



## Higher National Unit Specification

### General information for centres

**Unit title:** Occupational Therapy Support: Anatomy and Physiology

**Unit code:** F3NF 34

**Unit purpose:** This Unit will develop candidates' knowledge and understanding of the normal and abnormal functioning of four selected body systems and allow them to apply this knowledge in the occupational therapy workplace setting. The four chosen systems are studied as they are most relevant to the role of the support worker in occupational therapy.

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

- 1 Describe the anatomy of the cardiovascular, respiratory, nervous and locomotor systems.
- 2 Explain the mechanisms involved in homeostasis.
- 3 Explain the role of the locomotor system applied to movement.
- 4 Describe disorders of selected body systems.

**Credit points and level:** 2 HN credits at SCQF level 7: (16 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:** It would be beneficial if candidates have good communication skills, and prior knowledge of human biology though this is not essential. Both could be evidenced, for example, by achievement of a nationally recognised qualification at SCQF level 6, or by pre course interview and assignment. In order to undertake this Unit, candidates should have experience of working in a care environment, and should typically be carrying out the role of a support worker within an occupational therapy setting, under supervision by an occupational therapist.

**Core Skills:** There are opportunities to develop the component Written Communication of the Core Skill of *Communication* at SCQF level 5 and the Core Skill of *Information Technology* at SCQF level 4 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 was developed within the framework of the HNC Occupational Therapy Support and it is recommended to be taught early in the course.

**Assessment:** This Unit should be assessed using a range of assessment instruments including structured and extended response questions completed under supervised, closed-book conditions (Outcomes 1, 2 and 3) and a folio of disorders (Outcome 4).

## **Higher National Unit specification: statement of standards**

**Unit title:** Occupational Therapy Support: Anatomy and Physiology

**Unit code:** F3NF 34

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**

Describe the anatomy of the cardiovascular, respiratory, nervous and locomotor systems

#### **Knowledge and/or Skills**

- ◆ Structure of the cardiovascular system and its organs
- ◆ Structure of the respiratory system and its organs
- ◆ Structure of the nervous system and its organs
- ◆ Structure of the locomotor system and its organs

#### **Evidence Requirements**

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

- ◆ name the main organs of the cardiovascular system, respiratory system, nervous system and locomotor system.
- ◆ describe the structure of selected organs of the cardiovascular system, respiratory system, nervous system and locomotor system. Descriptions will cover two organs from each of the systems named in the Knowledge and/or Skills items.

#### **Assessment Guidelines**

Assessment for this Outcome may consist of a combination of structured and extended response questions carried out under supervised, closed-book conditions, covering all four given systems. This assessment may be integrated with Outcome 2.

## **Higher National Unit specification: statement of standards (cont)**

**Unit title:** Occupational Therapy Support: Anatomy and Physiology

### **Outcome 2**

Explain the mechanisms involved in homeostasis

#### **Knowledge and/or Skills**

- ◆ The principles of homeostasis and negative feedback mechanisms
- ◆ The role of the cardiovascular system in maintaining homeostasis
- ◆ The role of the respiratory system in maintaining homeostasis
- ◆ The role of the nervous system in maintaining homeostasis

#### **Evidence Requirements**

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

- ◆ principles of homeostasis and negative feedback mechanisms
- ◆ role of the cardiovascular system in homeostasis
- ◆ role of the respiratory system in homeostasis
- ◆ role of the nervous system in homeostasis

#### **Assessment Guidelines**

Assessment for this Outcome may consist of extended response questions carried out under supervised, closed-book conditions, covering the principles of homeostasis and the roles of the three given systems. Assessment could be integrated with Outcome 1.

### **Outcome 3**

Explain the role of the locomotor system applied to movement

#### **Knowledge and/or Skills**

- ◆ Skeletal movement in terms of muscle attachment and levers
- ◆ Sliding filament theory of muscle contraction
- ◆ Function and movement of selected synovial joints

#### **Evidence Requirements**

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

- ◆ identify the origin and insertion of a minimum of two named muscles, to include one extensor muscle and one flexor muscle
- ◆ explain the role of long bones as levers for movement
- ◆ explain the sliding filament theory of muscle contraction
- ◆ explain the function and movement of a minimum of two selected synovial joints

## **Higher National Unit specification: statement of standards (cont)**

**Unit title:** Occupational Therapy Support: Anatomy and Physiology

### **Assessment Guidelines**

Assessment for this Outcome may consist of extended response questions carried out under supervised, closed-book conditions.

### **Outcome 4**

Describe disorders of selected body systems

#### **Knowledge and/or Skills**

- ◆ Physiological terminology of disorders (for cardiovascular, respiratory, nervous and locomotor body systems)
- ◆ Immediate effects of disorders on the individual
- ◆ Long term effects of disorders on the individual
- ◆ How disorders affect the activities of an individual in daily life

#### **Evidence Requirements**

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

- ◆ a minimum of one disorder for each system, using physiological terminology
- ◆ the immediate effects of each disorder on the individual
- ◆ the long term effects of each disorder on the individual
- ◆ how each disorder affects an individual's activities in daily life

#### **Assessment Guidelines**

Assessment for this Outcome could consist of the production of a folio of disorders. It is recommended that the folio includes a minimum of one disorder for each of the given body systems, and may be related to individuals in receipt of occupational therapy. Bibliography and evidence such as journal articles and information leaflets should be included.

## Administrative Information

<b>Unit code:</b>	F3NF 34
<b>Unit title:</b>	Occupational Therapy Support: Anatomy and Physiology
<b>Superclass category:</b>	RH
<b>Original date of publication:</b>	June 2008
<b>Version:</b>	01

### History of Changes:

Version	Description of change	Date

**Source:** SQA

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## Higher National Unit specification: support notes

### Unit title: Occupational Therapy Support: Anatomy and Physiology

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 80 hours.

### Guidance on the content and context for this Unit

#### Outcome 1

The aim of this Outcome is to develop candidates' knowledge of the anatomy of four selected body systems. These are thought to be the systems most relevant to occupational therapy support.

**Cardiovascular system:** components of blood, to include red blood cells, types of white blood cells, platelets and plasma. Components of the heart, to include structure of cardiac muscle, chambers, septum, tendons, valves and conduction system. Blood Vessels, to include structure of arteries, veins and capillaries.

**Respiratory system:** structure of the respiratory system, to include nasal cavity, pharynx, larynx, trachea, bronchi, bronchioles and alveoli. Diaphragm and intercostals muscles.

**Nervous system:** structure of nervous system, to include the main structural divisions of the nervous system, types of neurones, structure of neurones, structure of synapse, the main regions of the brain, regions of spinal cord, spinal and cranial nerves.

**Locomotor System:** structure of the locomotor system, to include the structure of compact and cancellous bone tissue, names of main bones of skeleton, structure of synovial joints, structure of skeletal muscle including structure of sarcomere.

#### Outcome 2

This Outcome develops candidates' knowledge and understanding of the physiology related to homeostasis. This Outcome covers the following:

- ◆ the principles of homeostasis and negative feedback control.
- ◆ the role of the cardiovascular system in homeostasis to include the cardiac cycle, the conduction system of the heart, control of heart rate and control of blood pressure.
- ◆ the role of the respiratory system in homeostasis to include the physiology of the gas exchange, oxygen dissociation, breathing mechanism and the control of breathing.
- ◆ the role of the nervous system in homeostasis to include the transmission of the nervous impulse, transmission across the synapse and the neuromuscular junction. The function of the autonomic nervous system in maintaining homeostasis.

## Higher National Unit specification: support notes (cont)

### Unit title: Occupational Therapy Support: Anatomy and Physiology

#### Outcome 3

This Outcome develops candidates' knowledge and understanding of the role of muscles and synovial joints applied to movement of the skeleton. This will cover the origin and insertion of named muscles at selected joints, the role of long bones as levers, and the sliding filament theory, to include the structure and function of the sarcomere. Also covered are the function and movement of selected synovial joints, of which examples could include the hip, elbow, and knee joints.

#### Outcome 4

This Outcome enables candidates to relate theory of anatomy and physiology to the workplace setting, focussing on the functional difficulties caused by disorders. It enables candidates to develop a knowledge and understanding of abnormal body functions relating to the four selected body systems.

Correct physiological terminology is used to explain one named disorder for each of the four body systems — cardiovascular, respiratory, nervous and locomotor (ie four disorders in total). Descriptions of the immediate and long term effects of each disorder on an individual focus on the functional difficulties caused by these conditions. Disorders will be related to activities of group life of individuals and could take into account expected role duties of each individual.

In the occupational therapy based Units the effect of these disorders on the individual's domains of occupation and performance components will be further investigated. This Outcome should involve a literature search including patient leaflets and a detailed bibliography.

Below are examples of medical conditions which could be studied. As some may be more relevant to occupational therapy than others, a balance of the disorders studied should be considered.

**Cardiovascular system:** leukaemia, coronary artery disease, myocardial infarction, arrhythmias, varicose veins, rheumatic heart disease, valve disease, hypertension.

**Respiratory system:** bronchial asthma, bronchitis, emphysema, tuberculosis, pulmonary embolism, pulmonary oedema.

**Nervous system:** TIA, CVA, epilepsy, cerebral palsy, Parkinson's disease, multiple sclerosis, aphasia, agraphia, apraxia, ataxia, sciatica.

**Locomotor system:** muscular dystrophy, myasthenia gravis, osteoporosis, fractures, rheumatoid arthritis, osteoarthritis.

### Guidance on the delivery and assessment of this Unit

This Unit was developed as part of the HNC Occupational Therapy Support. It is recommended that this Unit be taught early on within the Group Award.

Outcomes 1, 2 and 3 may be assessed using structured, extended response questions under supervised, closed-book conditions.

The assessments for Outcomes 1 and 2 could be integrated. Outcome 4 could be assessed using a folio of evidence, to include a minimum of four disorders (one for each of the four body systems). It is recommended that the folio is word processed, and will include a bibliography.

## Higher National Unit specification: support notes (cont)

**Unit title:** Occupational Therapy Support: Anatomy and Physiology

### *Opportunities for developing Core Skills*

The delivery and assessment of this Unit may contribute towards the component Written Communication of the Core Skill of *Communication* at SCQF level 5. The general skills of the component (see Core Skills Framework at <http://www.sqa.org.uk>), are ‘read, understand and evaluate written communication’ for its reading element and ‘produce well-structured written communication’ for its writing element. Specific reading skills required by candidates at SCQF level 5 include identifying and summarising significant information, ideas and supporting details in a written communication, and evaluation of the effectiveness of the communication in meeting its purpose; and specific writing skills include presenting all essential ideas, information and supporting detail in a logical and effective order, and use of a structure which takes account of purpose and audience, emphasising the main points.

Candidates may use the skills outlined above in covering the Evidence Requirements across all four Outcomes. The first three are likely to be assessed using structured and extended responses, covering such topics as the structure of selected organs of the cardiovascular system (in Outcome 1) and the principles of homeostasis (in Outcome 2). Outcome 4 may be assessed by the production of a folio which could involve a certain amount of research by candidates, such as some searching/reading of patient leaflets, and should include a detailed bibliography. Folio production therefore, may particularly provide opportunities for candidates to develop the reading element of the Written Communication component.

Depending on the methods used to produce candidates’ responses, the delivery and assessment of this Unit may contribute towards the Core Skill of *Information Technology* at SCQF level 4, the general skill of which is to use ‘an Information Technology system effectively to perform a range of straightforward tasks.’

Specific skills required at SCQF level 4 include making effective use of a computer system, carrying out straightforward processing using three applications, and carrying out straightforward searches. Candidates may opt to use Information Technology systems and specific applications in drafting and editing their responses for all Outcomes, in particular the folio for Outcome 4. *Information Technology* skills may be relevant both to research tasks involved in compiling the folio, and producing the final version of the folio itself.

### **Open learning**

This Unit is suitable for open or distance learning provided there is clear centre planning to ensure authentication and confidentiality of closed-book assessments (these require invigilation). Assessments for all Outcomes could be sent to the centre assessor for marking.

### **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](http://www.sqa.org.uk)).



## General information for candidates

### Unit title: Occupational Therapy Support: Anatomy and Physiology

This Unit will provide you with a knowledge and understanding of the normal and abnormal functioning of four selected body systems and allow you to apply this knowledge in the occupational therapy workplace setting. These four systems are studied as they are most relevant to the role of the support worker in occupational therapy.

This Unit is made up of four Outcomes. On completion of these you should be able to:

- 1 Describe the anatomy of the cardiovascular, respiratory, nervous and locomotor systems.
- 2 Explain the mechanisms involved in homeostasis.
- 3 Explain the role of the locomotor system applied to movement.
- 4 Describe disorders of selected body systems.

The aim of the first Outcome is to enable you to develop a sound knowledge of the anatomy of the four selected body systems, cardiovascular, respiratory, nervous and locomotor. These are deemed to be the systems most relevant to occupational therapy support.

The second Outcome will develop your knowledge and understanding of homeostasis.

The third Outcome will develop your knowledge and understanding of the role of the locomotor system applied to movement.

The fourth Outcome focuses on the functional difficulties caused by disorders. It will enable you to understand abnormal body functions, relating to the four given body systems and how the disorders may affect individuals in their daily lives.

You may be assessed using a range of assessment instruments which could include structured and extended response questions (particularly for Outcomes 1, 2 and 3) and the production a folio of disorders (for Outcome 4).

Over the course of this Unit, there may be opportunities for you to develop important Core Skills in the areas of *Communication and Information Technology*.