



Higher National Unit specification: general information

Unit title: Strength and Conditioning for Sports Performance

Unit code: FX9T 35

Superclass: MD

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Version: 01

Unit purpose

The purpose of this Unit is to enable candidates to demonstrate the specialist skills and competencies required to effectively plan and implement strength and conditioning programmes designed to improve athletic performance.

On completion of the Unit the candidate should be able to

- 1 Devise and present information explaining the process of planning, delivering and evaluating a sport-specific periodised strength and conditioning programme.
- 2 Plan, deliver and evaluate a sport-specific periodised strength and conditioning session.
- 3 Demonstrate and effectively coach key weight-lifting movements and resistance exercises.

Recommended prior knowledge and skills

It would be beneficial for candidates to possess skills or experience relevant to the Unit. This may have been gained through the HN Units *Anatomy, Physiology and Energy Systems, Strength and Conditioning: an Introduction* and *Principles of Fitness Training*. Ultimately, entry is at the discretion of the centre. This Unit is intended to compliment the mandatory Unit *Fitness Conditioning in Sport*.

Credit points and level

1 Higher National Unit credit at SCQF level 8: (8 SCQF credit points at SCQF level 8*)

**SCQF credit points are used to allocate credit to qualifications in the Scottish Credit and Qualifications Framework (SCQF). Each qualification in the Framework is allocated a number of SCQF credit points at an SCQF level. There are 12 SCQF levels, ranging from Access 1 to Doctorates.*

General information (cont)

Core Skills

There are opportunities to develop the *Core Skills of Communication, Numeracy, Information and Communication Technology (ICT), Working with Others, and Problem Solving* in this Unit; however, there is no automatic certification of Core Skills or Core Skills components.

Context for delivery

If this Unit is delivered as part of a Group Award, it is recommended that it should be taught and assessed within the subject area of the Group Award to which it contributes.

This Unit is included in the framework for the HNC/HND Coaching and Developing Sport

Assessment

Outcome 1 will be assessed via the delivery of a 10 minute oral presentation and submission of appropriate support material. Observation and questioning by the assessor will confirm that the candidate possesses sufficient knowledge of the key criteria.

Outcome 2 will be assessed via the submission of a single speed and agility training session designed to enhance performance of a specific sport. Plyometric training may be used where appropriate. Candidates will also be required to deliver the session to one client while being assessed using an observational checklist.

Outcome 3 will be assessed through observation where the candidate will be required to demonstrate technically correct techniques and provide relevant coaching points.

Higher National Unit specification: statement of standards

Unit title: Strength and Conditioning for Sports Performance

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The sections of the Unit stating the Outcomes, Knowledge and/or Skills, and Evidence Requirements are mandatory.

Where evidence for Outcomes is assessed on a sample basis, the whole of the content listed in the Knowledge and/or Skills section must be taught and available for assessment. Candidates should not know in advance the items on which they will be assessed and different items should be sampled on each assessment occasion.

Outcome 1

Devise and present information explaining the process of planning, delivering and evaluating a sport-specific periodised strength and conditioning programme.

Knowledge and/or Skills

- ◆ Needs analysis.
- ◆ Assessment of athlete's strength and weaknesses.
- ◆ Scientific principles of periodisation, programme design and exercise prescription.
- ◆ Evidence of monitoring and evaluation.
- ◆ Presentation skills.

Evidence Requirements

Candidates must provide evidence to demonstrate understanding of all of the key Knowledge and/or Skills by showing that they can deliver a comprehensive 10 minute presentation explaining the process of planning, delivering and evaluating a sport-specific periodised training programme. The programme should be for a period of three months.

The presentation must be of sufficient length to enable candidates to explain comprehensively the key Knowledge and Skills and must refer to and be underpinned by current scientific knowledge.

Candidates must be able to respond to questioning and justify the design of their programme.

An observation checklist and recorded evaluation will be the instruments of assessment.

Higher National Unit specification: statement of standards (cont)

Unit title: Strength and Conditioning for Sports Performance

Assessment Guidelines

Candidates will prepare, deliver and evaluate a presentation illustrating the processes involved in the design and delivery of a periodised sport-specific training programme.

It is recommended that the candidates base this presentation on the periodised programme carried out in the Unit *Fitness Conditioning for Sport*.

The presentation should be long enough to allow candidates to demonstrate sufficient knowledge of the key Knowledge and Skills. It is suggested the presentation should be in the region of 10 minutes in length, with extra time allowed for extensive questioning.

Outcome 2

Plan, deliver and evaluate a sport-specific periodised strength and conditioning session.

Knowledge and/or Skills

- ◆ Biomechanical and physiological mechanisms of:
 - speed training
 - agility training
 - plyometric training.
- ◆ Effective analysis and consideration of movement patterns/dynamic correspondence.
- ◆ Effective design and delivery of speed, agility and plyometric training techniques.
- ◆ Consideration of key safety concerns.

Evidence Requirements

Candidates must provide evidence to demonstrate their understanding of the key Knowledge and/or Skills by delivering practical sessions to develop speed, agility and plyometrics. A minimum of two sessions must be delivered that cover the key movement patterns of an unfamiliar sport.

Candidates must prepare a session plan that clearly demonstrates consideration of the sport and its key movement patterns and identifies essential safety issues. They must also complete an evaluation of the session.

The session plan must describe a range of exercises, structured in an appropriate fashion, and following recommended guidelines, highlight key biomechanical and technical coaching points.

An observation checklist will be used to assess practical coaching ability and subject knowledge.

Higher National Unit specification: statement of standards (cont)

Unit title: Strength and Conditioning for Sports Performance

Assessment Guidelines

It is suggested that candidates be provided with a short video clip of an individual or team sport and given time to analyse the footage and identify key movement patterns (joint actions, muscular contractions, work/rest ratio etc).

Based on the analysis, candidates must design a periodised session aimed at enhancing strength and conditioning for the specified sport.

Candidates should then coach a client through the session providing satisfactory technical instruction and fault correction, highlighting biomechanical and technical coaching points.

It is suggested that the session takes in the region of 30 minutes, including a dynamic warm up and cool down.

Candidates should provide feedback to the client and complete a reflective evaluation.

Outcome 3

Demonstrate and effectively coach key weight-lifting movements and resistance exercises.

Knowledge and/or Skills

- ◆ Effective demonstration and coaching of dynamic warm-up.
- ◆ Effective demonstration and coaching of key weight-lifting movements.
- ◆ Effective demonstration and coaching of assistance exercises.
- ◆ Knowledge of alternatives/variations for weight-lifting and assistance exercises.
- ◆ Understanding of current strength and conditioning training modalities.

Evidence Requirements

To achieve this Outcome each candidate will be required to demonstrate practically and orally their understanding of all aspects of the Knowledge and/or Skills section. An observation checklist, detailed session plan and recorded evaluation will be the instruments of assessment.

Observations must cover sessions of sufficient length to ensure that all of the Knowledge and Skills section is addressed to a satisfactory level.

Candidates are required to prepare, deliver and evaluate a single session aimed at developing strength and power for a sport of their choice. Exercise selection must be justified and the transferable benefit to the specified sport must be explained.

Candidate must also provide evidence of their understanding of various strength and conditioning modalities.

Higher National Unit specification: statement of standards (cont)

Unit title: Strength and Conditioning for Sports Performance

Assessment Guidelines

Candidates should provide a comprehensive session plan outlining a single session aimed at improving strength and power for a specified sport.

Candidates should produce an evaluation showing evidence of reflection and identification of strengths and weaknesses and development objectives.

It is recommended that an observational checklist be used to assess candidates' technical coaching and demonstrating skills.

Candidates' knowledge of alternative exercises and training modalities could be assessed via the checklist if appropriate written evidence of their responses is recorded.

Higher National Unit specification: support notes

Unit title: Strength and Conditioning for Sports Performance

This part of the Unit specification is offered as guidance. The support notes are not mandatory.

While the exact time allocated to this Unit is at the discretion of the centre, the notional design length is 40 hours.

Guidance on the content and context for this Unit

The Unit is likely to form part of a Group Award and is primarily designed to provide candidates with knowledge of strength and conditioning processes essential to developing athletic performance in sport. As such, candidates will benefit from studying relevant subject-based Units prior to studying this Unit. In these circumstances it is likely the Unit will be delivered in year 2 of an HNC/HND award. This should allow the candidate to apply Knowledge and/or Skills from *Anatomy, Physiology and Energy Systems* and *Principles of Fitness Training*, and *Strength and Conditioning for Sports Performance*.

Whenever possible, the candidate should avoid using resistance machines and base their sessions predominantly on free-weight exercises with closed chain kinetic movements forming the basis for all key exercises.

Coach the movement, not the muscle.

Guidance on the delivery and assessment of this Unit

Outcome 1:

- ◆ Needs Analysis of sport and athlete:
 - assessment of athlete
 - identify strengths and weaknesses
 - posture/dynamic flexibility
 - strength, agility, speed, power assessment
 - consideration of competitive demands of sport

- ◆ Acute programme variables:
 - exercise selection
 - general adaptation syndrome
 - application of frequency
 - intensity
 - time
 - type
 - adherence
 - specificity/dynamic correspondence
 - principals of periodisation to suit demands of sport
 - application of long-term athlete development
 - consideration of 'training age'

Higher National Unit specification: support notes (cont)

Unit title: Strength and Conditioning for Sports Performance

- ◆ Evidence of evaluation and monitoring:
 - measuring progress
 - recovery strategies
 - overtraining
 - delayed onset muscle soreness
 - burnout
 - programme adaptation

- ◆ Presentation skills:
 - clarity of voice
 - para-language
 - eye contact
 - structure
 - ability to respond to questions

Outcome 2:

- ◆ Sprinting technique:
 - body position
 - heel recovery
 - preparation for ground contact;
 - ground contact
 - arm action
 - hand action
 - head action
 - sports specificity
 - movement patterns/dynamic correspondence

- ◆ Acceleration and reaction time:
 - starting/accelerating technique
 - centre of gravity/base of support
 - anticipation
 - response to stimuli

- ◆ Agility:
 - ground contact
 - biomechanical alignment
 - predictable/unpredictable stimuli
 - foot/surface interface
 - movement patterns/dynamic correspondence
 - work/rest ratio.

Higher National Unit specification: support notes (cont)

Unit title: Strength and Conditioning for Sports Performance

- ◆ Plyometrics:
 - mechanisms for action
 - eccentric/amortisation/concentric phases
 - stretch reflex
 - multi dimensional/sports specific
 - active 'power pad' foot position
 - training modes, eg jumps, hops, bounds, shocks
 - intensity (number of foot contacts)
 - progression
 - volume
 - movement patterns/dynamic correspondence

Outcome 3

- ◆ Identification of key safety factors relating to weight lifting:
 - posture
 - technique
 - environment
 - storage of equipment
 - spotting
 - breathing
 - reinforcing form
- ◆ Key weight-lifting movements:
 - back squat
 - front squat
 - overhead squat
 - the deadlift
 - stiff-legged deadlift
 - the clean and derivatives
 - snatch and its derivatives
 - overhead presses and jerks
- ◆ Assistance exercises:
 - shrug
 - bench press
 - squat derivatives
 - lunge
 - bent over row
 - pull over
 - shoulder press
 - dip
 - press up
 - core conditioning
 - isometric balances, etc

Higher National Unit specification: support notes (cont)

Unit title: Strength and Conditioning for Sports Performance

- ◆ Coaching knowledge:
 - variations/adaptations of key exercises
 - application of 'Complex Training' and exercise grouping
- ◆ Effective coaching:
 - accurate demonstrations
 - posture
 - correct technique
 - breathing
 - lifting and handling of weights
 - fault identification
 - corrective feedback

Open learning

It may be possible to deliver and assess part of this Unit by an Open Learning route although it is difficult to envisage how this can be delivered or effectively assessed due to the practical nature of the assessments and the learning environment required.

Opportunities for the use of e-assessment

E-assessment may be appropriate for some assessments in this Unit. By e-assessment we mean assessment which is supported by Information and Communication Technology (ICT), such as e-testing or the use of e-portfolios or e-checklists. Centres which wish to use e-assessment must ensure that the national standard is applied to all candidate evidence and that conditions of assessment as specified in the Evidence Requirements are met, regardless of the mode of gathering evidence. Further advice is available in *SQA Guidelines on Online Assessment for Further Education (AA1641, March 2003)*, *SQA Guidelines on e-assessment for Schools (BD2625, June 2005)*.

Opportunities for developing Core Skills

There are opportunities to develop the Core Skills of *Communication, Numeracy, Information and Communication Technology, Working with Others*, and *Problem Solving* in this Unit; however, there is no automatic certification of Core Skills or Core Skills components.

Candidates will work together in groups to achieve the practical elements of the Unit. Written and verbal communication will be developed through delivering presentations and coaching sessions. The use of ICT should be encouraged to enhance the presentation for Outcome 1.

Disabled candidates and/or those with additional support needs

The additional support needs of individual candidates should be taken into account when planning learning experiences, selecting assessment instruments, or considering whether any reasonable adjustments may be required. Further advice can be found on our website www.sqa.org.uk/assessmentarrangements

History of changes to Unit

| Version | Description of change | Date |
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General information for candidates

Unit title: Strength and Conditioning for Sports Performance

Strength and Conditioning is an essential element in long-term athlete development and improved athletic performance. In competitive sport at any level, if all other factors are equal, the most effectively conditioned athlete will win. Through strategically prescribed and accurately coached strength and conditioning programmes it is possible to enable athletes to increase their endurance, speed, agility, strength and power to produce optimal performance.

The field of strength and conditioning has progressed greatly in recent years and coaches are often adopting a more scientific approach and aware of the need to tailor training to an athlete's specific requirements and movement patterns.

To ensure that efficiency of training is maximised and that the transfer of training to sport is at its most effective, it is important that the theory of dynamic correspondence is considered when designing training programmes for athletes. This means that general strength training exercises performed in training must be complimented with special exercises that resemble the movement patterns, applications of force, dynamics of effort and they type of muscular contraction experienced during performance.

To achieve this, training should be based on closed chain kinetic exercise that promote multi-joint actions such as the triple extension of the ankle, knee and hip. Exercises such as the Olympic lifts and their derivatives require the body to function in unison with muscles working together as agonists, antagonist, synergists and fixators to facilitate movement and maintain posture, just as they are in sport.

In this Unit you will learn how to plan, deliver and evaluate a range of strength and conditioning modalities all aimed at improving and optimising athletic performance. You will discover how training with free weights can reduce and prevent injury, dramatically improve athletes' strength and power and enable them to be faster, more agile and significantly more explosive.

This Unit is designed to be very practical in nature as the skills required to be displayed take time to develop and adequate time must be allocated to practising technical and coaching ability.

Outcome 1 requires you to plan, deliver and evaluate a practical speed, agility and plyometric session for an unfamiliar sport. As a strength and conditioning coach it is essential that you are able to prescribe exercises for a wide range of sports and this Outcome will test your ability to do this.

Outcome 2 requires you to deliver an oral presentation explaining the key processes that a strength and conditioning coach needs to go through in planning, delivering, monitoring and evaluating a periodised strength and conditioning programme aimed at improving athletic performance in a sport of your choice. It is suggested that this Outcome could be integrated with Outcome 3 in *Fitness Conditioning in Sport*.

General information for candidates

Unit title: Strength and Conditioning for Sports Performance

To achieve **Outcome 3** successfully you must show your ability to demonstrate and coach a range of free weight, closed kinetic and open kinetic chain exercises effectively. You will be required to plan, deliver and evaluate a single session that is designed to improve strength and power for a specific sport of your choice. You will have to justify your choice of exercises and be prepared to answer questions about alternative exercises and alternative training modes. If not included in your programme, you will also be required to demonstrate and explain the key coaching points for one of the full Olympic lifts.