General information for centres

Unit title: Measuring Fitness in Exercise and Sport

Unit code: F50A 35

Unit purpose: This Unit is designed to provide candidates with sound theoretical and functional knowledge in relation to the measurement of aerobic and anaerobic fitness, strength, flexibility and body composition through the application of various methods to measure their influence in exercise and sports performance.

On completion of the Unit the candidate should be able to:

1 Measure body composition and analyse results.
2 Measure flexibility and analyse results.
3 Measure muscular strength and endurance and analyse results.
4 Measure aerobic and anaerobic power and analyse results.

Credit points and level: 1 HN 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.*

Recommended prior knowledge and skills: Access to this Unit is at the discretion of the centre. However, it is recommended that candidates have completed the following HN Units, prior to undertaking this Unit:

DP8E 34 *Exercise Principles and Programming*
DW60 34 *Exercise Physiology and Anatomy*
DP2L 34 *Health Screening*

Core Skills: There are opportunities to develop the Core Skills of Oral Communication and Written (reading) *Communication* at SCQF level 6, Written (writing) *Communication* at SCQF level 5, *Information Technology* at SCQF level 6, *Problem Solving* at SCQF level 6, *Numeracy* Using Numbers at SCQF level 6, *Numeracy* Using Graphical Information at SCQF level 5 and *Working with Others* at SCQF level 6 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.

General information for centres (cont)

Assessment: This Unit could be assessed by the utilisation of a 'Candidate Log Book' which encompasses all of the relevant practical fitness testing/measuring requirements across all Outcomes. It may be that assessing each Outcome individually is most straightforward and easy to manage but if Outcomes can be combined or assessments integrated with other Units to lessen the assessment load on the candidate then this opportunity should be taken. For each Outcome, performance checklists may be utilised to record evidence of practical competence when performing each fitness measurement technique. In addition, the candidate could record fitness measurement results and give an analysis of results for each applied test across all Outcomes.

Higher National Unit specification: statement of standards

Unit title: Measuring Fitness in Exercise and Sport

Unit code: F50A 35

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

Measure body composition and analyse results

Knowledge and/or Skills

- Test protocol
- Body composition measurements
- Safety procedures
- Results analysis

Evidence Requirements

Candidates will need to provide evidence to demonstrate their Knowledge and/or Skills by showing that they can:

- apply test protocol and safety procedures throughout each measurement procedure
- measure body composition using skinfolds and bioelectrical impedance
- analyse and evaluate body composition measurements

Assessment Guidelines

Assessment for this Outcome could be by practical application of the above body composition measuring methods. Performance checklists may be utilised to record evidence of practical competence when performing each fitness measurement technique. In addition, the candidate could record fitness measurement results for a client and give an analysis of results (percentage body fat) for each assessment method. This may be documented within the 'Candidate Log Book'.

Higher National Unit specification: statement of standards (cont)

Unit title: Measuring Fitness in Exercise and Sport

Outcome 2

Measure flexibility and analyse results

Knowledge and/or Skills

- Test protocol
- Flexibility measurements
- Safety procedures
- Results analysis

Evidence Requirements

Candidates will need to provide evidence to demonstrate their Knowledge and/or Skills by showing that they can:

- apply test protocol and safety procedures throughout each measurement procedure
- measure joint flexibility using goniometry
- analyse and evaluate flexibility measurements

Assessment Guidelines

Assessment for this Outcome could be by practical application of the above flexibility measuring methods. Performance checklists may be utilised to record evidence of practical competence when performing each fitness measurement technique. In addition, the candidate could record fitness measurement results for a client and give an analysis of flexibility results for each assessment method. This may be documented within the 'Candidate Log Book'.

Higher National Unit specification: statement of standards (cont)

Unit title: Measuring Fitness in Exercise and Sport

Outcome 3

Measure muscular strength and endurance and analyse results

Knowledge and/or Skills

- Test protocol
- Muscular strength testing
- Safety procedures
- Results analysis

Evidence Requirements

Candidates will need to provide evidence to demonstrate their Knowledge and/or Skills by showing that they can:

- apply test protocol and safety procedures throughout each measurement procedure
- measure muscular strength utilising explosive, maximal and endurance techniques
- analyse and evaluate muscular strength measurements

Assessment Guidelines

Assessment for this Outcome could be by practical application of the above muscular strength measuring methods. Performance checklists may be utilised to record evidence of practical competence when performing each fitness measurement technique. In addition, the candidate could record fitness measurement results for a client and give an analysis of muscular strength results for each assessment method. This may be documented within the 'Candidate Log Book'.

Higher National Unit specification: statement of standards (cont)

Unit title: Measuring Fitness in Exercise and Sport

Outcome 4

Measure aerobic and anaerobic power and analyse results

Knowledge and/or Skills

- Test protocol
- Aerobic and anaerobic power testing
- Safety procedures
- Results analysis

Evidence Requirements

Candidates will need to provide evidence to demonstrate their Knowledge and/or Skills by showing that they can:

- apply test protocol and safety procedures throughout each measurement procedure
- measure aerobic and anaerobic power using a minimum of one method for each
- analyse and evaluate results for aerobic and anaerobic power measurements

Assessment Guidelines

Assessment for this Outcome could be by practical application of the above aerobic and anaerobic power measuring methods. Performance checklists may be utilised to record evidence of practical competence when performing each fitness measurement technique. In addition, the candidate could record fitness measurement results for a client and give an analysis of aerobic and anaerobic power results for each assessment method. This may be documented within the 'Candidate Log Book'.

Administrative Information

Unit code: F50A 35

Unit title: Measuring Fitness in Exercise and Sport

Superclass category: MD

Original date of publication: August 2008

Version: 01

History of Changes:

Version	Description of change	Date

Source: SQA

SQA acknowledges the valuable contribution that Scotland's colleges have made to the development of Higher National qualifications.

Additional copies of this Unit specification can be purchased from the Scottish Qualifications Authority. Please contact the Customer Contact Centre for further details, telephone 0845 279 1000.

Higher National Unit specification: support notes

Unit title: Measuring Fitness in Exercise and Sport

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

This Unit is intended to develop the knowledge gained during the HNC Fitness Health and Exercise. The background for this Unit will come from (DP8E34) *Exercise Principles and Programming*, (DW6034) *Exercise Physiology and Anatomy* and (DP2L34) *Health Screening* which allows this Unit to investigate and explore more specific areas and methods of assessing components of fitness. It is anticipated that the Knowledge and Skills gained through this Unit will effectively equip the candidate for when they begin to work in industry. By covering a wide range of more advanced fitness assessment methods than previously covered within the HNC Fitness, Health and Exercise year, the candidate will be equipped with the knowledge and experience to confidently apply these tests, interpret and evaluate results and apply a specific exercise intervention where appropriate. It is for this reason that the Knowledge and Skills should be covered by allowing candidates to practise physically applying each assessment method. Repeated practice in the application of each test will be of great benefit to each candidate in building confidence in administering each assessment method. Class discussions relating to each test protocol and safety considerations will help to instil the importance of safety and standardisation across the entire battery of assessment methods. The following paragraphs contain suggestions on the types of learning and teaching techniques which may assist in making the learning experience more successful for the candidates.

Guidance on the delivery and assessment of this Unit

This Unit, which is likely to form part of a Group Award, is designed to develop the knowledge and understanding of candidates likely to be employed within sports science related industries.

Outcome 1 focuses on the assessment and subsequent analysis and evaluation of body composition through the use of skinfold measurement and bioelectrical impedance. It is suggested that both assessment methods will be demonstrated by the tutor within the class group, detailing all test protocols and parameters. Group work could certainly be utilised in order for candidates to gain experience in the quality application and interpretation of each method, results of which could be noted and commented on within the 'Candidate Log Book'. The use of performance checklists would help to minimise the assessment load on the candidate and help to dedicate more time to the quality application of each fitness assessment method.

Outcome 2 (flexibility measurement), Outcome 3 (muscular strength and endurance measurement) and Outcome 4 (aerobic and anaerobic power measurement) could be assessed in a similar way as Outcome 1. This would help to maintain consistency of assessment methods across the entire Unit while minimising the assessment load and maximising direct application of each test thus increasing candidate competence and confidence in the application of each measurement. Throughout all Outcomes results may be analysed and compared to published norms and/or compared to class results.

Higher National Unit specification: support notes (cont)

Unit title: Measuring Fitness in Exercise and Sport

Opportunities for developing Core Skills

Written Communication — through the answers given in the Candidate Log Book, candidates will have the opportunity to develop skills in Written Communication. (SCQF level 6).

Oral Communication — by interacting with test subjects, the candidate will be able to practice their Oral Communication techniques when explaining test protocols and giving interpretation and evaluation of results. (SCQF level 6).

Problem Solving — through the physical application of each test and group work activities, the candidate will be involved with the set up, administration and clear up of each measurement. Problem solving will play a part here in terms of time, equipment and space/accommodation requirements. (SCQF level 6).

Working with Others — group work will form the basis of class discussions and debates and enhance the candidate's ability to work successfully with other class members (SCQF level 6).

Numeracy — by using graphical information for results analysis and using numbers to calculate results. (SCQF levels 5 and 6 respectively).

Open learning

Due to the practical nature of this particular Unit, open learning is unlikely to be a suitable option.

Candidates with disabilities and/or additional support needs

The additional support needs of individual candidates should be taken into account when planning learning experiences, selecting assessment instruments, or considering alternative Outcomes for Units. Further advice can be found in the SQA document *Guidance on Assessment Arrangements for Candidates with Disabilities and/or Additional Support Needs* **(www.sqa.org.uk)**.

General information for candidates

Unit title: Measuring Fitness in Exercise and Sport

This Unit is designed to provide you with sound theoretical and functional knowledge of aerobic and anaerobic fitness, strength, flexibility and body composition through the application of various methods to measure their influence in exercise and sports performance.

The Outcomes that you will cover are:

1 Measure body composition and analyse results.
2 Measure flexibility and analyse results.
3 Measure muscular strength and endurance and analyse results
4 Measure aerobic and anaerobic power and analyse results.

You will be required to perform a range of various fitness tests which are designed to measure the components of fitness as detailed above. You will be expected to adhere to all test protocols and safety issues while applying each test in a competent and confident manner. Following the implementation of each fitness measurement, you will be asked to analyse and evaluate the results gained either against population norms or your peer group. On successful completion of this Unit, you will be equipped to competently and confidently administer a variety of fitness tests within the various leisure/sporting industries.

Access to this Unit is at the discretion of the centre and may be taken as a stand-alone Unit. However, it is recommended that candidates have completed the following HN Units, prior to undertaking this Unit: *Exercise Principles and Programming* (DP8E 34); *Exercise Physiology and Anatomy* (DW60 34); *Health Screening* (DP2L 34). These Units will provide valuable and essential information which will ultimately help you to perform, achieve and attain this Unit. It is important that you draw on the Knowledge and Skills that you have learned from these Units and apply these to the work that you will cover throughout this particular module.

Take the opportunity to become as involved as possible in all practical aspects of the class and in all group discussions. The information and experience gained here will give you a better understanding of the issues involved with measuring fitness.

Assessment for this Unit will consist of practical assignments and recorded on and a 'Candidate Log Book' where you will be required to record fitness test results and give your analysis and evaluation of each. The log book will cover all Outcomes for the Unit.

Opportunities for developing Core Skills

Written Communication — through the answers given within your log book, you will have the opportunity to develop skills in Written Communication. (SCQF level 6 and SCQF level 5 for Writing).

Oral Communication — by interacting with test subjects, you will be able to practice your oral communication techniques when explaining test protocol and giving interpretation and evaluation of results. (SCQF level 6).

Problem Solving — through the physical application of each test and group work activities, you will be involved with the set up, administration and clear up of each measurement. Problem solving will play a part here in terms of time, equipment and space/accommodation requirements. (SCQF level 6).

General information for candidates (cont)

Unit title: Measuring Fitness in Exercise and Sport

Working with Others — group work will form the basis of class discussions and debates and enhance your ability to work successfully with other class members (SCQF level 6).

Information Technology — results and analysis may be recorded using IT facilities. (SCQF level 6).

Numeracy — you will use graphical information for results analysis and using numbers to calculate results. (SCQF levels 5 and 6 respectively).