

Higher National Unit specification

General information for centres

Unit title: Dance: Anatomy and Injury Prevention for Dancers

Unit code: F1LE 34

Unit purpose: This Unit is designed to introduce candidates to some basic aspects of anatomy relevant to dance, movement and exercise and to identify good practice in injury prevention.

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

- 1 Demonstrate knowledge of the skeletal and muscular systems in relation to dance and movement.
- 2 Demonstrate knowledge of the respiratory and cardiovascular system in relation to dance and exercise.
- 3 Identify and describe methods of injury prevention in dance and exercise.

Credit points and level: 1 HN 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.*

Recommended prior knowledge and skills: While entry to this Unit will be at the discretion of the centre, it is recommended that candidates possess knowledge of dance technique at SCQF level 6 or equivalent. Previous knowledge of anatomy and physiology would be useful.

Core Skills: There are opportunities to develop the Core Skills of Communication and Problem Solving to SCQF level 5 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.

Assessment: This Unit could be assessed by a single instrument of assessment covering all three Outcomes, comprising short answer questions undertaken in closed book conditions. Alternatively, each Outcome could be assessed separately.

Higher National Unit specification: statement of standards

Unit title: Dance: Anatomy and Injury Prevention for Dancers

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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 knowledge of the skeletal and muscular systems in relation to dance and movement

Knowledge and/or Skills

- ◆ Skeletal system
- ◆ Muscular system
- ◆ Action of muscles and skeleton

Evidence Requirements

Evidence for the knowledge and/or skills in this Outcome will be generated through sampling. This evidence can be presented in response to specific questions. To ensure that candidates will not be able to foresee which items they will be questioned about, a different sample of **two** of the **three** knowledge and/or skills items is required each time the Outcome is assessed. Candidates must provide satisfactory responses to the questions.

Where an item is sampled, a candidate's response can be judged satisfactory where the evidence shows that the candidate can:

- ◆ describe the skeletal system including:
 - at least three functions of the skeleton
 - identification of the major bones of the skeleton
 - at least three types of synovial joints and their movement patterns and range of movement
- ◆ describe the muscular system including **four** of the following elements:
 - identification of three types of muscle
 - three functions of skeletal muscle
 - mechanics of muscle contraction
 - function of tendons
 - blood supply to muscles
 - at least three major muscle groups and their actions
- ◆ explain how the skeletal and muscular systems function in relation to dance and the effects of movement

Evidence should be generated through assessment undertaken in closed book supervised conditions.

Higher National Unit specification: statement of standards (cont)

Unit title: Dance: Anatomy and Injury Prevention for Dancers

Assessment Guidelines

The assessment of this Outcome can be combined with Outcomes 2 and 3.

Outcome 2

Demonstrate knowledge of the respiratory and cardiovascular system in relation to dance and exercise

Knowledge and/or Skills

- ◆ Respiratory system
- ◆ Cardiovascular system
- ◆ Adaptations to exercise
- ◆ Aerobic respiration
- ◆ Anaerobic respiration

Evidence Requirements

Evidence for the knowledge and/or skills in this Outcome will be generated through sampling. This evidence can be presented in response to specific questions. To ensure that candidates will not be able to foresee which items they will be questioned about, a different sample of **four** of the **five** knowledge and/or skills items is required each time the Outcome is assessed. Candidates must provide satisfactory responses to the questions.

Where an item is sampled, a candidate's response can be judged satisfactory where the evidence shows that the candidate can:

- ◆ describe the anatomy of the respiratory system
- ◆ describe at least two of the functions of the respiratory system
- ◆ describe the basic structure of the heart, arteries and veins
- ◆ describe at least two of the functions of the cardiovascular system including cardiac output and blood flow
- ◆ explain the adaptations of the respiratory and cardiovascular systems to exercise

Candidates will need to demonstrate an understanding of the relevant anatomy of the respiratory and cardiovascular systems in relation to dance.

Evidence should be generated through assessment undertaken in closed book supervised conditions.

Assessment Guidelines

This assessment of this Outcome can be combined with Outcomes 1 and 3.

Higher National Unit specification: statement of standards (cont)

Unit title: Dance: Anatomy and Injury Prevention for Dancers

Outcome 3

Identify and describe methods of injury prevention in dance and exercise

Knowledge and/or Skills

- ◆ Injury risks
- ◆ Clothing and equipment
- ◆ Principles and guidelines: warm up, cool down and contra-indicatory exercises
- ◆ Contra-indications to exercise

Evidence Requirements

Evidence for the knowledge and/or skills in this Outcome will be generated through sampling. This evidence can be presented in response to specific questions. To ensure that candidates will not be able to foresee which items they will be questioned about, a different sample of **three** of the **four** knowledge and/or skills items is required each time the Outcome is assessed. Candidates must provide satisfactory responses to the questions.

Where an item is sampled, a candidate's response can be judged satisfactory where the evidence shows that the candidate can:

- ◆ identify and describe four areas that would put the dancer at risk of injury
- ◆ describe the principles and guidelines pertaining to warm up and cool down exercises and contra-indicatory exercises
- ◆ describe contra-indications to exercise

Evidence should be generated through assessment undertaken in closed book supervised conditions.

Assessment Guidelines

This assessment of this Outcome can be combined with Outcomes 1 and 2.

Administrative Information

Unit code: FILE 34

Unit title: Dance: Anatomy and Injury Prevention for Dancers

Superclass category: RH

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Version	Description of change	Date

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Higher National Unit specification: support notes

Unit title: Dance: Anatomy and Injury Prevention for Dancers

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 will allow candidates to develop knowledge, understanding and skills on physical fitness, working conditions and injury management on dance related issues by focusing on the following areas:

Outcome 1

Skeletal System

- ◆ Function of the skeleton: storehouse for calcium, rigid framework for support, protective framework for organs, attachment for muscles, system of levers, production of blood cells.
- ◆ Identify the bones of the axial and appendicular skeleton: radius, ulna, humerus, scapula, clavicle, sternum, ribs, phalanges, femur, patella, fibula, tibia, pelvis, spine (coccyx, sacrum, lumbar, thoracic and cervical).
- ◆ Types of joints: fibrous, cartilaginous, synovial.
- ◆ Structure of a synovial joint: ligaments, synovial fluid, synovial membrane, articular cartilage.
- ◆ Types of synovial joints: gliding, hinge, condyloid, saddle, ball and socket, pivot.
- ◆ Classification of movements: flexion, extension, abduction, adduction, rotation, circumduction.
- ◆ Factors determining range of movement: joint capsule, ligaments, bone structure, muscle length, scar tissue, cartilage, discs, muscle bulk.
- ◆ Adaptation to exercise: increased bone density, increased bone matrix, stronger tendons, thicker tendons, increased plastic properties of collagen.

Muscular System

- ◆ The functions of muscle: movement, support, heat production.
- ◆ Structure of muscle: muscle fibres (refer to sliding filament theory), connective tissue, tendons, blood supply.
- ◆ Movement patterns: prime movers, antagonists, synergists, fixators.
- ◆ Types of contraction: concentric, eccentric, isometric.
- ◆ Muscles and actions of the upper body:
 - Anterior – pectorals, deltoid, biceps, abdominals;
 - Posterior – trapezius, rhomboids, triceps, latissimus dorsi, erector spinae.
- ◆ Muscles and actions of the lower body:
 - Anterior – iliopsoas, adductors, tibialis anterior;
 - Posterior – gluteals, piriformis, hamstrings, gastrocnemius, soleus.
- ◆ Muscle adaptations to exercise: increased functional strength, hypertrophy, increased neuromuscular innervation, co-ordination.

Higher National Unit specification: support notes (cont)

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Outcome 2

Respiratory system

- ◆ The anatomy of the respiratory system: oral/nasal cavity, pharynx, larynx, epiglottis, trachea, bronchus, bronchioles, alveoli, diaphragm, intercostal muscles, pleural membranes.
- ◆ The function of the respiratory system: gas exchange, diffusion, concentration gradient.
- ◆ The mechanics of breathing: inspiration, expiration, volume and pressure change, increased respiratory rate, use of ancillary muscles, forced expiration.
- ◆ Respiratory adaptations to exercise: increased capacity of lungs, increased alveoli, increased capillary supply, increased exchange mechanism.

Cardiovascular System

- ◆ The structure of the cardiovascular system: atrium, ventricles, valves, arteries, veins and capillaries.
- ◆ The function of the cardiovascular system: cardiac output, stroke volume, heart rate, vasoconstriction, vasodilatation.
- ◆ Cardiovascular adaptations to exercise: increased stroke volume, increased cardiac output, increased vascularisation, increased capillary-muscle gaseous exchange, increased venous return, lower resting heart rate.

Outcome 3

Candidates will identify areas that would put the dancer at risk of injury during classes, rehearsals and performances. The types of areas of risk would include props, flooring, footwear, clothing, costumes and stage areas, etc. Candidates will be encouraged to be aware of the importance of warming up and cooling down before and after classes, workshops and performances. Principles and guidelines pertaining to stretching, alignment, strength and stamina, flexibility, friction and speed should be covered. As part of this learning process candidates should be encouraged to identify exercises, movements, injuries and illnesses that could put them at risk of injury and use their knowledge of anatomy to have an informed standpoint.

Guidance on the delivery and assessment of this Unit

This Unit has been developed as part of the HNC/HND Dance Artists and HNC/D Professional Stage Dance. It has been designed to provide candidates with the relevant technical/professional knowledge and skills to enable them to identify good practice and adopt injury prevention techniques in their dance training sessions. The Unit is designed to complement the overall dance training of the candidate.

Opportunities for developing Core Skills

There may be opportunities to develop the Core Skills of Communication Information Technology and Problem Solving to SCQF level 5 in this Unit, although there is no automatic certification of Core Skills or Core Skills components.

Higher National Unit specification: support notes (cont)

Unit title: Dance: Anatomy and Injury Prevention for Dancers

Outcomes 1, 2 and 3 may be assessed via responses which may facilitate development of the Core Skill component of Communication (Written Communication) to SCQF level 5.

There may also be opportunities to develop the Core Skill of Problem Solving (Critical Thinking) to SCQF level 5 in this Unit. Outcomes 1 and 2 require candidates to draw conclusions from information and explain how the skeletal and muscular systems function in relation to dance and the effects of movement.

Open learning

Although this Unit is suitable for open and distance learning, it would require a considerable degree of planning by the centre to ensure the authenticity of candidate evidence. Arrangements would have to be made to ensure that the closed book assessment(s) is delivered under supervised conditions.

For further information and advice please refer to the SQA document *Assessment and Quality Assurance for Open and Distance Learning* which is available on SQA's website: www.sqa.org.uk.

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: Dance: Anatomy and Injury Prevention for Dancers

This Unit will provide you with knowledge of anatomy in the context of dance, movement and exercise. It will enable you to identify good practice in injury prevention.

There are three Outcomes in this Unit covering the following topics:

Outcome 1

- ◆ Muscular system
- ◆ Skeletal system
- ◆ Action of muscles and skeleton
- ◆ Function of skeletal and muscular systems in relation to dance and the effects of movement

Outcome 2

- ◆ Respiratory system
- ◆ Cardiovascular system
- ◆ Function of respiratory and cardiovascular systems in relation to dance and the effects of movement

Outcome 3

- ◆ Injury risk
- ◆ Clothing and equipment
- ◆ Principles and guidelines of warm up, cool down and contra-indicatory exercises
- ◆ Contra-indications to exercise