Sport Science - Foundation

LEVEL 2	15 TCE CREDIT POINTS
COURSE CODE	SPT215113
COURSE SPAN	2013 — 2017
READING AND WRITING STANDARD	NO
MATHEMATICS STANDARD	NO
COMPUTERS AND INTERNET STANDARD	NO

This course was delivered in 2017. Use A-Z Courses to find the current version (if available).

Sport Science - Foundation encompasses both theoretical and practical based learning that promotes immediate, as well as life long, health benefits to learners

Learners will acquire an understanding of human functioning and physical activity, skills in communication and investigation and the ability to apply theory to practical situations. This course provides the learners with an introduction to the components of fitness, body systems and the science of physical performance creating a pathway into Sport Science Level 3. It also informs the learners of the values of physical activity and provides an overview of the responsibilities people can adopt at different stages in their lives.

Course Description

The aim of Sport Science – Foundation Level 2 is for learners to develop an understanding of the importance of physical activity, sport, recreation and fitness in their lives as well as an understanding of how the body functions and the factors that influence sporting performance. This course provides opportunities to apply theory in a practical context through participating in, and organising sporting events, as well as participating in practical laboratory activities.

This course is designed to encourage and support learners in their involvement in sport as participants, administrators, coaches, umpires or in associated support roles. Learners will develop knowledge and skills which will assist them to help others participate in sports and recreational activities. The course will also provide learners with knowledge and understanding of the anatomy and physiology of the human body, fitness and performance factors including sport psychology.

This course also develops learners' research skills as they are required to conduct one individual Unit of Inquiry that allows for some scope in learning about sport in society and associated current issues.

As this course provides the students with such knowledge and skills it is strongly recommended as being used as an introductory course to Sport Science Level 3.

Rationale

Sport Science – Foundation Level 2 encompasses both theoretical and practical based learning that promotes immediate, as well as life long, health benefits to learners. Learners will acquire an understanding of human functioning and physical activity, skills in communication and investigation and the ability to apply theory to practical situations. This course provides learners with an introduction to the components of fitness, body systems and the science of physical performance creating a pathway into Sport Science Level 3. It also informs learners of the values of physical activity and provides an overview of the responsibilities people can adopt at different stages in their lives.

Learning Outcomes

On successful completion of this course, learners will be able to:

1. understand the basic theory of exercise physiology, skill acquisition and sport psychology and the ability to apply this knowledge to a number of sporting and recreational contexts
2. plan, organise and conduct physical activities
3. facilitate coaching, officiating and administrative roles
4. understand rules, regulations and safety considerations in a sporting context
5. communicate ideas and information in a variety of forms
6. identify and utilise practical tasks that encourage leadership
7. apply their learning to sport and recreational activities, and laboratory-based activities
8. work independently, and constructively with others
9. appreciate the significance of participation and involvement in physical activity
10. undertake a research activity.

Access

Teamwork and interaction with others is fundamental to this course. Learners must provide evidence of co-operating effectively within a group situation.

Pathways

This course is suitable for learners who intend to follow a career in the fitness or recreation industry and for those who intend to be involved as a volunteer in sport. This course provides relevant background and experience for learners who plan to undertake Sport Science Level 3. The course provides useful skills and knowledge for learners who wish to undertake VET qualifications such as: Certificate II in Community Activities; Certificate II in Sport and Recreation; and Certificate III in Fitness.

Course Size And Complexity

This course has a complexity level of 2.

At Level 2, the learner is expected to carry out tasks and activities that involve a range of knowledge and skills, including some basic theoretical and/or technical knowledge and skills. Limited judgement is required, such as making an appropriate selection from a range of given rules, guidelines or procedures. VET competencies at this level are often those characteristic of an AQF Certificate II.

This course has a size value of 15.

Course Requirements

The content is divided into five (5) units of study.

All **five (5)** units are **compulsory**.

Unit 1: Body Systems
Unit 2: Fitness
Unit 3: Sports Knowledge and Involvement in Sport
Unit 4: Science of Performance
Unit 5: Unit of Inquiry

It is suggested that the units be delivered in this sequence. There are some topics with close connections with topics in other units (eg the respiratory system in Unit 1 and the transportation and supply of oxygen in Unit 4, and energy systems in Unit 1 and nutrition and energy in Unit 4). In such cases teachers might deliver the topics' contents as a combined whole (eg 'the respiratory system and transportation and supply of oxygen') or use the suggested sequence. It must be noted that topics in Unit 1 are studied from a basic anatomical perspective, while in Unit 4 topics are studied from a performance perspective.

Learners will participate in at least **five (5)** class laboratory sessions. At least **one (1)** laboratory session must be included in Units 1, 2, 3 and 4.

Course Content

UNIT 1: BODY SYSTEMS

All topics are to be covered: approximately 30 hours theory, 10 practical

This unit examines specific body systems. It explores the major components and functions of the major body systems and their contributions and interactions during physical activity:

- anatomical terms
    - anatomical position
    - anatomical directions: anterior, posterior, inferior, superior, proximal, distal, medial, lateral, superficial
    - types of movement: flexion, extension, abduction, adduction, supination, pronation, circumduction, rotation, inversion, eversion
- skeletal
    - names of major bones
    - the structure of bones
    - functions of the skeleton
- articular
    - classification of joints: fibrous, cartilaginous, synovial, bony
    - function of joints
    - anatomical location of different types of joints
- muscular
    - names of major muscles
    - muscle contraction
    - types of muscle contraction: isotonic, isometric, isokinetic
    - muscle fibre types: slow (type I), fast (type II), characteristics of each
- respiratory
    - basic anatomy of lungs (trachea, bronchi, bronchioles and alveoli)
    - gases in the blood-oxygen and carbon dioxide
    - gas exchange-diffusion
    - basic role of myoglobin and mitochondria
    - internal and external respiration
    - lung volume and capacities- vital capacity, ventilation, minute ventilation, tidal volume, respiratory frequency
- circulatory
    - role of blood cells/haemoglobin
    - the heart: structure, function, arteries, veins, capillaries
    - pulmonary and systemic circulation
    - blood flow: HR, maximum HR (220-age), stroke volume, cardiac output, a-vO2 difference
    - blood pressure- systolic/diastolic, factors effecting blood pressure
- energy systems
    - the different energy systems: ATP-PC System, Anaerobic, Aerobic
    - when and how they are utilized.

UNIT 2: FITNESS

All topics are to be covered: approximately 10 hours theory, 20 practical

This unit covers topics related to fitness, particularly how it can be assessed and developed:

- health related components
    - muscular strength, muscular endurance, aerobic endurance, flexibility, body composition
- skill related components
    - definitions of each: agility, speed, power, balance, coordination, reaction time
    - importance in relation to different sports
- fitness testing and profiling for the relative fitness components
    - importance of fitness testing
    - how the different components are tested- specific tests (vertical jump, beep test, sit and reach etc)
    - analysis of results
- fitness program for development of the relative fitness components
    - the training year: basic structure
    - structure of training/fitness programs
    - types of training: continuous, interval, fartlek, circuit, plyometric, weight or resistance training
    - factors affecting training: duration, frequency, intensity.

UNIT 3: SPORTS KNOWLEDGE AND INVOLVEMENT IN SPORT

All topics are to be covered: approximately 10 hours theory, 20 practical

This unit provides basic background information on a selection of sports and activities. This will equip learners with the required knowledge and skills to enable them to either effectively take part in sports/activities, to advise and instruct others or to undertake an administrative role:

- specific sports/activities skills
    - striking, invasion, racquet, aquatics
    - rules, regulations and safety
    - correct terminology
    - risk management
- ground/court markings and dimensions
    - diagrams
- equipment use
    - selection of appropriate equipment
    - care and maintenance
- coaching and administration
    - coaching skills: communication, planning, evaluation, feedback etc.
    - characteristics of a good/bad coach
    - roles in sport: umpiring/refereeing, time keeping, scoring, spectating
    - promotion and advertising.

UNIT 4: SCIENCE OF PERFORMANCE

All topics are to be covered: approximately 30 hours theory, 10 practical

This unit is designed to develop the basic knowledge regarding exercise physiology, skill acquisition and psychology through the following topics:

- body composition
    - somatotype
    - BMI
- nutrition and energy
    - percentage of CHO, fats and protein in a diet and their relative contributions to the energy systems/changes for athletes
    - high/low GI foods
    - ATP molecule
- transport and supply of oxygen
    - how oxygen is transported into and around the body-tie in with how oxygen contributes to energy production
    - the composition of blood
    - the role of Hb
    - heart rate/ventilation rate and its changes during exercise
- skills and learning
    - ‘what is a skill?’ fine/gross
    - reaction time
    - feedback
    - basic stages of learning
    - practise types
- basic skill analysis
    - skills analysis - video analysis
    - comparison between a beginner and a skilled/autonomous athlete
    - biomechanics: introduction to leavers/force
- impact of psychology
    - goal setting - SMART principle
    - preparation for competition
    - arousal
    - anxiety
    - motivation
    - relaxation - progressive muscle relaxation.

UNIT 5: UNIT OF INQUIRY

One topic to be covered: approximately 10 hours theory and/or practical

This unit is designed to allow learners to cover current issues that relate to sport in society and which are of particular interest to them. One (1) topic must addressed.

Lists of suggested topics:

- Drugs in sport
- Injuries in sport
- Violence in sport
- Climate
- Leadership
- Program design
- Clothing
- Technology in sport
- Media and sport
- Sport as a career
- Community recreational services
- Sport for the elderly and/or disabled.

Assessment

Criterion-based assessment is a form of outcomes assessment that identifies the extent of learner achievement at an appropriate end-point of study. Although assessment – as part of the learning program – is continuous, much of it is formative, and is done to help learners identify what they need to do to attain the maximum benefit from their study of the course. Therefore, assessment for summative reporting to TASC will focus on what both teacher and learner understand to reflect end-point achievement.

The standard of achievement each learner attains on each criterion is recorded as a rating 'A', 'B', or 'C', according to the outcomes specified in the standards section of the course.

A 't' notation must be used where a learner demonstrates any achievement against a criterion less than the standard specified for the 'C' rating.

A 'z' notation is to be used where a learner provides no evidence of achievement at all.

Providers offering this course must participate in quality assurance processes specified by TASC to ensure provider validity and comparability of standards across all awards. To learn more, see TASC's quality assurance processes and assessment information.

Internal assessment of all criteria will be made by the provider. Providers will report the learner's rating for each criterion to TASC.

Quality Assurance Process

The following processes will be facilitated by TASC to ensure there is:

- a match between the standards for achievement specified in the course and the standards demonstrated by learners
- community confidence in the integrity and meaning of the qualification.

Process – TASC will verify that the provider's course delivery and assessment standards meet the course requirements and community expectations for fairness, integrity and validity of qualifications TASC issues. This will involve checking:

- learner attendance records
- course delivery plans (the sequence of course delivery/tasks and when assessments take place)
- assessment instruments and rubrics (the 'rules' or marking guide used to judge achievement)
- class records of assessment
- examples of learner work that demonstrate the use of the marking guide
- samples of current learner's work, including that related to any work requirements articulated in the course document.

This process will usually also include interviews with past and present learners.

It will be scheduled by TASC using a risk-based approach.

Criteria

The assessment for Sport Science – Foundation Level 2 will be based on the degree to which the learner can:

1. Communicate ideas and information in a variety of forms
2. Demonstrate an understanding of the body systems and how they interact during exercise
3. Demonstrate an understanding of the factors that influence involvement in physical activity and fitness development
4. Demonstrate an understanding of the rules, regulations, administrative and safety considerations in a sporting context
5. Demonstrate knowledge and understanding of physiological, psychological and skill acquisition issues that influence exercise
6. Demonstrate an understanding of basic sport science research methods
7. Plan, organise and conduct activities
8. Work independently, and cooperatively

Standards

Criterion 1: Communicate ideas and information in a variety of forms

The learner:

Rating A	Rating B	Rating C
selects and uses a broad range of methods, styles and devices to communicate ideas and information appropriately	uses a variety of methods, styles and devices to communicate ideas and information appropriately	uses familiar methods, styles and devices to communicate ideas and information appropriately
applies appropriate literacy skills to clearly communicate ideas and information	applies appropriate literacy skills to communicate ideas and information	applies literacy skills to communicate basic ideas and information
collects a broad range of appropriate scientific data or information and present this in appropriate formats (eg tables, graphs, short paragraphs of text)	collects appropriate scientific data or information and present this in appropriate formats (eg tables, graphs, short paragraphs of text)	collects scientific data or information and present this in appropriate formats (eg tables, graphs, short paragraphs of text)
adjusts communication to suit specific context and changing conditions	adjusts communication to specific contexts and changing conditions	adjusts communication to different conditions
uses a wide range of appropriate technologies to communication of ideas and information.	uses a range of appropriate technologies to communication ideas and information.	uses a limited range of technologies to communication of ideas and information.

Criterion 2: Demonstrate an understanding of the body systems and how they interact during exercise

The learner:

Rating A	Rating B	Rating C
recognises the interactions of the body systems and how they can impact on exercise	recognises and names the relationships between the body systems	recognises and names the body systems
describes the inter-relationships between body systems contributing to exercise	describes how individual body systems contribute to exercise	recognises which body systems are important during exercise
demonstrates a thorough understanding of how each energy system works and apply this knowledge to solve problems in sporting contexts.	describes how each energy system works and applies this knowledge to appropriate sporting contexts.	demonstrates a basic understanding of how each energy system works and its relevance to exercise.

Criterion 3: Demonstrate an understanding of the factors that influence involvement in physical activity and fitness development

The learner:

Rating A	Rating B	Rating C
describes a wide range of factors that influence involvement in physical activity and fitness development	describes a variety of factors that influence involvement in physical activity and fitness development	describes the major factors that influence involvement in physical activity and fitness development
recognises and evaluates circumstances that influence involvement in physical activity for a range of people	recognises and evaluates circumstances that influence involvement in physical activity for a particular group	recognises personal circumstances that influence involvement in physical activity

proposes and implements strategies to enhance participation of self and others.	implements strategies to enhance participation of self and others.	identifies strategies to enhance self participation.

Criterion 4: Demonstrate an understanding of the rules, regulations, administrative and safety considerations in a sporting context

The learner:

Rating A	Rating B	Rating C
uses a wide range of specific terms to describe the play and rules of a sporting activity	uses a range of specific terms to describe the play and rules of a specific sporting activity	uses some specific terms to describe the play and rules of a specific sporting activity
identifies regulations associated with an extensive range of activities/sports and clearly explains how these regulations impact on situations	identifies regulations associated with a range of activities/sports and contribute to discussion about how these regulations impact on situations	identifies regulations associated with a limited range of activities/sports and contributes to discussion about how these regulations their impact on given situations
demonstrates safe practices to prevent injury to self and others, as identifies and suggests ways to minimise potential risks	demonstrates safe practices to prevent injury to self and others, and identifies possible risk factors	demonstrates safe practices to prevent injury to self and others
analyses a range of situations that are a risk to athletes and suggests appropriate ways to minimise these risks.	identifies a range of situations that are a risk to athletes and suggests ways to minimise these risks.	identifies a situation that is a risk to athletes.

Criterion 5: Demonstrate knowledge and understanding of physiological, psychological and skill acquisition issues that influence exercise

The learner:

Rating A	Rating B	Rating C
describes and appropriately uses a range of physiological, psychological and skill acquisition terms	describes a range of physiological, psychological and skill acquisition terms	explains the basic meaning of a limited number of common physiological, psychological and skill acquisition terms
identifies and describes a range of physiological, psychological and skill acquisition concepts	identifies and describes basic physiological, psychological and skill acquisition concepts	identifies basic physiological, psychological and skill acquisition concepts
use an extensive range of physiological, psychological and skill acquisition terms and concept in their discussion	use a number of physiological, psychological and skill acquisition terms and concepts in their discussion	use a limited number of physiological, psychological and skill acquisition terms and concepts in their discussion
identifies and explains a wide variety of physiological, psychological and skill influences on exercise	identifies and explains a variety of physiological, psychological and skill influences on exercise	identifies and explains some physiological, psychological and skill influences on exercise
demonstrates the ability to apply theoretical knowledge of physiology, psychology and skill to design, and implements a training program.	utilises theoretical knowledge of physiology, psychology and skill to modify or adapt a training program.	modifies or adapts exercise using physiology skill or psychology knowledge.

Criterion 6: Demonstrate an understanding of basic sport science research methods

The learner:

Rating A	Rating B	Rating C
describes and explains the principles of research in a sport science topic	describes the basic principles of research in a sport science topic	outlines the basic principles of research in a sport science topic
describes in detail a range of relevant ethical considerations that must be taken into account in a range of sport science researches	describes the ethical considerations that must be taken into account in a range of sport science researches	describes some of the ethical considerations that must be taken into account in a specific sport science research
plans, constructs and conducts basic inquiry/research tasks.	constructs and conducts basic inquiry/research tasks.	carries out a basic inquiry/research tasks as directed.

Criterion 7: Plan, organise and conduct activities

The learner:

Rating A	Rating B	Rating C
plans complex activities using provided resources	plans activities using provided resources	plans simple activities using provided resources
takes a pro-active role in evaluating the process of planning and conducting sporting activities	identifies changes in situations and conditions in a sporting activity and responds appropriately	follows directions as required in order to address changes in situations and conditions in a sporting activity
critically evaluate the process of planning and conducting activities	take an active role in evaluating the process of planning and conducting activities	take a minor role in an evaluation process
always follows safe work practices	always follows safe work practices	always follows safe work practices
works in a collaborative, responsible and active manner to achieve group goals.	works in a collaborative and active manner to achieve group goals.	works in a cooperative manner to achieve group goals.

Criterion 8: Work independently, and cooperatively

The learner:

Rating A	Rating B	Rating C
monitors, evaluates and adapts process to achieve team goals	remains focused on given team goals and tasks	remains focused on tasks and carries out assigned duties
negotiates and works collaboratively with all other team members	works cooperatively with other team members	adapts to changes and helps the team work effectively
effectively employs a range of collaborative strategies and leads when necessary.	effectively employs collaborative strategies.	employs some collaborative strategies.

Qualifications Available

Sport Science – Foundation Level 2 (with the award of):

EXCEPTIONAL ACHIEVEMENT

HIGH ACHIEVEMENT

COMMENDABLE ACHIEVEMENT

SATISFACTORY ACHIEVEMENT

PRELIMINARY ACHIEVEMENT

Award Requirements

The final award will be determined by the Office of Tasmanian Assessment, Standards and Certification from the eight ratings.

The minimum requirements for an award in Sport Science – Foundation Level 2 are as follows:

EXCEPTIONAL ACHIEVEMENT (EA)
7 'A' ratings, 1 'B' rating

HIGH ACHIEVEMENT (HA)
3 'A' ratings, 4 'B' ratings, 1 'C' rating

COMMENDABLE ACHIEVEMENT (CA)
3 'B' ratings, 4 'C' ratings

SATISFACTORY ACHIEVEMENT(SA)
5 'C' ratings

PRELIMINARY ACHIEVEMENT(PA)
3 'C' ratings

A learner who otherwise achieves the rating for a SA (Satisfactory Achievement) award but who fails to show any evidence of achievement in one or more criteria ('z' notation) will be issued with a PA (Preliminary Achievement) award.

Course Evaluation

The Department of Education's Curriculum Services will develop and regularly revise the curriculum. This evaluation will be informed by the experience of the course's implementation, delivery and assessment.

In addition, stakeholders may request Curriculum Services to review a particular aspect of an accredited course.

Requests for amendments to an accredited course will be forwarded by Curriculum Services to the Office of TASC for formal consideration.

Such requests for amendment will be considered in terms of the likely improvements to the outcomes for learners, possible consequences for delivery and assessment of the course, and alignment with Australian Curriculum materials.

A course is formally analysed prior to the expiry of its accreditation as part of the process to develop specifications to guide the development of any replacement course.

Course Developer

The Department of Education acknowledges the significant leadership of Amanda Francisty of the Tasmanian Academy in the development of this course.

Accreditation

The accreditation period for this course is from 1 January 2013 to 31 December 2017.

Version History

Version 1 - Accredited Version (10 August 2012). This course replaces Applied Sport Studies Level 2 courses which expired on 31 December 2012.

PDF generated on: 2024-05-04 20:51:42 AEST
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