 14 Describe the function of the heart including, the structure of arteries, veins and capillaries, the cardiac cycle and the flow of blood through the main blood vessels and blood pressure
- 15 Examine the short term and long term effects of strenuous exercise on the cardiovascular system
- 16 Identify the parts of the digestive system, including its associated organs and their functions
- 17 Outline the composition of protein, fats and carbohydrate and outline the five stages of digestion
- 18 Explain how the Adenosine Triphosphate (ATP) system-fuels muscle contraction during exercise to include the three different biochemical systems; phosphagen, glycogen-lactic acid and aerobic respiration
- 19 Explain the effects of lactic acid production during anaerobic exercise
- 20 Outline the aerobic and anaerobic energy pathways that supply energy for different intensities of exercise
- 21 Describe the structure of the respiratory system
- 22 Describe the processes of inspiration and expiration including the role of muscles, blood and the nervous system

- 23 Discuss the short term and long term effects of strenuous exercise on the respiratory system
- 24 Outline how the cardio-respiratory system and aerobic performance can be positively or adversely affected to include; altitude training, blood doping, anemia, smoking
- 25 Differentiate between the Central, Peripheral and Autonomic Nervous Systems, explaining how reflex action works
- 26 Explain the role that conditioned reflex and feedback plays in acquiring skills in sport
- 27 Explain how homeostasis works
- 28 Differentiate between endocrine and exocrine glands
- 29 Explain the role of hormones in metabolic processes, including the effects of over secretion and or under secretion of insulin, thyroxine and growth hormone and the difference between a nervous system and a hormonal system
- 30 Outline the special role that adrenaline plays in sports performance
- 31 Describe the structure and functions of the skin and skins role in temperature regulation
- 32 Describe the advantages and disadvantages of vasodilation, vasoconstriction, shivering, goose pimples and sweating in the regulation of the body's temperature during exercise.

Assessment

General Information

Details of FET assessment requirements are set out in [Assessment Guidelines for Providers](#).

All FET assessment is criterion referenced. Successful achievement of the award is based on learners attaining the required standards of knowledge, skill or competence.

The techniques set out below are considered the optimum approach to assessment for this component. In exceptional circumstances providers may identify alternative assessment techniques through the provider's application for programme validation which are **reliable** and **valid** but which are more appropriate to their context.

Assessment of a number of components may be integrated across programmes for delivery, provided that the learning outcomes of each minor award are assessed.

Group or team work may form part of the assessment, provided each learner's achievement is separately assessed.

All providers are required to submit an assessment plan as part of their application for programme validation. Assessment Plans will include information relating to scheduling and integration of assessment. See current FET validation guidelines at www.qqi.ie.

Assessment Techniques

In order to demonstrate that they have reached the standards of knowledge, skill and competence identified in all the learning outcomes, learners are required to complete the assessment(s) below.

The assessor is responsible for devising assessment instruments (e.g. project and assignment briefs, examination papers), assessment criteria and mark sheets, consistent with the techniques identified below and FETAC's assessment requirements.

Programme validation will require providers to map each learning outcome to its associated assessment technique. See current FET validation guidelines at www.qqi.ie.

All learning outcomes **must** be assessed and achieved

Examination - Theory	60%
Assignment	40%

Description

Examination - Theory

An examination provides a means of assessing a learner's ability to recall and apply knowledge, skills and understanding within a set period of time and under clearly specified conditions.

A theory-based examination assesses the ability to recall, apply and understand specific theory and knowledge.

Assignment

An assignment is an exercise carried out in response to a brief with specific guidelines as to what should be included. An assignment is usually of short duration and may be carried out over a specified period of time.

Recognition of Prior Learning (RPL)	Learners may be assessed on the basis of their prior knowledge and experience. Providers must be specifically quality assured to assess learners by this means. To do so they must complete B10, see Provider's Quality Assurance Guidelines and be included on the Register of RPL approved providers. See RPL Guidelines at www.fetac.ie for further information and registration details.	
Grading	Pass	50% - 64%
	Merit	65% - 79%
	Distinction	80% - 100%
Specific Validation Requirements	There are no specific validation requirements	
Supporting Documentation	None	
Access	To access programmes leading to this award the learner should have reached the standards of knowledge, skill and competence associated with the preceding level of the National Framework of Qualifications. This may have been achieved through a formal qualification or through relevant life and work experience.	
Transfer	Successful completion of this component award enables the learner to transfer to programmes leading to other certificates where this component is a mandatory or an elective requirement.	

2. FET Award Standards

QQI award standards are determined within the National Framework of Qualifications (NFQ), <http://www.nfq-qqi.com>. QQI determines standards for the education and training awards that it makes itself and that are made by providers to whom it has delegated authority to make an award. Providers offering programmes leading to QQI awards **must** have their programme(s) validated in accordance with current validation policy (see www.qqi.ie).

Award standards are designed to be consistent with the NFQ's award classes i.e. major, special purpose, supplemental and minor awards. They are expressed in terms of **learning outcomes** i.e. concise statements of what the learner is expected to know or be able to do in order to achieve a particular award. Learning outcomes for FET awards are contained within the associated specifications:

AWARD CLASS	STANDARDS	AWARDS
Major Award	Certificate Specification	Certificate (Levels 1 to 5) Advanced Certificate (Level 6)

Supplemental Award	Supplemental Specification	Supplemental Certificate (Level 3 to 6)
Special Purpose	Specific Purpose Specification	Specific Purpose Certificate (Levels 3 to 6)
Minor Award	Component Specification	Component Certificate (Levels 1 to 6)

Award standards are thresholds, they describe standards of knowledge, skill or competence to be acquired, and where appropriate, demonstrated, by a learner before an award may be made.

Award standards will be reviewed from time to time as necessary. Minor changes may be made by the QQI executive outside the review cycle where necessary. Changes to standards are published on QQI's website. Providers with validated programmes and providers with delegated authority to make awards are responsible for monitoring relevant standards and making necessary responses to changes.

3. FET Credit

Every FET certificate and component specification includes an FET credit value (Table 1). FET credit is quantified in multiples of 5 FET credits (up to 50 hours of learner effort). Learner effort is based on the time taken by typical learners at the level of the award to achieve the learning outcomes for the award. It includes all learning time involved including: guided learning hours, self-directed learning and assessment.

Table 1: FET Credit Values

NFQ Level	Major Awards Credit Values	Default Credit Values Minor Awards	Other Permitted Minor Award Credit Values	Special Purpose and Supplemental Award Credit Value Ranges
1	20	5	10	
2	30	5	10	
3	60	10	5,20	>5 and <60
4	90	10	5,15,20	>5 and <90
5	120	15	5,10,30	>5 and <120
6	120	15	5,10,30	>5 and <120

Guide to Level

Learning outcomes at this level include a broad range of skills that require some theoretical understanding. The outcomes may relate to engaging in a specific activity, with the capacity to use the instruments and techniques relating to an occupation. They are associated with work being undertaken independently, subject to general direction.

Strand	Sub-strand	Nature of learning
Knowledge	Breadth	Broad range of knowledge
	Kind	Some theoretical concepts and abstract thinking, with significant depth in some areas.
	Range	Demonstrate a broad range of specialised skills and tools

Know How & Skill	Selectivity	Evaluate and use information to plan and develop investigative strategies and to determine solutions to varied unfamiliar problems
Competence	Context	Act in a range of varied and specific contexts, taking responsibility for the nature and quality of outputs; identify and apply skill and knowledge to a wide variety of contexts
	Role	Exercise some initiative and independence in carrying out defined activities; join and function within multiple, complex and heterogeneous groups
	Learning to Learn	Learn to take responsibility for own learning within a managed environment
	Insight	Assume full responsibility for consistency of self- understanding and behaviour

Extract from 'Determinations for the Outline National Framework of Qualifications': NQAI