Sport Science - Foundation

LEVEL 2	15 TCE CREDIT POINTS
COURSE CODE	SPT215118
COURSE SPAN	2018 — 2025
READING AND WRITING STANDARD	NO
MATHEMATICS STANDARD	NO
COMPUTERS AND INTERNET STANDARD	NO

This course was delivered in 2020. Use A-Z Courses to find the current version (if available).

Sport Science – Foundation provides learners with a genuine introduction to the academic rigor and professional culture of sport science as a discipline

Sports Science - Foundation progressively extends from a narrow personal focus examining the fundamentals of body systems during exercise to explore and build perspectives on the broader spectrum of roles, connections, values and issues that permeate sport.

Course Description

Sports Science – Foundation introduces participants to a wide range of concepts and experiences. Learners will gain insight into the broader application of Sport Science to contemporary sport and have numerous opportunities to apply their learning across a range of practical settings and roles.

The course is designed to help learners:

- develop an understanding of human functioning and physical activity
- build skills in communication, discussion and inquiry
- gain exposure to scientific investigation processes.

Sport Science – Foundation connects and integrates key concepts by reviewing practical situations and opportunities in real time to highlight the theory elements and strategies covered.

Learners develop an understanding of: anatomy and physiology of the human body; fitness; and how scientists investigate a range of connected functions and factors that influence sporting performance. Participants will also use their increasing awareness to reflect on the importance of physical activity, sport, recreation and fitness in their own lives.

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.

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

Rationale

Sport Science – Foundation is a Level 2 course in the Sport group of the Health and Physical Education (HPE) suite of courses. Sport Science is a rapidly expanding field* which encompasses physiological, psychological and skill acquisition components when planning and analysing human performance.

Sport Science - Foundation Level 2 bridges the gap between actively playing sport and the theory focus of Sport Science Level 3 by integrating elements of both. *Sport Science – Foundation* balances a shared focus between theory and application and, while framed with a sporting focus, explores health synergies and connections with an approach designed to promote active participation and immediate - as well as life-long - health awareness and benefits.

Sport Science – Foundation provides learners with a genuine introduction to the academic rigor and professional culture of sport science as a discipline. Sports *Science - Foundation* progressively extends from a narrow personal focus examining the fundamentals of body systems during exercise to explore and build perspectives on the broader spectrum of roles, connections, values and issues that permeate sport.

Learners will develop awareness and develop skills suitable for multiple pathways in the broader sport, fitness and recreation industry as well as possible further study in this and related areas.

In addition to exploring the ethos and intent of the dynamic field of Sport Science this course also reinforces the value of physical activity and provides an overview of the responsibilities people can adopt at different stages in their lives.

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*http://www.deakin.edu.au/students/faculties/faculty-of-health/school-of-exercise-and-nutrition-sciences/careers/exercise-and-sport-science/sport (accessed 30th May 2017)

Aims

Sport Science - Foundation is a level 2 course in the Sport group of the Health and Physical Education (HPE) suite of courses. The course aims to give a balanced insight into the range of disciplines, philosophical views and ethical considerations behind using science to assist in understanding and improving sports performance.

Sport Science - Foundation aims to provide learners with:

- insight into the scientific examination of sport and exercise performance
- core understanding around how the healthy human body works during exercise, how to achieve the best possible performances and how physical activity impacts health
- a broad basic understanding of the specialised professional fields and discipline areas related to HPE
- a range of appropriate skills in preparation for further study or employment
- general knowledge of key concepts, language, conventions, ethos, and context of study specific to this field
- an understanding of the specialised skills, standards, practices, expectations and pathways available for future work or study related to the sport sciences
- a broad platform for a range of destinations and possible future study or employment pathways in Sport Science related areas.

Learning Outcomes

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

1. explain basic theory of, and concepts relating to, exercise physiology, skill acquisition and sport psychology and how these disciplines connect and contribute to the field of sport science
2. apply a scientific approach to improving performance across a number of sporting and recreational contexts
3. plan, organise and conduct physical activities for individuals and groups
4. facilitate and help to support others in coaching, officiating and administrative roles
5. describe and justify rules, regulations and safety considerations in a range of sporting contexts
6. communicate ideas and information in a variety of forms
7. identify and utilise opportunities in practical tasks to display leadership
8. apply a scientific approach to sport, recreation, and laboratory-based activities
9. explain how tolerance, cooperation and interpersonal skills enable people to work independently, and constructively with others
10. display integrated skills at a level that enables them to undertake an individual sport science research activity
11. Additionally learners may: enjoy and appreciate the many significant personal benefits of participation and involvement in physical activity.

Access

Working with others and as a member of a team are required in this course.

Learners undertaking this course must be aware of the practical and physical activity elements required. Participants must arrive organised and ready to participate in a range of practical experiences and roles as part of this course.

Learners with physical disabilities can access this course and receive an award commensurate with their demonstrated ability to successfully meet the criteria and standards.

Pathways

This course is suitable for learners who intend to follow a career in the fitness, sport and recreation industry and for those who intend to be involved as a volunteer in sport.

Sport Science- Foundation extends on the Australian Curriculum - 9/10 Health and Physical Education v8.2:

Strand: Personal Social and Community Health

Focus Areas:

- Being healthy, safe and active
- Communicating and interacting for health and wellbeing
- Contributing to healthy active communities

Strand: Movement and physical activity

Focus Areas:

- Moving our body
- Understanding movement
- Learning through movement

Sport Science – Foundation is a course with multiple study and vocational pathways. It is designed for learners aiming to develop a broad understanding of the field of sport science and how the discipline areas of exercise physiology, skill acquisition and sport psychology, connect and contribute to contemporary practice.

Some learners may choose to enter this course following completion of other Level 2 courses from the HPE suite; *Athlete Development*, *Physical Recreation* or *Personal Health and Wellbeing*. As this course provides learners with an introduction to key terms, concepts and approaches it is recommended as a beneficial introductory course to the more demanding and theoretical Sport Science, Level 3.

Sport Science - Foundation provides useful skills and knowledge for learners who wish to undertake VET qualifications such as: Certificate II in Community Activities; Certificate II in Aquatics and Community Recreation; and Certificate III in Fitness.

Resource Requirements

High performance sport is an evolving, dynamic and technology-connected area. Learners must be able to access a range of performance testing equipment, software and facilities to complete *Sport Science – Foundation* research tasks and laboratory sessions.

Providers of this course must ensure learners have access to suitable facilities, sports equipment, spaces, IT resources and Sport Science testing equipment for practical sessions, laboratory and research study.

Learners will be required to use suitable filming devices, IT software and hardware in the introductory experiences in basic biomechanics and movement analysis. The inquiry and research elements of the course require access to online research, communication, collaboration and suitable tools for creating electronic presentations.

All learners must have the opportunity to work and interact with other learners.

Learners must be provided with opportunities and support in developing collaborative skills as learners must provide evidence of co-operating effectively within a group situation.

Course Size And Complexity

Sport Science - Foundation 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 judgment 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.

Sport Science - Foundation has a size value of 15.

Relationship To Other TASC Accredited And Recognised Senior Secondary Course

Sport Science - Foundation Level 2 examines some aspects of the topics, technical terms and areas which appear in the *Sport Science* Level 3 and *Athlete Development* Level 2 courses. While learners who are studying these courses either sequentially or concurrently may have some advantages in dealing with familiar language and integrating broad concepts, each course examines those topics with different perspective, depth, detail, application, and focus.

Course Delivery

There are some topics with close connections with topics in other Units (e.g. 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 the topics' contents might be delivered as a combined whole (e.g. Unit 1 respiratory system and Unit 4 'transportation and supply of oxygen'). It must be noted that topics in Unit 1 are studied from a basic functional anatomy and physiology perspective, while in Unit 4 topics are studied from a performance perspective.

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

While the order of delivery is not prescribed, it is *recommended* the Units are delivered in the noted sequence.

Learners will participate in *at least five (5)* class laboratory sessions.

At least one (1) laboratory session must be included in each of Units 1, 2, 3 and 4.

Course Content

UNIT 1: BODY SYSTEMS

- all topics are compulsory
- delivery: approximately 40 hours theory, 10 hours 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), performance 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.
- transport and supply of oxygen
  - how oxygen is transported into and around the body – in relation to how oxygen contributes to energy production the composition of blood
  - the role of Hb
  - heart rate/ventilation rate and its changes during exercise.
- energy systems
  - the different energy systems: ATP-PC System, Anaerobic, Aerobic
  - when and how they are utilized.
- 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.

Minimum Work Requirements – Unit 1 BODY SYSTEMS		
Task	**Example Products**	**Criteria**
Blood pressure lab. report (400 – 800 words)	Lab Report & Compression Garment Discussion	1, 2, 5, 6
Heart rate lab. report (400 – 800 words)	Heart Rate investigation and discussion/report	1, 2, 5, 6
Somatotype and BMI assignment	Research and make a somatotype self-assessment.	2, 5, 6

(200 words)	Create a short document describing your somatotype and possible implications for sport.	
High and low GI foods - practical shopping experience & research (200 words)	Create a pamphlet that could be used as a guide while shopping that listing good GI choices, with justifications.	1, 2, 5, 6

UNIT 2: FITNESS

- All topics are compulsory
- Delivery: approximately 15 hours theory, 15 hours 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 & reach etc.)
  - impact of body composition (& BMI)
  - 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.

Minimum Work Requirements – Unit 2 FITNESS		
Task	**Example Products**	**Criteria**
Fitness testing and profiling research and report: (400 words)	Written review of Victoria Police Applicants test battery	1, 5, 6
Personal fitness test and analysis (200 - 400 words)	Personal profile sheet and reflection	1, 3, 5, 6
Developing fitness – client project (1000 words)	Plan and review of personal trainer role - client interview - program plan - written report	3, 5, 6, 8

UNIT 3: SPORTS KNOWLEDGE AND INVOLVEMENT IN SPORT

- all topics are compulsory
- delivery: approximately 10 hours theory, 20 hours 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, and aquatics.
- developing games sense and tactical understanding
    - history of teaching games and sports
    - anatomy of game performance - Hopper (2003)
    - the games sense approach
    - common tactics in team games – defence, attack, tempo, strategy
- 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

Minimum Work Requirements – Unit 3 SPORTS KNOWLEDGE AND INVOLVEMENT IN SPORT		
Task	**Example Products**	**Criteria**
Key game concepts summary invasion sports (100 words)	Summary brochure: 10 dot points that summarise invasion sports	1, 4
Coaching session plan (400 words)	Session plan in detail for personal coaching experience	1, 3, 8
Practical coaching or admin (150 words)	Post session reflection - journal style report on personal experiences of the session - teacher designed form	1, 4, 7, 8
Practical sports marketing (3 minute presentation)	The Pitch: 3 minute presentation aimed at gaining buy-in and boosting participation - selling a specific event or activity	1, 3, 7, 8

UNIT 4: SCIENCE OF PERFORMANCE

- all topics are compulsory
- delivery: approximately 20 hours theory, 10 hours practical
- all learners must undertake practical experiments using electronic technology-based tools as part of basic skills analysis.

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

- skills and learning
  - 'what is a skill?' fine/gross
  - reaction time
  - feedback
  - basic stages of learning
  - practise types.
- basic skill analysis
  - the use of biomechanics and movement analysis in sport
  - what does a biomechanist actually do?
  - biomechanics: introduction to levers/force
  - using your mobile/tablet and apps for basic skill analysis and feedback
  - skills analysis – video analysis
  - comparison between a beginner and a skilled/autonomous athlete.
- impact of psychology goal setting - SMART principle
  - preparation for competition
  - arousal
  - anxiety
  - motivation
  - relaxation - progressive muscle relaxation.

Minimum Work Requirements – Unit 4 SCIENCE OF PERFORMANCE		
Task	**Product**	**Criteria**
Video and skill analysis (300 word report)	Written report discussing – how coaches and athletes can benefit from these sorts of tools and sessions?	1, 2, 5, 6
Practical relaxation – PMR session (150 words)	Post session reflection - journal style report on personal experiences of the session - teacher designed form	1, 2, 5, 8

UNIT 5: UNIT OF INQUIRY

- One topic is compulsory (examples include but are not limited to the list below)
- Delivery: 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.

Research and communication of findings from the inquiry task.

As a minimum (but not limited to) work **MUST** contain and address the following topics:

- aim or hypothesis
  - what are you specifically trying to find out and/or prove?
- key issues and impacts from a Sport Science perspective
  - explain and reference your findings – logically and scientifically assess the information
  - also include a brief examination of where your topic has some cross discipline links between exercise physiology, skill acquisition and sport psychology)
- method (equipment list, procedure etc.)

    - lists the process you used to get your information
- results (includes tables, graphs etc. all clearly labelled)
    - provide visual representation of your data/findings
    - trends and impact variables should be featured
- discussion
    - observations and connections to recognised Sport Science practice
    - patterns, cause/effect relationships, reflection on aim/hypothesis
    - explain how this topic impacts sporting performance.
- conclusions & recommendations
    - logical and well-reasoned summary that flows from discussion
    - implications of the conclusions/findings on current and future practice
    - future research to refine, confirm or next steps in related areas.
- reference list/bibliography.

One (1) topic must be addressed (1200 words).

Lists of suggested topics (includes but not limited to):

- technology in sport
- media and sport
- sport as a career
- community recreational services
- extreme sports
- drugs in sport
- injuries in sport
- violence in sport
- climate
- leadership
- program design
- clothing
- sport for the elderly and/or disabled.

Minimum Work Requirements – Unit 5 UNIT OF INQUIRY		
Task	**Product**	**Criteria**
Inquiry (1200 word)	Inquiry Report	1, 3, 5, 6, 7

Work Requirements

Minimum Work Requirements – Unit 1 BODY SYSTEMS		
Task	**Example Products**	**Criteria**
Blood pressure lab. report (400 – 800 words)	Lab Report & Compression Garment Discussion	1, 2, 5, 6
Heart rate lab. report (400 – 800 words)	Heart Rate investigation and discussion/report	1, 2, 5, 6
Somatotype and BMI assignment (200 words)	Research and make a somatotype self-assessment. Create a short document describing your somatotype and possible implications for sport.	2, 5, 6
High and low GI foods - practical shopping experience & research (200 words)	Create a pamphlet that could be used as a guide while shopping that listing good GI choices, with justifications.	1, 2, 5, 6

Minimum Work Requirements – Unit 2 FITNESS		
Task	**Example Products**	**Criteria**
Fitness testing and profiling research and report: (400 words)	Written review of Victoria Police Applicants test battery	1, 5, 6
Personal fitness test and analysis (200 - 400 words)	Personal profile sheet and reflection	1, 3, 5, 6
Developing fitness – client project (1000 words)	Plan and review of personal trainer role - client interview - program plan - written report	3, 5, 6, 8

Minimum Work Requirements – Unit 3 SPORTS KNOWLEDGE AND INVOLVEMENT IN SPORT		
Task	**Example Products**	**Criteria**
Key game concepts summary invasion sports (100 words)	Summary brochure: 10 dot points that summarise invasion sports	1, 4
Coaching session plan (400 words)	Session plan in detail for personal coaching experience	1, 3, 8

Practical coaching or admin (150 words)	Post session reflection - journal style report on personal experiences of the session - teacher designed form	1, 4, 7, 8
Practical sports marketing (3 minute presentation)	The Pitch: 3 minute presentation aimed at gaining buy-in and boosting participation - selling a specific event or activity	1, 3, 7, 8

Minimum Work Requirements – Unit 4 SCIENCE OF PERFORMANCE		
Task	**Product**	**Criteria**
Video and skill analysis (300 word report)	Written report discussing – how coaches and athletes can benefit from these sorts of tools and sessions?	1, 2, 5, 6
Practical relaxation – PMR session (150 words)	Post session reflection - journal style report on personal experiences of the session - teacher designed form	1, 2, 5, 8

Minimum Work Requirements – Unit 5 UNIT OF INQUIRY		
Task	**Product**	**Criteria**
Inquiry (1200 word)	Inquiry Report	1, 3, 5, 6, 7

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. Further information on quality assurance processes, as well as on assessment, is on the TASC website: http://www.tasc.tas.gov.au

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 of achievement specified in the course and the skills and knowledge demonstrated by learners community confidence in the integrity and meaning of the qualification.
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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:

- student 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 student work that demonstrate the use of a marking guide
- samples of current student's work, including work requirements.

This process may 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. describe human body systems and how they interact during exercise
3. identify and explain factors that influence involvement in physical activity and fitness development
4. compare and explain impacts of rules, regulations, administrative and safety considerations across a range of sporting contexts
5. describe how physiological, psychological and skill acquisition concepts influence performance
6. describe fundamental principles and methods used in sports science research and performance testing
7. plan, organise and conduct sports related activities
8. effectively work both independently, and cooperatively across various roles in sport.

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	uses a range of methods, styles and devices to communicate ideas and information	uses a limited range of methods, styles and devices to communicate ideas and information
selects, uses and refines everyday vocabulary and extensive sports-specific terminology with precision to convey meaning	selects, uses and refines everyday vocabulary and sports-specific terminology to convey meaning	selects, and uses everyday vocabulary and basic sports-specific terminology to convey meaning
uses a range of simple, compound and complex sentence structures to clearly convey complex ideas	uses simple, compound and complex sentence structures to clearly convey ideas	uses a combination of simple, compound and complex sentence structures to convey ideas
effectively communicates ideas using a logical structure to produce a cohesive text/response	clearly communicates ideas using a logical structure to produce a cohesive text/response	communicate a clear sequence of ideas
collects a broad range of appropriate scientific data or information and present this in appropriate formats (e.g. tables, graphs, short paragraphs of text)	collects appropriate scientific data or information and present this in appropriate formats (e.g. tables, graphs, short paragraphs of text)	collects scientific data or information and presents this in appropriate formats (e.g. tables, graphs, short paragraphs of text)
adjusts communication to suit changing conditions. Recognises and adapts in real-time to a wide variety of situations and contexts	adjusts communication to suit changing conditions. Recognises and adapts to a variety of situations and contexts	adjusts communication in response to different conditions. Recognises expected variation in situations and contexts
uses a wide range of appropriate technologies to communicate ideas and information	uses a range of appropriate technologies to communicate ideas and information	uses a limited range of technologies to communicate ideas and information
accurately records sources of information.	records sources of information.	records sources of information as directed.

Criterion 2: describe human body systems and how they interact during exercise

The learner:

Rating A	Rating B	Rating C
correctly identifies and explain interactions of major body systems and how they function during exercise	correctly identifies and describes connections between major body systems	correctly identifies and names major body systems
correctly explains how some body systems collectively contribute to exercise performance	correctly describes how individual body systems contribute to exercise performance	correctly identifies which body systems are important during exercise performance
correctly explains how each energy system works, and describes how they apply in a range of sporting contexts	correctly describes how each energy system works, and illustrates how they apply in sporting contexts	correctly identifies how each energy system works, and their relevance to exercise
correctly explains functions of major body systems and describes the significance of their roles during typical exercise situations.	correctly describes functions of major body systems and outlines their roles during typical exercise situations.	correctly states functions of major body systems and their role during typical exercise situations.

Criterion 3: identify and explain factors that influence involvement in physical activity and fitness development

The learner:

Rating A	Rating B	Rating C
describes and explains a wide range of factors that influence individuals' involvement in physical activity and fitness development	describes a range of factors that influence individuals' involvement in physical activity and fitness development	identifies a range of factors that influence individuals' involvement in physical activity and fitness development
identifies and assesses circumstances that influence involvement in physical activity for a range of people and groups	identifies and describes circumstances that influence involvement in physical activity for particular groups	identifies circumstances that influence involvement in physical activity for particular groups
proposes and implements strategies to enhance individual and community participation in physical activity and fitness development	identifies and implements strategies to enhance individual and community participation in physical activity and fitness development	identifies strategies to enhance individual and community participation in physical activity and fitness development
discusses factors impacting motivation and exercise adherence. Provides wide range of valid supporting research evidence	describes factors impacting motivation and exercise adherence. Provides range of valid supporting research evidence	identifies factors impacting motivation and exercise adherence. Provides limited range of valid supporting research evidence
correctly identifies and accurately explains simple and complex elements of program design in fitness contexts.	correctly identifies and explains elements of program design in given fitness contexts.	identifies and explains elements of program design in given fitness contexts.

Criterion 4: compare and explain impacts of rules, regulations, administrative and safety considerations across a range of sporting contexts

The learner:

Rating A	Rating B	Rating C
uses a wide range of specific terms to describe and explain the play and rules of sporting activities	uses a range of specific terms to describe the play and rules of specific sporting activities	uses a limited range of specific terms to describe the play and rules of specific sporting activities
correctly identifies regulations associated with an extensive range of activities/sports and clearly explains how these regulations impact on a range of situations	correctly identifies regulations associated with a range of activities/sports and describe how these regulations impact on a range of situations	correctly identifies regulations associated with a limited range of activities/sports and how these regulations may impact on given situations
explains organisational practices used to prevent injury to self and others in a wide variety of sporting contexts	describe organisational practices used to prevent injury to self and others in a range of sporting contexts	identifies organisational practices used to prevent injury to self and others in a limited range of sporting contexts
assesses a range of situations that are a risk to athletes and suggests appropriate ways to minimise these risks	describe a range of situations that are a risk to athletes and suggests ways to minimise these risks	identifies a limited range of situations that are a risk to athletes
reviews, compares and assesses administrative variations between different sports and levels of competition.	identifies and outline administrative variations between different sports and levels of competition.	identifies administrative variations between different sports and levels of competition.

Criterion 5: describe how physiological, psychological and skill acquisition concepts influence performance

The learner:

Rating A	Rating B	Rating C
defines and explains a range of sports-	defines and describes meaning for a	defines and describes basic meaning for a limited

related physiological, psychological and skill acquisition terms	range of sports-related physiological, psychological and skill acquisition terms	number of common sports-related physiological, psychological and skill acquisition terms
identifies and describes a range of sports-related physiological, psychological and skill acquisition concepts	identifies and describes basic sports-related physiological, psychological and skill acquisition concepts	identifies basic sports-related physiological, psychological and skill acquisition concepts
correctly uses an extensive range of sports-related physiological, psychological and skill acquisition terms and concept	correctly uses a number of sports-related physiological, psychological and skill acquisition terms and concepts	correctly uses a limited number of sports-related physiological, psychological and skill acquisition terms and concepts
identifies and explains a wide range of physiological, psychological and skill influences on performance	identifies and describe a range of sports-related physiological, psychological and skill influences on performance	identifies a limited range of sports-related physiological, psychological and skill influences on performance
designs and implements an original training program by integrating and applying cross discipline concepts	modifies an existing training program by integrating and applying cross discipline concepts	modifies a basic existing training program by integrating and applying cross discipline concepts
examine and assesses connections between physiology, psychology and skills that can impact on sports performance.	explains connections between physiology, psychology and skills that can impact on sports performance.	identifies basic connections between physiology, psychology and skills that can impact on sports performance.

Criterion 6: describe fundamental principles and methods used in sports science research and performance testing

The learner:

Rating A	Rating B	Rating C
explains the basic principles of research in a sport science context	describes the basic principles of research in a sport science context	outlines basic principles of research in a sport science context
explains relevant ethical considerations that must be taken into account in a range of sport science research scenarios	describes ethical considerations that must be taken into account in sport science research	identifies basic ethical considerations that must be taken into account in sport science research
explains a wide range of commonly used testing methods and protocols	describes commonly used testing methods and protocols	identifies commonly used testing methods and protocols
identifies, collates, compares and classifies a wide range of sports science research resources	identifies, collates and classifies a range of sports science research resources	collates and classifies provided sports science research resources
explains aims of, timing of, and suitable intervals between, performance testing sessions	describes aims of, timing of, and suitable intervals between, performance testing sessions	identifies aims of, timing of, and suitable intervals between, performance testing sessions
selects and effectively uses a comprehensive range of research sources to support discussion of testing data and recommendations for training adjustment	selects and uses a range of research sources to support discussion of testing data and recommendations for training adjustment	uses limited research sources to support discussion of testing data and recommendations for training adjustment
explains and conducts components of inquiry/research tasks.	describes and conducts components of inquiry/research tasks.	identifies and conducts basic components of successful inquiry/research tasks.

Criterion 7: plan, organise and conduct sports related activities

The learner:

Rating A	Rating B	Rating C
plans complex activities using a combination of provided resources and those developed by the learner	plans activities using a combination of provided resources and those developed by the learner	plans simple activities using provided resources
discusses key organisational steps and actions involved in conducting sports activities	describes key organisational steps and actions involved in conducting sports activities	identifies key organisational steps and actions involved in conducting sports activities
explains and applies ways in which individuals can assist peers in conducting group activities in a wide range of roles	describes and applies ways in which individuals can assist peers in conducting group activities in a range of roles	identifies and applies ways in which individuals can assist peers in conducting group activities in a limited range of roles
selects and appropriately employs a range of strategies in managing group dynamics, and to encourage engagement by other participants	selects and employs a range of strategies to encourage engagement by other participants	employs a limited range of strategies to encourage engagement by other participants
predicts and recognises changes in situations and conditions in a sporting activity and responds appropriately	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
contributes suggestions and leads discussions on planning and conducting activities	contributes suggestions and ideas to discussions on planning and conducting activities	responds effectively in discussions on planning and conducting activities
assesses - orally and in writing - the process of planning and conducting activities.	examines - orally and in writing - the process of planning and conducting activities.	reflects - orally and in writing - on the process of planning and conducting activities.

Criterion 8: effectively work both independently, and cooperatively across various roles in sport.

The learner:

Rating A	Rating B	Rating C
selects and appropriately uses a wide range of strategies to efficiently prepare and complete tasks to deadline	appropriately uses a range of strategies to efficiently prepare and complete tasks to deadline	appropriately uses a limited range of work strategies – as directed – to prepare and complete tasks
cooperatively and proactively supports others in fulfilling their roles and tasks	cooperatively supports others in fulfilling their roles and tasks	cooperatively supports others in task completion
assesses role demands, behaviours, and actions needed to operate effectively in various sport contexts	explains role demands, behaviours, and actions needed to operate effectively in various sport contexts	identifies role demands, behaviours, and actions needed to operate effectively in various sport contexts
explains choices made based on perspective and judgement in completing both personal and team tasks. Monitors, assesses and adapts processes to set and achieve team goals	describes choices made based on priorities and broad perspective in completing both personal and team tasks. Monitors and assesses processes to set team goals and tasks	identifies choices made based on priorities in completing both personal and team tasks. Monitors processes to complete tasks and carry out assigned duties
communicates clearly and effectively and cooperates with others when adapting to a wide variety of roles and circumstances	communicates clearly and effectively with other when adapting to a variety of roles and circumstances	communicates clearly with others when adapting to a variety of roles and circumstances
recognises expectations and responds appropriately in a wide range of roles and situations	recognises expectations and responds appropriately in a range of roles and situations	recognises expectations and responds appropriately in basic roles and situations
discusses and follows safe work practices. Explains potential risks and responds to	describes and follows safe work practices. Identifies potential risks and responds to	identifies and follows safe work practices. Describes potential risks and

reduce or prevent any unsafe practices displayed by peers.	reduce any unsafe practices displayed by peers.	recognises any unsafe practices displayed by peers.

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 Tasmanian Assessment, Standards and Certification from 8 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)

4 'B' ratings, 3 'C' ratings

Satisfactory Achievement (SA)

6 'C' ratings

Preliminary Achievement (PA)

4 'C' ratings

A learner who otherwise achieves the rating for a CA (Commendable Achievement) or 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 forward 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 Paul Jones (Rosny College), Peter Taylor, Brendan Kull (Guilford Young College), Sarah Hardy (Don College), Paul Smith (St. Patrick's College), and Darren Perry (Curriculum Teacher Leader – Health and Physical Education) in the development of this course.

Accreditation

The accreditation period for this course has been renewed from 1 January 2022 until 31 December 2025.

During the accreditation period required amendments can be considered via established processes.

Should outcomes of the Years 9-12 Review process find this course unsuitable for inclusion in the Tasmanian senior secondary curriculum, its accreditation may be cancelled. Any such cancellation would not occur during an academic year.

Version History

Version 1 – Accredited on 5 October 2017 for use from 1 January 2018. This course replaces SPT215113 *Sport Science- Foundation* that expired on 31 December 2017.

Accreditation renewed on 22 November 2018 for the period 1 January 2019 until 31 December 2021.

Version 1.i - Amendment 24 December 2018 - removal of Criterion 8 from Unit 5 work requirement, and minor refinement to Criterion 5 standard element 1.

Version 1.ii - Renewal of Accreditation on 14 July 2021 for the period 31 December 2021 until 31 December 2025, without amendments.

Appendix

Overarching definitions

Analyse: Break information into parts to explore understanding and relationships (comparing, organise, deconstruct, interrogate, find)

Apply: Use information in another familiar situation (implement, carry out, use, execute) Best practice: On the basis of all available evidence the practice can be expected to produce the most favourable outcome

Client: Individuals, groups, teams or organisations who use the services of an exercise science professional

Describe: Give a detailed account of in words

Evaluate: Justify a decision or course of action (check, hypothesise, critique, experiment, judge)

Exercise: A specific type of physical activity that is repetitive and planned with the objective of improving or maintaining physical activity. Exercise includes various exercise modalities such as endurance, anaerobic, flexibility, resistance, balance and agility exercise, which can be performed over a range of intensities, frequencies and durations within a variety of environments

Exercise science: The science of exercise for health, fitness and sports performance

Identify: Establish or indicate what something is

Integrate: Combine (one thing) with another to form a whole

Physical activity: A general term for any body movement performed with skeletal muscles that results in an increase in energy expenditure

Sport: Physical activity capable of achieving a result and requiring physical exertion and/or physical skill, and which, by its nature and organisation, is competitive

Understand: Explain ideas or concepts (interpret, summarise, paraphrase, classify, explain)

Definitions within study areas

For the readers' convenience, the following part of the glossary has been divided into study areas; consequently, some entries are repeated.

Biomechanics

Analysing: Describing the characteristics of human movement from qualitative and quantitative perspectives

Biomechanical services: The design, conduct and reporting of biomechanical analysis in research, scientific support (e.g. elite sport), education and consultancy

Biomechanics: The study of biological systems from an anatomical and a mechanical perspective

Mechanics: A branch of physics that, in the exercise and sport context, is involved with the anatomical and dynamic aspects of human movement and the surfaces and equipment involved

Movement asymmetry: Imbalances in bilateral muscle strength Physical effects of human interaction with equipment and the environment: Interactions with various types and conditions of sport surfaces and environmental conditions

Technique: The pattern and sequence of movements required to produce the prescribed action efficiently, or an efficient and competitive action, or the desired action efficiently

Exercise delivery

Apparently healthy client: Clients who are considered on the basis of their health status to be at low risk of adverse events during exercise. Includes children, adolescents, older adults, pregnant women (including women from early pregnancy to late-stage post-partum), and clients requiring weight management

Data: Recording information/measurements on heart rate, blood pressure, workload, risk status and training or activity history

Exercise delivery: The implementation of an exercise program for individuals or groups, with a particular emphasis on the practical aspects of leadership of exercise sessions. Mode of delivery may be face-to-face or distance

Exercise load: Components of exercise prescription that, for a given type and mode of exercise, contribute to the exercise ‘dose’; includes intensity, frequency, duration, work-to- rest ratio, recovery time and movement rate

Prescribing: Designing an exercise program

Safety measures: May include modifying or ceasing exercise, application of first aid, or referral to another medical or health professional

Exercise physiology

Acute exercise: A single bout of activity that involves static and/or dynamic muscle activation at any given intensity from rest to maximal exercise and back to rest

Chronic exercise: Repeated bouts of acute exercise, either structured or unstructured; exercise training

Individual: A person of any age or sex, at any level of physical, functional or health status

Physiological system: A system that contributes to the functioning of the human body. In exercise science, the systems of interest are the nervous, musculoskeletal, cardiovascular, respiratory, endocrine, renal, digestive, immune, reproductive and integumentary systems

Exercise prescription

Current exercising guidelines: Exercising guidelines published by reputable authoritative sources, such as those provided by the American College of Sports Medicine and Exercise & Sports Science Australia

Exercise environments: A broad range of settings that may be land or water based, commercial or private, supervised or unsupervised, and involve extremes of climate

Physical function and capacity: Measures of cardiorespiratory, musculoskeletal and neuromuscular abilities

Health, exercise and sport assessment

Assessment: Health, exercise, physical activity and sport-related assessment

Fitness: Attributes and capabilities that relate to the capacity to perform exercise or sport and are associated with a low risk of premature development of hypokinetic diseases

Health and fitness evaluation: A process that includes pre-exercise screening and risk appraisal; measurement of components that contribute to physical fitness, including cardiorespiratory endurance, muscular strength and fitness, flexibility and body composition; analysis and interpretation of the test results; and provision of feedback to the participant and other relevant personnel (e.g. other health professionals)

Medical supervision: Supervision of a test by a registered medical practitioner or physician

Sport-related assessment: Tests that assess attributes and capacities relevant to the ability to perform specific or general activities in sporting contexts; includes analysis and interpretation of test results and the provision of feedback to the participant and other relevant personnel (e.g. coach)

Health, exercise and sport psychology

Adoption: Participation in, or the initiation of, exercise or physical activity

Adherence: The continued fidelity to participation in and maintenance of exercise or physical activity

Ecological: Encompassing an integrated understanding of the complex array of intrapersonal, interpersonal, cultural, biological and environmental influences on behaviour

Human physiology

Physiological system: A system that contributes to the functioning of the human body. In exercise science, the systems of interest are the nervous, musculoskeletal, cardiovascular, respiratory, endocrine, renal, digestive, immune, reproductive and integumentary systems

Motor control and learning

Motor control: A sub-discipline of human movement concerned with understanding the processes that underlie the acquisition, performance and retention of motor skills

Motor learning/skill acquisition: Changes in motor control that occur as a consequence of practice (or adaptation); focuses on how skills are learnt and the changes in performance, retention and control mechanisms that accompany skill acquisition

Nutrition

General nutrition advice: Advice that considers the client's age and gender, but is general in nature, not prescriptive; in accordance with current evidence-based guidelines for Australians

Physical activity and health

Health system: A system for the delivery of health services; includes private and public systems, and state and federal systems

Intervention: Any program or policy intended to increase physical activity or decrease sedentary behaviour

Physically active: Describes the proportion of the population that meets the Australian Physical Activity Guidelines

Insufficiently active: Describes the proportion of the population that does not meet the Australian Physical Activity Guidelines

Population: May refer to the whole population or a defined subpopulation (e.g. older adults)

Primary prevention: Seeks to limit disease by controlling causes and risk factors. Efforts can be directed at the whole population, with the aim of reducing average risk; or target people (subgroups) at higher risk

Secondary prevention: Seeks to reduce the more serious consequences of disease through early diagnosis and treatment, most typically via screening programs

Tertiary prevention: Seeks to reduce the progress or complications of established disease (e.g. rehabilitation programs)

Principles of screening: The presumptive identification of unrecognised disease or defects by means of tests, examinations or other procedures that can be applied rapidly. A screening test is not intended to be diagnostic

Sedentary behaviour: Activities that have a low energy requirement Professional practice

Practicum: Work conducted by a student at a work site (often external to the university) as part of the professional practice curriculum

Professional practice: Includes all aspects of curriculum related to work-based learning, including engagement in the practicum

Research methods and statistics

Databases: Any bibliographic database of scientific and biomedical information (e.g. Medline, Scopus, CINAHL, Embase, SPORTDiscus)

Information retrieval: Searching for documents, for information within documents, and for metadata about documents, as well as searching relational databases and the internet

Research design:

Turning a research question and hypothesis into a testing project

Statistical calculations:

Data and its distribution; also includes descriptive, comparative and relationship statistics

Reference:

Exercise Science Standards – Australia (accessed Sept 2016)

Other useful glossary resources (accessed Sept 2016):

- http://www.metasport.com/sports-science-terminology/
- http://www.topendsports.com/fitness/terms/
- http://www.topendsports.com/testing/glossary.htm
- https://www.verywell.com/glossary-of-sports-medicine-terminology-a-3119188
- http://positivesportparent.com/definitions-and-benefits-of-commonly-used-sports-related-terminology/

- https://quizlet.com/119606607/sport-science-glossary-flash-cards/
- https://www.brianmac.co.uk/siteindx.htm
- http://har0039.weebly.com/

Line Of Sight

Learning Outcome	Unit	Criterion & Elements
▪ explain basic theory of and concepts relating to exercise physiology, skill acquisition and sport psychology and how these disciplines connect and contribute to the field of sport science	1,2,4,5	C1 E 1-8 C2 E 1-4 C5 E 1-6 C6 E 1-7
▪ apply a scientific approach to improving performance across a number of sporting and recreational contexts	1,2,4,5	C1 E 1-8 C2 E 1-4 C5 E 1-6 C6 E 1-7 C8 E 1-7
▪ plan, organise and conduct physical activities for individuals and groups	2,3	C1 E 1,6 C3 E 1-5 C4 E 1-5 C7 E 1-7 C8 E 1-7
▪ facilitate and help to support others in coaching, officiating and administrative roles	3,5	C1 E 1, 4, 6, 7 C3 E 3 C4 E 1-5 C7 E 3, 5, 7 C8 E 1-7
▪ describe and justify rules, regulations and safety considerations in a range of sporting contexts	2,3	C1 E 1-8 C3 E 3-5 C4 E 1-4 C7 E 1-7 C8E 7
▪ communicate ideas and information in a variety of forms	1,2,3,5	C1 E 1-8 C2 E 1-4 C3 E 1-5 C4 E 1-5

		C5 E 1-6 C6 E 1-7 C7 E 1-7 C8 E 1-7
■ identify and utilise opportunities in practical tasks to display leadership	2, 3	C1 E 1, 4, 6, 7 C3 E 1, 3 C4 E 1-3 C7 E 1-7 C8 E 4-7
■ apply a scientific approach to sport, recreation, and laboratory-based activities	1,2,4	C1 E 1-8 C2 E 1-4 C5 E 1-6 C6 E 7 C8 E 1-7
■ explain how tolerance, cooperation and interpersonal skills enable people to work independently, and constructively with others	3,5	C1 E 1,6,7 C3 E 1-5 C7 E 2,6,7
■ display integrated skills at a level that enables them to undertake an individual sport science research activity.	2,4,5	C1 E 1-8 C2 E 1-4 C5 E 1-6 C6 E 1-7 C8 E 1-7

Tasmanian Government

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