



Higher National Unit specification

General information

Unit title: Exercise Principles and Programming

Unit code: H4TC 34

Superclass: MA

Publication date: August 2013

Source: Scottish Qualifications Authority

Version: 01

Unit purpose

The Unit is intended to encompass the major functions of the Fitness, Health and Exercise professional to include the assessment of a client's current fitness, the prescription on an intervention strategy and the delivery of an effective exercise experience. The Unit will help the learner apply their knowledge of fitness testing and training resulting in the practical delivery of a client specific session. Knowledge of adaptations to exercise and client adherence factors will allow learners to approach these primary professional functions competently and confidently.

Outcomes

On successful completion of the Unit the learner will be able to:

- 1 Describe the components of Health Related Physical Fitness (HRPF), examine the relationship between Health Related Fitness, Physical activity and exercise, and assess client participation and adherence issues.
- 2 Describe health related client participation issues that the fitness professional should consider when working with a client.
- 3 Perform fitness tests to assess Health Related Physical Fitness, and evaluate the health status of a client.
- 4 Explain and apply the principles of exercise prescription appropriate for the improvement of Health Related Physical Fitness.
- 5 Design a client specific programme; deliver and evaluate an effective exercise session for a specific client or client group.

Higher National Unit specification: General information (cont)

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Credit points and level

2 Higher National Unit credits at SCQF level 7: (16 SCQF credit points at SCQF level 7)

Recommended entry to the Unit

This Unit has been designed as a core Unit in the Group Award HNC/HND Fitness, Health and Exercise. It is anticipated that learners will therefore have studied related material either at this or lower SCQF levels prior to undertaking this Unit. Ultimately at the discretion of the delivering centre.

Core Skills

Opportunities to develop aspects of Core Skills are highlighted in the Support Notes for this Unit specification.

There is no automatic certification of Core Skills or Core Skill components in this Unit.

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.

The Assessment Support Pack (ASP) for this Unit provides assessment and marking guidelines that exemplify the national standard for achievement. It is a valid, reliable and practicable assessment. Centres wishing to develop their own assessments should refer to the ASP to ensure a comparable standard. A list of existing ASPs is available to download from SQA's website (<http://www.sqa.org.uk/sqa/46233.2769.html>)

Equality and inclusion

This Unit specification has been designed to ensure that there are no unnecessary barriers to learning or assessment. The individual needs of learners should be taken into account when planning learning experiences, selecting assessment methods or considering alternative evidence.

Further advice can be found on our website www.sqa.org.uk/assessmentarrangements

Higher National Unit specification: Statement of standards

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Acceptable performance in this Unit will be the satisfactory achievement of the standards set out in this part of the Unit specification. All sections of the statement of standards are mandatory and cannot be altered without reference to SQA.

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. Learners 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

Describe the components of Health Related Physical Fitness (HRPF), examine the relationship between Health Related Fitness, Physical activity and exercise, and assess client participation and adherence issues.

Knowledge and/or Skills

- ◆ Components of Health related fitness
- ◆ The concept of healthy behaviour, and its relationship to physical activity
- ◆ Current trends in health behaviour
- ◆ Common barriers to exercise participation
- ◆ Exercise adherence, motivation and goal setting

Outcome 2

Describe health related client participation issues that the fitness professional should consider when working with a client.

Knowledge and/or Skills

- ◆ Health/medical considerations (this may be developed from Outcome 2)
- ◆ Client contra indications to exercise
- ◆ Describe the effects of exercise interventions, and explain basic health behaviour change techniques
- ◆ The impact of previous exercise experience, exercise preferences, medical history, current health status, lifestyle factors, and socio-economic/ demographic issues

Outcome 3

Perform fitness tests to assess Health Related Physical Fitness, and evaluate the health status of a client.

Knowledge and/or Skills

- ◆ Static tests for health: resting heart rate, height, weight, body mass index (BMI), blood pressure, waist:hip ratio, body composition, low back flexibility, lung function
- ◆ Dynamic tests for components of Health Related Physical Fitness: cardio-vascular tests, strength tests, flexibility tests, local muscular endurance tests
- ◆ Testing procedures and protocols
- ◆ Interpretation of results and post-test feedback

Higher National Unit specification: Statement of standards (cont)

Unit title: Exercise Principles and Programming

Outcome 4

Explain and apply the principles of exercise prescription appropriate for the improvement of Health Related Physical Fitness.

Knowledge and/or Skills

- ◆ FITT (Frequency, intensity, time, type) principles
- ◆ Progression
- ◆ Overload
- ◆ Specificity
- ◆ Reversibility.
- ◆ Current guidelines
- ◆ Monitoring exercise intensity
- ◆ Rationale for warm-up and cool-down

Outcome 5

Design a client specific programme and deliver an effective exercise session for a specific client or client group.

Knowledge and/or Skills

- ◆ Session planning
- ◆ Client specific content (health status, exercise and medical history, personal preferences)
- ◆ Organisational, facility and group management issues
- ◆ Communication skills
- ◆ Motivation skills
- ◆ Technical skills
- ◆ Corrective feedback

Evidence Requirements for this Unit

Learners will need to provide evidence to demonstrate their Knowledge and/or Skills across all Outcomes by showing that they can:

Outcome 1

Evidence for this Outcome will be generated from closed-book, restricted response questions. Learners will need to provide evidence to demonstrate knowledge of all elements listed below showing that they can:

- ◆ Identify the components of health related fitness.
- ◆ Describe the significance of health related physical fitness in terms of an individual's health.
- ◆ Discuss the concept of 'healthy behaviour' and its relationship to physical activity
- ◆ Identify current trends in the health of the nation.

Higher National Unit specification: Statement of standards (cont)

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- ◆ Identify common barriers (actual and perceived) to exercise participation and discuss related adherence issues.
- ◆ Explain the concept of motivation with respect to exercise and health.
- ◆ Explain and apply the principles of goal setting.

Outcome 2

Evidence for this Outcome will be generated from restricted response questioning. Learners will need to provide evidence to demonstrate their Knowledge and/or Skills by showing that they can:

- ◆ Identify and explain health/medical contraindications that could have an influence on an individual's ability to participate in exercise.
- ◆ Identify exercise intervention strategies, suggest strategies to minimise contraindications, and suggest appropriate client activity to implement these.
- ◆ Identify, and explain basic health behaviour change theories.

Outcome 3

Learners will need to provide evidence to demonstrate knowledge of all elements listed below showing that they can:

- ◆ Identify appropriate static and dynamic tests for the assessment of health and HRPF.
- ◆ Ensure all relevant pre-test considerations are discussed with the client.
- ◆ Adhere to recognised protocols for the selected tests.
- ◆ Record client details and test results in an appropriate format.
- ◆ Analyse test results and provide accurate guidance and advice on their implications.

Outcome 4

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

- ◆ State recognised guidelines for the development of cardio vascular endurance, local muscular endurance, strength, and flexibility.
- ◆ Explain selected training principles.
- ◆ Apply recognised guidelines for exercise prescription.
- ◆ Describe methods of monitoring exercise intensity.
- ◆ Explain the rationale and current guidelines relating to warm-up and cool down.

Higher National Unit specification: Statement of standards (cont)

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Outcome 5

Learners will need to provide evidence to demonstrate knowledge of all elements listed below showing that they can:

- ◆ Provide a structured written programme detailing session theme and expectations, organisation of equipment and management issues to include client and facility safety. Learners should include both resistance and CV exercise, together with guidance on warmup and cooldown.
- ◆ Rationalise and justify the programme design and session content referring to principles of training (Overload, specificity, and reversibility).
- ◆ Deliver a session to a client/client group demonstrating effective presentation skills in terms of client interaction, voice projection, demonstrations and feedback. The selected session should be presented in its context within the programme.
- ◆ Appropriate client observation and interaction to include fault recognition and correction, positive verbal feedback and motivation.
- ◆ Provide a record post session evaluation to be recorded by the instructor detailing good practice and any additions to future sessions.



Higher National Unit Support Notes

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Unit Support Notes are offered as guidance and are not mandatory.

While the exact time allocated to this Unit is at the discretion of the centre, the notional design length is 80 hours.

Guidance on the content and context for this Unit

It is recommended that students have completed the *Health Screening*, and have covered at least Outcomes 1 and 2 of *Exercise Physiology and Anatomy* prior to commencing this Unit.

Outcome 1

- ◆ Components of health related physical fitness to include Strength, Cardio-vascular endurance, flexibility, local muscular endurance.
- ◆ Benefits of exercise may include increased physical work capacity; increased CV and respiratory endurance; decreased risk of Coronary Heart Disease; changes in body metabolism; delay of physiological ageing effects; psychological effects and benefits.
- ◆ Definitions and concepts of health and healthy behaviour, giving cognisance to current national and international trends (eg Use of Government statistics and Surveys).
- ◆ Barriers to exercise participation (actual and/or perceived) and their effects on exercise/physical activity adherence. Barriers are generally considered to be socio-economic or religious in nature. Do not confuse these with contra-indications, which are generally health related.
- ◆ Motivation (intrinsic/extrinsic) and goal setting, to include basic concepts of health behaviour change and SMART targets.

Outcome 2

- ◆ Contra indications may include age (young and old), pregnancy, gender, postural issues and spinal alignment, medical conditions (acute and chronic), nutrition.
- ◆ Learners should be able to identify exercise/physical activity interventions appropriate to specific clients.
- ◆ Socio-demographic factors may include; demographic variables; occupation; ethnicity; education; income; obesity; age; gender; accessibility to facilities.
- ◆ Adherence factors may include; cognitive variables; beliefs; values; attitudes; motivation; goal setting; social support; time.
- ◆ Behaviour change theory should be considered — examples (not exhaustive) are the Health Belief Model, Planned Behaviour Theory, and Social Cognitive Theory.

Higher National Unit Support Notes (cont)

Unit title: Exercise Principles and Programming

Outcome 3

- ◆ It is important that the student has an understanding of health related physical fitness and how it may be measured. Key components may be defined as cardio-vascular endurance, local muscular endurance, strength and flexibility.
- ◆ The testing process should be considered in the context of use in a health and fitness environment, so learners should be able to adequately prepare and inform clients about the process, giving cognisance to screening and informed consent.
- ◆ Static tests should include resting heart rate, height, weight, body mass index (BMI), blood pressure, waist:hip ratio, body composition, low back flexibility, lung function
- ◆ Cardio-vascular tests may include; Step tests; Walking tests; Multi stage tests; Cooper 12 minute run, Astrand test (Not an exhaustive list).
- ◆ Body Composition tests may include; Skinfold measurement; Bio electrical impedance.
- ◆ Strength tests; Grip strength; 1 RM.
- ◆ Local muscular endurance tests may include; Press up tests; Abdominal curl tests.
- ◆ Flexibility tests; Sit and reach; assessment of normal range of motion for selected joints.
- ◆ Learners should be able to analyse and interpret test results, draw meaningful conclusions, and make appropriate recommendations based on results.
- ◆ It is stressed that production of client results and guidance should mirror the expectations of a professional environment.

Outcome 4

- ◆ Components of health related physical fitness: Cardio-vascular endurance, local muscular endurance, strength, flexibility.
- ◆ Principles of training: specificity, overload, reversibility.
- ◆ The importance of warmup and cooldown.
- ◆ Monitoring: Karvonen (or other accepted Heartrate intensity calculation) formula, Use of wireless heartrate telemetry, perceived rate of exertion, talk test, observation.
- ◆ Application of FITT (Frequency, intensity, time, and type of exercise): Training thresholds, training effects.

Outcome 5

- ◆ Detailed programme and session planning. Rationale is required both for the overall programme, and to contextualise the nominated session.
- ◆ Awareness and application of guidelines for both CV and resistance programming.
- ◆ Awareness and application of guidelines for warmup and cooldown.
- ◆ Awareness of Health and Safety Issues including Risk Assessment.
- ◆ Safe and effective session delivery in line with current accepted National Occupational Standards.
- ◆ Observation, communication, motivation and technical skills.
- ◆ Post session objective evaluation to be further informed by client evaluation sheets.

Higher National Unit Support Notes (cont)

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Guidance on approaches to delivery of this Unit

The Unit will be delivered as one of a number of core Units that will fully prepare the learner for work as Fitness, Health and Exercise professional.

The Unit is divided into five Outcomes with various forms of evidence gathering. Restricted response papers, a fitness testing results portfolio, extended response case study and direct observation of the learner with evidence recorded by the assessor checklist should all be adopted.

Guidance on approaches to assessment of this Unit

Evidence can be generated using different types of assessment. There may be other methods that would be more suitable to learners.

Centres are reminded that prior verification of centre-devised assessments would help to ensure that the national standard is being met. Where learners experience a range of assessment methods, this helps them to develop different skills that should be transferable to work or further and higher education.

Outcome 1 and 2

Evidence for this Outcome will be generated from restricted response questioning regarding the elements of HRPF and their significance to health and physical activity, barriers and contra-indications to exercise, and theory of health behaviour change.

Outcome 3

Learners will carry out static and dynamic fitness tests to establish baseline health parameters. Testing will be observed against designated tests protocols which must be adhered to. Once tested the results should be analysed against available norms and appropriate client feedback offered. Test selection and delivery should be appropriate to the client needs and particular health status. Results will be recorded in a portfolio and these results may be used again as the basis of a case study in Outcomes 4 and 5.

Outcomes 3–5

Here a combination of restricted response questions and an extended response case study will be the major part of learner evidence. Utilising fitness test scores from the portfolio, students should devise an exercise intervention strategy to encompass all elements of exercise prescription, client participation issues and the delivery of an effective exercise experience. After the delivery of the session the learner must produce an objective review of their performance with action points for improvements to future delivery.

The practical elements of the class will be directly observed by assessors who will record organisational and planning tasks, communication, feedback and motivation, demonstration competence and technical skills, and general appropriateness of the session. Feedback will then be offered to the learner.

Higher National Unit Support Notes (cont)

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Opportunities for 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 social software. Centres which wish to use e-assessment must ensure that the national standard is applied to all learner evidence and that conditions of assessment as specified in the Evidence Requirements are met, regardless of the mode of gathering evidence. The most up-to-date guidance on the use of e-assessment to support SQA's qualifications is available at www.sqa.org.uk/e-assessment.

Opportunities for developing Core and other essential skills

The Unit is intended to encompass the major functions of the Fitness, Health and Exercise professional to include the assessment of a client's current health and fitness status, the prescription on an intervention strategy and the delivery of an effective exercise experience. The Unit will help the learner apply their knowledge of fitness testing and training resulting in the practical delivery of a client specific session. Knowledge of adaptations to exercise and client adherence factors will allow learners to approach these primary professional functions competently and confidently.

Delivery of the Unit will also help learners to develop reflective skills enabling them to review and evaluate their own performance.

All elements of the Core Skill of *Problem Solving*, that is, planning and organising, critical thinking, and reviewing and evaluating, could be developed and enhanced in the Unit as learners plan, undertake and evaluate the complex practical tasks required to provide in the preparation for teaching sessions, including designing, administering and analysing questionnaires for the client, is critical to achievement. Identifying implications, adaptations and all factors which impact on exercise and safety for clients in order to overcome any perceived potential difficulties will further involve a high level of critical thinking. Justifying and adopting effective strategies which reflect and apply current theory will be an integral aspect of each session. Producing and delivering a balanced, safe programme should allow on-going opportunities for review and potential adjustment.

There are many opportunities to enhance skills in managing co-operative *Working with Others* in programmes. Elements of negotiation are intrinsic to the process of fitness testing, and all stages of planning and delivering sessions. A significant level of verbal and non-verbal communication skills will be developed in order to present complex information sensitively and in a style and format most conducive to learning. Learners should be aware of how to:

- ◆ collate, organise and structure information effectively.
- ◆ adapt language, register and style.
- ◆ emphasise and signpost key points.
- ◆ use effective verbal non-verbal communication techniques.
- ◆ assure compliance and safety.

History of changes to Unit

Version	Description of change	Date

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General information for learners

Unit title: Exercise Principles and Programming

This section will help you decide whether this is the Unit for you by explaining what the Unit is about, what you should know or be able to do before you start, what you will need to do during the Unit and opportunities for further learning and employment.

The Unit is intended to encompass the major functions of the Fitness, Health and Exercise professional to include the assessment of a client's current health and fitness status, the prescription on an intervention strategy and the delivery of an effective exercise experience. The Unit will help you apply your knowledge of fitness testing and training resulting in the practical delivery of a client specific session. Knowledge of adaptations to exercise and client adherence factors will allow you to approach these primary professional functions competently and confidently.

The Unit is divided into five Outcomes with various forms of evidence gathering. Restricted response papers, a fitness testing results portfolio, extended response case study and direct observation by staff should all be adopted.

Outcome 1 and 2

Evidence for these Outcomes will be generated from restricted response questioning regarding the elements of HRPF and their significance to health and physical activity, barriers and contra-indications to exercise, and theory of health behaviour change.

Outcome 3

Static fitness tests with designated test protocols should be carried out to establish baseline health parameters, results should be analysed against population norms and appropriate client feedback offered. Administer to multiple clients a battery of tests designed to assess health related fitness components. Test selection and delivery will be assessed and appropriate to the client needs and particular health status. Results will be recorded in a client results portfolio and these results will be used again as the basis of a case study in Outcomes 4 and 5.

Outcomes 4 and 5

Here a combination of restricted response questions and an extended response case study will be the major part of learner evidence. Utilising fitness test scores from the portfolio, students should devise an exercise intervention strategy to encompass all elements of exercise prescription, client participation issues and the delivery of an effective exercise experience. After the delivery of the session you must produce an objective review of your performance with action points for improvements to future delivery.

The practical elements of the class will be directly observed by assessors who will record organisational and planning tasks, communication, feedback and motivation, demonstration competence and technical skills, and general appropriateness of the session. Feedback will then be offered to you.