



Higher National Unit specification

General information for centres

Unit title: Dental Oral and Facial Anatomy

Unit code: F1M9 34

Unit purpose: This Unit introduces the anatomy of the face and oral cavity. The Unit allows the candidate to develop the necessary knowledge and skills to allow them to understand, the basic physiology of the temporomandibular joint and its range of movement, surface anatomy of the oral cavity, salivation, deglutition, the oral musculature and the effects of ageing and dental/oral disease.

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

- 1 Explain the basic anatomy and development of the bones of the facial skeleton.
- 2 Identify and describe the action of the major muscles of facial expression, mastication and floor of mouth.
- 3 Explain the effects of external factors on the histology of the tongue and oral tissues.
- 4 Explain the destructive processes affecting teeth and surrounding tissues and the dental therapies of these processes.

Credit points and level: 1.5 HN credits at SCQF level 7: (12 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 is at the discretion of the centre. It would be beneficial if the candidate could have completed the National Qualifications Unit D0KK 12 *Regional and Dental Anatomy*. Candidates could have completed an induction to dental technology course.

Core Skills: There are opportunities to develop the Core Skills of Problem Solving: Critical Thinking at SCQF level 6, Using Information Technology at SCQF level 6 and Communication: Written Communication at 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: The Unit could be assessed by a single instrument of assessment. The assessment event could consist of a set number of restricted response questions, lasting no more than two hours and must be carried out under supervised, timed conditions. This assessment could be carried out at the end of the delivery of the Unit. It would also be possible to break this assessment down into four separate assessment events which assess each Outcome separately. Where separate assessments are used, those for Outcome 1 and 2 could take 35 minutes each, while 25 minutes each could be allowed for Outcome 3 and 4.

Higher National Unit specification: statement of standards

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The sections of the Unit stating the Outcomes, Knowledge and/or Skills, and Evidence Requirements are mandatory.

Please refer to Assessment Guidelines for the Unit after the Outcomes.

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 basic anatomy and development of the bones of the facial skeleton

Knowledge and/or Skills

- ◆ Anatomy of the facial skeleton
- ◆ Development of the facial skeleton
- ◆ Structure and development of the palate
- ◆ Cleft palate
- ◆ Structure of the temporomandibular joint (TMJ)
- ◆ Dynamics of the TMJ

Evidence Requirements

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

- ◆ explain the anatomy of the facial skeleton including:
 - Zygomatic
 - Maxillary
 - Palatine
 - Nasal
 - Lacrimal
 - Vomer, and
 - Inferior conchae
- ◆ explain the development and structure of the palate

The first three bullet points listed under Knowledge and/or Skills, and must be assessed on each assessment occasion.

Evidence for the remaining Knowledge and/or Skills items in this Outcome will be provided through sampling. To ensure that candidates will not be able to foresee what they will be questioned about, a different sample of one of the last three Knowledge and/or Skills items is required each time the Outcome is assessed.

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

- ◆ explain the characteristics of the cleft palate
- ◆ describe the structures that form the temporomandibular joint including the condylar head
- ◆ explain the dynamics of the temporomandibular joint including during protrusion and lateral movement of the mandible

Evidence for this Outcome must be generated under supervised conditions.

Outcome 2

Identify and describe the action of the major muscles of facial expression, mastication and floor of mouth

Knowledge and/or Skills

- ◆ Major muscles of Facial Expression
- ◆ Major muscles of Mastication
- ◆ Major muscles of Floor of Mouth

Evidence Requirements

Evidence for the Knowledge and/or Skills in this Outcome will be provided on a sample basis. In order to ensure that candidates will not be able to foresee what items they will be questioned about, a different sample of the Knowledge and/or Skills items is required each time the Outcome is assessed.

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

- ◆ identify the histological structure of the musculature responsible for facial expression. The candidate must be able to identify the thirteen major muscles of facial expression. These include:
 - Orbicularis Oris
 - Modiolus
 - Buccinator
 - Zygomaticus
 - Incisivus Labii Superioris
 - Incisivus Labii Inferioris
 - Levator Labii Superioris
 - Depressor Labii Inferioris
 - Caninus
 - Levator Anguli Oris
 - Depressor Anguli Oris
 - Traiangularis
 - Risorius.

Higher National Unit specification: statement of standards (cont)

Unit title: Dental Oral and Facial Anatomy

The first bullet point listed under Knowledge and/or Skills, and must be assessed on each assessment occasion.

Evidence for the remaining Knowledge and/or Skills items in this Outcome will be provided through sampling. To ensure that candidates will not be able to foresee what they will be questioned about, a different sample of at least one of the last two Knowledge and/or Skills items is required each time the Outcome is assessed. Where an item is sampled, a candidate's response can be judged satisfactory where the evidence provided shows that the candidate can:

- ◆ Describe the histological structure of the musculature responsible for mastication. In doing so the candidate should be able to identify the four major muscles of mastication (masseter, temporalis, pterygoideus externus, pterygoideus internus).
- ◆ Describe the histological structure of the musculature that constitutes the floor of the mouth. In doing so the candidate should be able to identify the four major muscles that constitute the floor of the mouth (mylohyoid, geniohyoid, genioglossus, palatoglossus).

Evidence for this Outcome must be generated under supervised conditions.

Outcome 3

Explain the effects of external factors on the histology of the tongue and oral tissues

Knowledge and/or Skills

- ◆ Anatomy of the tongue and oral tissues
- ◆ Function of the tongue and oral tissues
- ◆ Effects of age
- ◆ Effects of drugs
- ◆ Effects of radiotherapy
- ◆ Effects of surgery
- ◆ Tooth and oral structures

Evidence Requirements

Evidence for the Knowledge and/or Skills in this Outcome will be provided on a sample basis. In order to ensure that candidates will not be able to foresee what items they will be questioned about, a different sample of the Knowledge and/or Skills items is required each time the Outcome is assessed.

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

- ◆ Explain the basic anatomy of the tongue and oral tissues. The three regions — the apex, the body, and the root of the tongue should be explained.
- ◆ Explain the function of the tongue and oral tissues. In doing so the candidate should be able to explain five functions of the tongue (mastication, swallowing, speech, taste and oral hygiene).

Higher National Unit specification: statement of standards (cont)

Unit title: Dental Oral and Facial Anatomy

The first two bullet points listed under Knowledge and/or Skills, and must be assessed on each assessment occasion.

Evidence for the remaining Knowledge and/or Skills items in this Outcome will be provided through sampling. To ensure that candidates will not be able to foresee what they will be questioned about, a different sample of one element of the last five Knowledge and/or Skills items is required each time the Outcome is assessed. Where an item is sampled, a candidate's response can be judged satisfactory where the evidence provided shows that the candidate can:

- ◆ explain the consequence of age, drugs, radiotherapy, or surgery on the tongue and oral tissues
- ◆ explain the effects of age, drugs, radiotherapy or surgery on the components parts of the tooth and oral structures.

Evidence for this Outcome must be generated under supervised conditions.

Outcome 4

Explain the destructive processes affecting teeth and surrounding tissues and the dental therapies of these processes

Knowledge and/or Skills

- ◆ Destructive processes:
 - Tooth Caries
 - Trauma
 - Attrition
 - Abrasion
 - Erosion
 - Gingivitis
 - Periodontal disease
- ◆ The dental therapies:
 - Caries removal
 - Dietary advice
 - Oral hygiene therapy

Evidence Requirements

Evidence for the Knowledge and/or Skills in this Outcome will be provided on a sample basis. In order to ensure that candidates will not be able to foresee what items they will be questioned about, a different sample of the Knowledge and/or Skills items is required each time the Outcome is assessed.

Higher National Unit specification: statement of standards (cont)

Unit title: Dental Oral and Facial Anatomy

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

- ◆ identify and describe the destructive processes Tooth caries and Trauma
- ◆ explain the progressive nature of Tooth caries and Trauma
- ◆ explain the dental therapies (caries removal, dietary advice, and oral hygiene therapy) employed to manage Tooth Caries and Trauma

These items refer to the first two destructive processes listed under Knowledge and/or Skills, and must be assessed on each assessment occasion.

Evidence for the remaining destructive processes listed under Knowledge and/or Skills in this Outcome will be provided through sampling. To ensure that candidates will not be able to foresee what they will be questioned about, a different sample of one of the last five destructive processes listed in the Knowledge and/or Skills items. A different sample is required each time the Outcome is assessed. Where an item is sampled, a candidate's response can be judged satisfactory where the evidence provided shows that the candidate can:

- ◆ identify and describe the destructive process Attrition; Abrasion; Erosion; Gingivitis; or Periodontal disease
- ◆ explain the progressive nature of Attrition; Abrasion; Erosion; Gingivitis; or Periodontal disease
- ◆ detail the dental therapies (caries removal, dietary advice, and oral hygiene therapy) employed to manage Attrition; Abrasion; Erosion; Gingivitis; or Periodontal disease

Evidence for this Outcome must be generated under supervised conditions.

Assessment Guidelines for the Unit

The Assessment of this Unit can be carried out as a single assessment lasting two hours. The method of assessment could take the form of structured questions. The assessment will be completed under supervised closed-book conditions. It would also be possible to break this assessment down into four separate assessment events that assess each Outcome separately. Where separate assessments are used, those for Outcomes 1 and 2 could take 35 minutes each, while 25 minutes each could be allowed for Outcomes 3 and 4.

Administrative Information

Unit code: F1M9 34
Unit title: Dental Oral and Facial Anatomy
Superclass category: RH
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Higher National Unit specification: support notes

Unit title: Dental Oral and Facial Anatomy

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 60 hours.

Guidance on the content and context for this Unit

The purpose of this Unit is to allow candidates to develop knowledge and understanding of how the health and physical state of a patient and their oral tissues influence the activities of the dental technician.

Outcome 1

In this Outcome candidates could become familiar with the basic anatomy and development of the bones of the skull with particular emphasis on the bones of the face and jaw.

The candidates could be able to clearly divide the bones of the skull into either:

- ◆ bones of the Cranium — Frontal; Parietal; Occipital; Temporal; Sphenoid; Ethmoid; Auditory ossicles
- ◆ bones of the face — Zygomatic; Maxillary; Palatine; Nasal; Lacrimal; Vomer; Inferior conchae

In this Outcome it is also expected that candidates will demonstrate an understanding of the Development (Osteogenesis) and Morphology of Bone.

Outcome 2

In this Outcome candidates could be able to identify and detail the action of the major muscles of facial expression, mastication and floor of mouth.

The candidates could be able to label the major muscles of facial expression:

- ◆ Orbicularis Oris
- ◆ Modiolus
- ◆ Buccinator
- ◆ Zygomaticus
- ◆ Incisivus Labii Superioris
- ◆ Incisivus Labii Inferioris
- ◆ Levator Labii Superioris
- ◆ Depressor Labii Inferioris
- ◆ Caninus
- ◆ Levator Anguli Oris
- ◆ Depressor Anguli Oris
- ◆ Traiangularis
- ◆ Risorius

Higher National Unit specification: support notes (cont)

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The candidates could be able to label the major muscles of mastication:

- ◆ Temporal
- ◆ Masseter
- ◆ Internal Pterygoid
- ◆ External Pterygoid

The candidates could be able to label the major muscles of the floor of mouth:

- ◆ Mylohyoid
- ◆ Digastric
- ◆ Stylohyoid
- ◆ Geniohyoid

As well as being familiar with the muscles the candidate could be able to describe their function/action.

Outcome 3

In this Outcome candidates could be familiar with the histology of the tongue and oral tissues, and be able to explain the effects that age, drugs, radiotherapy, and surgery have on the oral tissues.

The candidate could be able to describe the tongue and its function. This description could include the component parts of the tongue (oral and pharyngeal). The candidate could be able to explain the basic histology of the tongue including: epithelium covering; skeletal muscle; glands; nerve fibres and blood vessels.

The three regions of the tongue could be described in detail: the apex; the body; and the root.

The candidate could be able to specify the functions of the tongue:

- ◆ The mastication and deglutition of food
- ◆ Speech: although the basic voice sounds are produced in the larynx, they are modified by the action of the soft palate, lips and tongue
- ◆ Taste
- ◆ Oral hygiene: the tongue is used to clean food debris from the surface of the teeth
- ◆ Protective
- ◆ In babies, the tongue has an important role as a sensory organ. It is used to explore and identify in its new surrounding
- ◆ Some gestures, not all of them polite
- ◆ Control of dentures

The candidate could be able to describe the effects that age drugs, radiotherapy, and surgery have on the oral tissues. This will include the effects on the component parts of the tooth: Enamel; Dentine; Dental Pulp; Cementum as well as the oral structures including: Alveolar bone; Oral mucosa; Periodontal membrane; Salivary glands.

Higher National Unit specification: support notes (cont)

Unit title: Dental Oral and Facial Anatomy

Outcome 4

In this Outcome candidates could be familiar with the destructive processes affecting teeth and surrounding tissues and the dental management of these processes.

The candidate could be able to detail the cause and effect of destructive processes on teeth and surrounding tissues:

- ◆ Dental caries
- ◆ Attrition
- ◆ Abrasion
- ◆ Erosion
- ◆ Trauma
- ◆ Gingivitis
- ◆ Periodontal disease

The candidate could be able to describe the specific dental therapies available to treat the destructive processes outlined eg root canal therapy, oral hygiene advice, etc.

Guidance on the delivery and assessment of this Unit

It is envisaged that the teaching of this Unit will be delivered through lecturer mediated discussion and the reading of recommended anatomy texts.

The Assessment of this Unit can be carried out as a single assessment lasting two hours. The assessment will be completed under supervised closed-book conditions. It would also be possible to break this assessment down into four separate assessment events which assess each Outcome separately. Where separate assessments are used, those for Outcome 1 and 2 could take 35 minutes each, while 25 minutes each could be allowed for Outcome 3 and 4.

Opportunities for developing Core Skills

In completing the class work of all Outcomes candidates may have the opportunity to develop the component 'Written Communication (reading)' of the Core Skill Communication at level 6. Candidates will have the opportunity to analyse and evaluate complex information from a variety of dental anatomy sources. The general skill that the candidate may have to complete is 'Read and understand complex written communication'.

There is also the opportunity for the candidate to develop the component 'Critical Thinking' of the Core Skill Problem Solving at SCQF level 6 while completing the class work of all Outcomes. In Outcome 1 the candidate is required to analyse the dynamics of the temporomandibular joint during various movements of the mandible. This will require the candidate to analyze the structure and function of the attached musculature to determine their range of movement. In Outcome 2 the candidate is required to investigate and describe the histology of the major muscles of facial expression, mastication and the floor of the mouth In Outcome 3 the candidate is required to interpret the impact of various factors on the oral tissues. The general skill that the candidate may have to complete is 'Analyse a complex situation or issue'.

Higher National Unit specification: support notes (cont)

Unit title: Dental Oral and Facial Anatomy

There are opportunities for the candidate to develop Using Information Technology at SCQF level 6 in this Unit. When candidates are involved in their own independent research practical work they will have an opportunity to develop the general skill 'Using an IT system independently to process a range of information'. Candidates may have to complete a number of internet searches to find information and keep their data secure and manage its storage.

The assessment of this Unit may also contribute towards the component 'Written Communication (writing)' of the Core Skill Communication at SCQF level 6. Candidates may have to structure their responses, which could include complex vocabulary, accurately and using a logical structure. The general skill that candidates may have to complete is 'Produce well-structured written communication on complex topics'.

Open learning

This Unit could be delivered by distance learning, which may incorporate some degree of online support. With regard to assessment, planning would be required of the centre concerned to ensure the sufficiency and authenticity of the candidate evidence. Arrangements would need to be put in place to ensure that assessment for Outcomes 1 - 4 are conducted under controlled, supervised conditions.

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: Dental Oral and Facial Anatomy

This Unit will develop your knowledge and understanding of how the health and physical state of a patient and their oral tissues influence the activities of the dental technician.

The Unit has four main areas, each the subject of a separate Outcome. To begin with you will be looking at the skull and the bones that make up the face and jaw. You will then examine the muscles involved in facial expression, chewing and swallowing food, known by the term 'mastication'. This is then followed by looking at the tongue and oral tissues and the effects of age, drug therapy and surgery on these tissues. Finally you will focus on the effects of a variety of destructive process on the teeth and the surrounding tissues.

On completion of this Unit you will be able to:

- ◆ explain the basic anatomy and development of the bones of the facial skeleton
- ◆ identify and describe the action of the major muscles of facial expression, mastication and floor of mouth
- ◆ explain the effects of external factors on the hystology of the tongue and oral tissues
- ◆ explain the destructive processes affecting teeth and surrounding tissues and the dental therapies of these processes

The assessment of this Unit could consist of a single instrument of assessment. You may be assessed in one assessment event could consist of a set number of restricted response questions, lasting no more than two hours and be carried out under supervised, controlled conditions. This assessment may be carried out at the end of the delivery of the Unit. However, you may be assessed in four separate assessment events. Where separate assessments are used, those for Outcome 1 and 2 could take 35 minutes each, while 25 minutes each could be allowed for Outcome 3 and 4.

It should be noted that you must achieve all the minimum evidence specified for each Outcome in order to pass the Unit.

In completing the class work and assessments of this Unit you may have the opportunity to develop the component: 'Written Communication' of the Core Skill Communication and 'Critical Thinking' of the Core Skill Problem Solving at SCQF level 6.