



Higher National Unit specification: general information

Unit title: Strength and Conditioning: An Introduction

Unit code: FW60 34

Superclass: MD

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Unit purpose

This Unit aims to introduce candidates to the area of strength and conditioning in sport and enable them to describe its role in maximising athletic performance. The Unit also aims to provide candidates with the knowledge that will allow them to design appropriate programmes and to demonstrate the key exercises effectively.

On completion of this Unit, the candidate will be able to:

- 1 Demonstrate an understanding of the role that strength and conditioning plays in sports performance.
- 2 Design a periodised resistance-training programme.
- 3 Demonstrate resistance-training exercises in a safe and effective manner.

Recommended prior knowledge and skills

Access is at the discretion of the centre.

Credit points and level

1 Higher National Unit credit at SCQF level 7: (8 SCQF credit points at SCQF level 7*)

**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, Information and Communication Technology, Numeracy* and *Working with Others* in this Unit, although 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 HNC/HND Coaching and Developing Sport.

Assessment

Candidates are required to demonstrate a clear grasp of the theoretical knowledge contained in the Unit. A closed–book assessment of restricted response answers could be used for Outcome 1. Outcome 2 will be assessed by means of a project where the candidate is required to design a periodised resistance-training programme. Outcome 3 will be assessed by means of a practical assessment and recorded evaluation.

Higher National Unit specification: statement of standards

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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

Demonstrate an understanding of the role that strength and conditioning plays in sports performance

Knowledge and/or Skills

- ◆ Identification and description of a range of strength and conditioning techniques.
- ◆ Definitions of strength, speed, power and endurance and their importance in sports performance.
- ◆ Common misconceptions about resistance training.
- ◆ Benefits of strength and conditioning.
- ◆ Physiological adaptations to resistance training.

Evidence Requirements

To achieve this Outcome each candidate will have to record evidence to demonstrate their understanding of all aspects of the Knowledge and Skills section. The assessment instrument will be a restricted response question paper to cover all of the Knowledge and Skills.

Assessment Guidelines

Recorded evidence must be provided to prove that the candidate can demonstrate an understanding of strength and conditioning and its importance in developing athletic performance.

Higher National Unit specification: statement of standards (cont)

Unit title: Strength and Conditioning: An Introduction

Outcome 2

Design a periodised resistance-training programme.

Knowledge and/or Skills

- ◆ Training needs analysis.
- ◆ Acute programme variables.
- ◆ Application of principles in the design of a periodised strength and conditioning programme.

Evidence Requirements

Candidates must provide evidence to demonstrate their Knowledge and/or Skills by showing that they can demonstrate their understanding of all aspects of the Knowledge and/or Skills section. The assessment will take the form of a project in which the candidate will design a periodised strength and conditioning programme for at least two clients.

The programme should follow the principles of specificity and incorporate training methods to improve, strength, speed, power and endurance over a period of at least six weeks.

The project should be in the region of 1,000 words in length and must include a rationale for the training programme.

Assessment Guidelines

Candidates should be encouraged to utilise a wide range of training techniques.

When designing these practices, candidates should be encouraged to consider the specific needs of the individual.

Higher National Unit specification: statement of standards (cont)

Unit title: Strength and Conditioning: An Introduction

Outcome 3

Demonstrate strength and conditioning exercises in a safe and appropriate manner.

Knowledge and/or Skills

- ◆ General safety considerations in the weights room.
- ◆ Competent demonstration of strength exercises.
- ◆ Competent demonstration of power training exercises.
- ◆ Competent demonstration of speed and agility exercises.
- ◆ Competent demonstration of endurance exercises.

Evidence Requirements

Candidates will need to provide evidence to demonstrate the key Knowledge and/or Skills by showing that they can demonstrate technical competency for two exercises for each of the following:

- ◆ strength
- ◆ power
- ◆ speed
- ◆ endurance

An observation checklist completed by the assessor and an evaluation completed by the candidate will be the instruments of assessment.

Assessment Guidelines

Practical evidence that the candidate can demonstrate strength, speed, power and endurance exercises in a safe and effective manner could be gathered in a variety of ways.

In addition supplementary oral evidence may be used to ensure that the candidate is aware of the key factors relating to safe participation. This must be recorded.

Higher National Unit specification: support notes

Unit title: Strength and Conditioning: An Introduction

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

A key element in this Unit is the application of principles and knowledge from scientific research to strength and conditioning and the books in the bibliography will be invaluable in this regard. The application of this scientific knowledge should be reinforced during practical sessions. This Unit is an introduction to the level 8 Unit *Strength and Conditioning*.

Outcome 1:

- ◆ Strength and Conditioning techniques:
 - resistance training (free weight, body weight and resistance machines)
- ◆ Definitions:
 - strength
 - speed
 - power
 - endurance
- ◆ Misconceptions:
 - resistance training is unsafe
 - is unsuitable for children
 - increases injury risk
 - decreases flexibility
 - decreases speed and flexibility
 - results in excessive muscle growth
- ◆ Benefits:
 - decreased injury risk
 - improved strength
 - improved explosive power and improved speed
 - improvements in body composition

Note that these are examples and not an exhaustive list.

- ◆ Physiological Adaptations:
 - musculoskeletal adaptations:
 - muscle hypertrophy
 - stretch-reflex/stretch-shortening cycle
 - increased bone mineral density
 - stronger tendons and connective tissues)

Higher National Unit specification: support notes (cont)

Unit title: Strength and Conditioning: An Introduction

Outcome 2:

- ◆ Training Needs Analysis:
 - gathering the necessary information to design a resistance-training programme:
 - main muscle groups
 - strength status
 - joint angles and range of motion
 - muscle balance considerations
 - movement speed

- ◆ Programme Variables:
 - choosing the actual content of a training programme:
 - periodisation concerns, eg in season/off season
 - time of workouts;
 - frequency of workouts
 - choice of exercises
 - exercise order
 - number of sets
 - number of repetitions
 - rest time between sets

Outcome 3:

- ◆ General safety considerations:
 - storage and maintenance of equipment
 - access
 - facility layout
 - breathing
 - spotting requirement
 - importance of correct technique

- ◆ Competent Demonstrations:
 - accurate technique
 - knowledge of coaching points
 - posture
 - breathing and timing control.

Higher National Unit specification: support notes (cont)

Unit title: Strength and Conditioning: An Introduction

- ◆ Strength Training exercises:
 - back squat
 - front squat
 - lunges
 - bench press
 - incline
 - bench press
 - deadlift
 - stiff-legged deadlift
 - bent over row
 - lat pulldown
 - chin ups

The list is not exhaustive. Other exercises and equipment may be used.

- ◆ Power Training exercises:
 - Olympic lifts and derivatives
 - snatch
 - clean and jerk
 - power clean and snatch
 - shrugs
 - push jerk
 - split jerk

Again this is not an exhaustive list.

- ◆ Speed and agility:
 - sprinting technique
 - postural control
 - centre of gravity
 - base of support
 - maximal straight line speed
- ◆ Endurance:
 - assistance exercises
 - appropriate intensity to promote endurance:
 - circuit training
 - functional strength exercises, etc

Guidance on the delivery and assessment of this Unit

This Unit would be best delivered during the first year of the HND programme, and should ideally be sequenced after candidates have completed both of the following Units: *Principles of Fitness Training* and *Anatomy, Physiology and Energy Systems*.

Higher National Unit specification: support notes (cont)

Unit title: Strength and Conditioning: An Introduction

Open learning

Open learning implies that, candidates study out with the centres using materials provided, it will be necessary to attend the centre for assessment purposes. For further information of Open and Distance Learning, please refer to the SQA publication, Assessment and Quality Assurance of Open and Distance Learning (SQA 2000).

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

Candidates may develop skills in *Working with Others* during their study stage. Skills in *Oral Communication* will be developed as candidates are required to try to communicate effectively and calmly with the injured person and the candidate is also required to make a written report in the case of certain accidents or incidents or diseases. Skills may be developed therefore in *Problem Solving*.

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: An Introduction

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.

In this Unit you will investigate the role of strength and conditioning in sport, and examine its potential to improve performance in a variety of ways. You will also investigate the principles of periodised programme design, which will allow you to design a sport-specific resistance-training programme for a sport of your choice. Finally, you will participate in several strength, power, speed and endurance sessions to enable you to develop the skills required for progression and learning to become an effective strength and conditioning coach. This is a major feature of the level 8 Unit *Strength and Conditioning for Sports Performance*.

Assessment for this Unit will take the form of a restricted response assessment; an extended response project where you will design a strength and conditioning programme and describe why you have designed it in the way you have; and practical assessments where you will be required to demonstrate your practical ability.