Higher National Unit Specification

General information for centres

Unit title: Companion Animal Anatomy and Physiology

Unit code: F3V1 34

Unit purpose: This Unit provides candidates with knowledge and understanding of companion animal anatomy and physiology. It is designed for candidates who are already employed in, or seeking employment in the animal care industry.

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

1 Explain the structure and functions of animal cells and tissues.
2 Explain the general body organisation of companion animals.
3 Explain the structure and functions of the major body systems of companion animals.
4 Explain the structure and functions of the nervous and endocrine systems of companion animals.

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: Access to this Unit will be at the discretion of the centre however, it is recommended that candidates should have studied Biology at SCQF level 5, or equivalent.

Core Skills: There are opportunities to develop the Written Communication component of the Core Skill of *Communication* 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.

Assessment: A series of closed-book assessments undertaken in controlled conditions could be used to collect the necessary evidence for Outcomes 1, 2 and 3. Outcome 4 could be assessed by an open-book test assignment, possibly in the form of a set report.

Higher National Unit specification: statement of standards

Unit title: Companion Animal Anatomy and Physiology

Unit code: F3V1 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

Explain the structure and functions of animal cells and tissues

Knowledge and/or Skills

- Structure of animal cells
- Functions of animal cells
- Types of animal tissues
- Functions of animal tissues

Evidence Requirements

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

- identify seven structures (organelles) present in a typical animal cell.
- explain the structure and functions of four of the seven organelles previously identified.
- identify the four main types of animal tissue.
- explain the structure and function of one example of each of the four tissue types identified.

This Outcome should be assessed under controlled conditions.

Assessment Guidelines

This could be a closed-book test consisting of structured questions and lasting one hour.

Higher National Unit specification: statement of standards (cont)

Unit title: Companion Animal Anatomy and Physiology

Outcome 2

Explain the general body organisation of companion animals

Knowledge and/or Skills

- Body cavities
- Location of major organs within body cavities
- Fluid compartments in the body
- External anatomical features

Evidence Requirements

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

- describe a minimum of three body cavities. The description must include the boundaries and contents of the body cavities.
- describe two structures or organs within each body cavity. The description must include the relative position of the major organs.
- explain the distribution of body water within fluid compartments. The explanation must include intracellular fluid, extracellular fluid (including plasma, interstitial fluid, transcellular fluids) as well as fluid movements such as osmosis and active secretion.
- identify, on a diagram, eight external anatomical features in one companion animal.

This Outcome must be assessed under controlled conditions.

Assessment Guidelines

This could be a closed-book test consisting of short answer and structured questions and lasting one hour.

Higher National Unit specification: statement of standards (cont)

Unit title: Companion Animal Anatomy and Physiology

Outcome 3

Explain the structure and functions of the major body systems of companion animals

Knowledge and/or Skills

- Musculoskeletal system
- Integumentary system
- Digestive system
- Respiratory system
- Cardiovascular system
- Lymphatic system
- Urinary system
- Reproductive system

Evidence Requirements

Candidates will need to provide evidence to demonstrate their Knowledge and/or Skills by showing that they can for at least one companion animal:

- explain three components in each of the major body systems in the animal. The description of the structure must include major organs and their relative positions
- explain the function of each of the three components for each of the major body systems in companion animals.

This Outcome should be assessed under controlled conditions.

Assessment Guidelines

This could be a series of closed-book tests, consisting of 10 restricted response questions, each test to cover two body systems, and lasting one hour.

Higher National Unit specification: statement of standards (cont)

Unit title: Companion Animal Anatomy and Physiology

Outcome 4

Explain the structure and functions of the nervous and endocrine systems of companion animals

Knowledge and/or Skills

- Nervous systems
- Endocrine system
- Homeostasis

Evidence Requirements

Candidates will need to provide evidence to demonstrate their Knowledge and/or Skills by showing that they can for at least one companion animal:

- explain the structure and functions of the central and peripheral nervous systems.
- explain the functions of the autonomic nervous system.
- describe the components and function of a reflex arc.
- explain the functions of the special senses.
- explain the functions of the endocrine system.
- explain the concept of homeostasis

Assessment Guidelines

This Outcome could be assessed via an open-book assignment. Candidates could be required to produce a case study report in which they look at one animal and explain the functions of the central and peripheral nervous systems, endocrine system, homeostasis etc. All Evidence Requirements **must** be covered.

Administrative Information

Unit code: F3V1 34

Unit title: Companion Animal Anatomy and Physiology

Superclass category: RH

Original date of publication: August 2008

Version: 02

History of Changes:

Version	Description of change	Date
02	Simplification of Evidence Requirements for outcomes 1,2,3 and 4 to make less prescriptive	08/04/16

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: Companion Animal 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

The Unit is useful for animal care professionals, or enthusiasts who wish to increase their knowledge of the anatomy and physiology of companion animals. The Unit was developed for the HNC/HND in Animal Care and ideally, the teaching and learning will be delivered in this context. The Unit complements the anatomy and physiology of exotic animals and birds as taught in the Specialist Animal Care suite of Units.

The range of animals here could include, for example, cats; dogs; rabbits; ferrets**.**

Additional information relating to each Outcome is given below.

Outcome 1

This Outcome covers the structure and function of cells and tissues of the animal body. A generalised animal cell could be considered first, including the structure and function of typical organelles and the cell membrane. The basic tissues: epithelium; connective; nervous; muscle tissue, could be described and explained, followed by examples of each type of tissue. The relationship between structure and function could be emphasised. Descriptions of these tissues could include the specialised cells found in each tissue, eg erythrocytes, neurones, striated muscle cells etc. The concept of specialisation can be extended in explaining the organisation of tissues to form organs and body systems but detailed knowledge of histology is beyond the scope of this Unit. Use should be made of diagrams and models where possible.

Outcome 2

This Outcome considers the layout of the body, including the body cavities and the relative positions of the major organs. The body cavities, their boundaries and their contents should be taught. Cavities to include as a minimum: thoracic; abdominal; cranial: spinal. The distribution of water throughout the fluid compartments in the body should be covered: intracellular fluid; extracellular fluid (including plasma, interstitial fluid, transcellular fluids). Candidates should develop an understanding of how fluid moves between compartments eg osmosis, active secretion. The concept of homeostasis could be introduced here. External anatomical features of companion animals should be taught, including lay terms in common use and skeletal landmarks.

Outcome 3

The gross structure and functions of major organs and body systems should be covered, emphasising homeostatic relationships between systems. Factors which produce normal physiological responses should be covered where appropriate in each system, eg effects of changes in ambient temperature, response to exercise, changes in body water. Detailed knowledge of biochemistry and physiology are beyond the scope of this Unit.

Outcome 4

The concept of homeostasis should be explained, reinforcing the need for integration of the functions of body systems in order to maintain a constant cellular environment. The gross structure and functions of the nervous and endocrine systems should be taught, to include: central nervous system; peripheral nervous system; special senses; the main endocrine glands and their products.

The role of the hypothalamus as a neural link between the nervous and endocrine system should be explained. Control mechanisms, including negative and positive feedback systems and the functions of the autonomic nervous system should be taught. The function of reflex arcs should be included. Examples of interactions between nervous and endocrine systems could include the mechanism of milk 'let down'. Knowledge of detailed neurophysiology is beyond the scope of this Unit.

Guidance on the delivery and assessment of this Unit

This Unit forms part of the core framework of an HNC/HND in Animal Care. It complements the teaching of anatomy and physiology of exotic animals and birds in the Specialist Animal Care suite of Units. Reference may be made where appropriate to these species in consideration of comparative anatomy and physiology but comparative anatomy is not assessed.

Opportunities for developing Core Skills

There are opportunities to develop the Written Communication component of the Core Skill of *Communication* at SCQF level 6 in this Unit, although there is no automatic certification of Core Skills or Core Skills components.

The delivery and assessment of this Unit may contribute towards the component Written Communication of the Core Skill of *Communication* at SCQF level 6, particularly by use of a report as the instrument of assessment for Outcome 4. Candidates may be asked to produce a report which explains the functions of the central and peripheral nervous systems, endocrine system and homeostasis and covers all Evidence Requirements.

The general skills of the Written Communication component are 'read, understand and evaluate written communication' for its reading element and 'produce well-structured written communication' for its written element.

Any supplementary reading and research undertaken in preparation for the report may facilitate development of the component's reading element, with drafting the report itself developing the writing element of the component.

In both formative and summative assessment candidates should be encouraged to present all essential ideas/information and supporting detail in a logical and effective order; use a structure that takes account of purpose and audience and links major and minor points in ways which assist the clarity and impact of the writing; use conventions which are effective in achieving the purpose and adapted as necessary for the target audience and use spelling, punctuation and sentence structures which are consistently accurate.

These skills can be developed through formative activities, such as any short essays/reports on topics, without formal Core Skill certification.

Open learning

This Unit may be suitable for open or distance learning. However, centres will have to make appropriate arrangements for delivery and assessment.

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: Companion Animal Anatomy and Physiology

This Unit will provide you with knowledge and understanding of companion animal anatomy and physiology. It may be useful to you if are already employed in, or seeking employment in the animal care industry, or if you are an enthusiast aiming to increase your knowledge of the anatomy and physiology of companion animals.

This Unit is normally delivered within the framework of the HNC/HND in Animal Care. The range of animals covered by the Unit may include, for example, cats; dogs; rabbits; ferrets.

The content of the Unit is organised into four Outcomes, which cover the following topics:

1 The structure and functions of animal cells and tissues.
2 The general body organisation of companion animals.
3 The structure and functions of the major body systems of companion animals.
4 The structure and functions of the nervous and endocrine systems of companion animals.

A series of closed-book assessments may be used to collect the evidence of your achievement of this Unit, together with a report covering Outcome 4.

During this Unit, there are opportunities to develop the Written Communication component of the Core Skill of *Communication*, at SCQF level 6.