



## Higher National Unit specification

### General information for centres

**Unit title:** Dental Orthodontics: Malocclusion

**Unit code:** F43S 35

**Unit purpose:** This Unit is designed to enable candidates to develop knowledge and skills in the causes, description of, and treatment of malocclusion and facial deformity. It will develop their knowledge of the techniques used in the fabrication of appliances to correct malocclusion.

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

- 1 Explain malocclusions and treatment strategies.
- 2 Describe the use of cephalometric radiograph in the diagnosis of orthognatic surgical procedures.
- 3 Describe the classification of cleft lip and palate deformities.
- 4 Construct passive appliances to correct malocclusion.

**Credit points and level:** 3 HN credits at SCQF level 8: (24 SCQF credit points at SCQF level 8\*)

*\*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:** Although access to this Unit is at the discretion of the centre, it is recommended that the candidate should have completed the HNC in Dental Technology or equivalent so that dental laboratory practice, working to a prescription, treatment planning skills and preparing products to a standard suitable for presentation to a clinical dental professional are established. The ability to prepare submissions to a standard format, which includes Harvard referencing, would also be preferable.

**Core Skills:** There are opportunities to develop the component 'Written Communication' of the Core Skill *Communication* at SCQF level 6, the component Using Number of the Core Skill *Numeracy* at SCQF level 6, and the component Planning and Organising of the Core Skill *Problem Solving* 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:** Outcomes 1, 2 and 3 could be assessed using candidate submissions. Outcome 4 is assessed by a practical task carried out within a dental laboratory setting.

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

**Unit title:** Dental Orthodontics: Malocclusion

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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**

Explain malocclusions and treatment strategies

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

- ◆ Skeletal pattern of malocclusion
- ◆ Soft tissue problems
- ◆ Dentition local factors
- ◆ Treatment strategies

#### **Evidence Requirements**

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

- ◆ the skeletal pattern of malocclusion
- ◆ the soft tissue problems and local factors that influence the dentition
- ◆ the main strategies for the treatment of malocclusion caused by:
  - skeletal
  - soft tissue problems
  - local dentition factors

#### **Assessment Guidelines**

This Outcome could be assessed in the form of a candidate submission. Whilst the format the submission takes is left to the discretion of the centre, the recommended word count for such a submission is 1,500 words or equivalent (excluding appendices and diagrams). The submission may be presented in any suitable way to ensure Disability Discrimination Act (DDA) compliance. Examples of suitable formats are: oral questioning; candidate presentation; and candidate report. Further details can be found in the Support Notes section.

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

**Unit title:** Dental Orthodontics: Malocclusion

### **Outcome 2**

Describe the use of cephalometric radiograph in the diagnosis of orthognatic surgical procedures

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

- ◆ Cephalometric radiography
- ◆ Orthognatic surgical procedures

#### **Evidence Requirements**

Candidates will need to provide evidence to demonstrate their Knowledge and/or Skills by describing:

- ◆ the technique of cephalometric radiography and explain its use in the diagnosis and treatment of two orthognatic surgical procedures

#### **Assessment Guidelines**

This Outcome could be assessed in the form of a candidate submission. Whilst the format the submission takes is left to the discretion of the centre, the recommended word count for such a submission is 1,500 words or equivalent (excluding appendices and diagrams). The submission may be presented in any suitable way to ensure DDA compliance. Examples of suitable formats are: oral questioning; candidate presentation; and candidate report. Further details can be found in the Support Notes section.

### **Outcome 3**

Describe the classification of cleft lip and palate deformities

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

- ◆ Classification system
- ◆ Congenital cleft lip and palate deformities

#### **Evidence Requirements**

Candidates will need to provide evidence to demonstrate their Knowledge and/or Skills by describing:

- ◆ the classification system used to categorise congenital cleft lip and palate deformities

#### **Assessment Guidelines**

This Outcome could be assessed in the form of a candidate submission. Whilst the format the submission takes is left to the discretion of the centre, the recommended word count for such a submission is 1,500 words or equivalent (excluding appendices and diagrams). The submission may be presented in any suitable way to ensure DDA compliance. Examples of suitable formats are: oral questioning; candidate presentation; and candidate report. Further details can be found in the Support Notes section.

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

**Unit title:** Dental Orthodontics: Malocclusion

### **Outcome 4**

Construct passive appliances to correct malocclusion

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

- ◆ Materials
- ◆ Passive appliance construction
- ◆ Finishing techniques

#### **Evidence Requirements**

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

- ◆ work to a prescription to produce five passive functional appliances to correct malocclusion

The appliances should be finished to an accuracy ready for delivery to the clinical dental professional.

These practical assessment tasks must be carried out within a dental laboratory setting.

#### **Assessment Guidelines**

The assessment of this Outcome will be in the form of practical tasks involving the candidate in the production of five appliances, each to a given prescription.

## Administrative Information

**Unit code:** F43S 35

**Unit title:** Dental Orthodontics: Malocclusion

**Superclass category:** PF

**Original date of publication:** August 2008 (November 2008)

**Version:** 02

### History of changes:

Version	Description of change	Date
02	Credit value increased to 3. Now carries 24 credit points at level 8.	17/11/08

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## **Higher National Unit specification: support notes**

### **Unit title: Dental Orthodontics: Malocclusion**

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 120 hours.

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

The purpose of this Unit is to allow candidates to develop knowledge, understanding and practical skills in the description of occlusal, skeletal and facial deformity and the techniques for the fabrication of appliances to correct malocclusion.

It is envisaged that the teaching of this Unit could be delivered through lecturer mediated discussion, practical demonstrations and the reading of recommended texts.

A list of topics for each Outcome is given below.

#### **Outcome 1**

In this Outcome candidates become familiar with the skeletal pattern associated with malocclusion, ie Anteroposterior (Class I; Class II; Class III) and related soft tissue problems if any associated with them ie lip tonicity; incompetent lips (inability to create an oral seal); lip line higher relative to anterior crown height.

The Outcome will also provide the opportunity for candidates to become familiar with how the dentition influences the malocclusion, ie tooth/arch size discrepancies and the strategy for treatment.

#### **Outcome 2**

In this Outcome candidates will become familiar with the uses of cephalometric radiography:

- ◆ Assess the skeletal pattern accurately
- ◆ Measure the angulations of teeth to base planes and to one another
- ◆ Assess treatment options
- ◆ Measure and monitor post treatment and growth change
- ◆ Determine the position of unerupted teeth

Candidates may be introduced to the two modes of data input from the cephalograph, ie point and stream as well as the method of data interpretation through observing good practice and /or hands on experience.

Candidate should also become familiar with the processes relating to orthognatic surgery used to correct conditions of the jaw and face. Such conditions relate to structure, growth, sleep apnea, Temporomandibular Joint (TMJ) disorders.

The procedural options are: maxillary advancement, mandibular retrusion genioplasty or a combination of these to treat an apparent prognathic mandible. An onlay graft, implant or sliding genioplasty can be used to treat a receding chin.

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

**Unit title:** Dental Orthodontics: Malocclusion

### **Outcome 3**

In this Outcome candidates should become familiar with the classification system for congenital cleft lip and palate deformities.

### **Outcome 4**

In this Outcome candidates will construct five appliances to correct malocclusion.

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

This Unit is likely to form part of a Group Award designed to provide candidates with technical and professional knowledge and skills for employment within a dental technology environment. It is envisaged that the teaching of this Unit could be delivered through lecturer-mediated discussion, practical demonstrations, reading of recommended texts and professional peer-review journals.

Outcomes 1, 2 and 3 could be assessed by candidate submissions. Whilst the format each submission takes is left to the discretion of the centre the author would recommend that each submission be the equivalent to 1,500 words (excluding appendices and diagrams). Examples of possible submission types are:

### *Oral Questioning*

The underpinning knowledge and skills could be assessed using the form of oral questioning. The centre would need to develop a bank of suitable questions of equal reliability and validity to ensure that each candidate is assessed appropriately ensuring coverage of all underpinning knowledge. If this format is selected careful consideration is required in relation to venue, etc.

### *Candidate Presentation*

A candidate presentation could take the form of an oral presentation by the candidate to their peers and teaching staff. Such a submission would need time to be prepared and therefore careful consideration will need to be given as to when the assessment is given to candidates to allow time for research and preparation. The candidate may use presentation software such as PowerPoint to aid the presentation delivery but this is not essential. The candidate may opt to produce and talk to a handout supplied to the group. Using such software could give the candidate the opportunity to develop their Core Skills in *Information Technology*.

### *Candidate Report*

A candidate report may be presented in a variety of suitable ways: oral, written or signed. The author would suggest that if a candidate report is selected as the chosen assessment format that this should have a conventional structure ie title page; table of contents; introduction; report body; conclusion(s); reference list. Such a submission would need time to be prepared and therefore careful consideration will need to be given as to when the assessment is given to candidates to allow time for research and preparation.

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

### Unit title: Dental Orthodontics: Malocclusion

The assessment of Outcome 4 will be in the form of practical tasks involving the candidate in the production of five passive functional appliances to a given prescription. These practical assessment tasks should be carried out within a dental laboratory setting.

#### *Opportunities for developing Core Skills*

In completing the class work of Outcomes 1, 2 and 3 candidates may have the opportunity to develop the component Written Communication of the Core Skill *Communication* at SCQF level 6.

Candidates may have the opportunity to analyse and evaluate complex information from a variety of dental literature sources. The general skill that the candidate may have to complete is 'Read and understand complex written communication'.

If the candidates produce a report for Outcomes 1, 2 and 3, they will have the opportunity to develop the component Written Communication of the Core Skill *Communication* at SCQF level 6.

Candidates may have to structure their report, 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'.

If the candidate produces a report for Outcomes 1, 2 and 3, there is the opportunity for the candidate to develop the Core Skill *Information Technology* at SCQF level 6. Candidates could carry out searches of information databases while carrying out research for the report.

There is also the opportunity for the candidate to develop the components Planning and Organising and Reviewing and Evaluating of the Core Skill *Problem Solving* at SCQF level 6 while completing the class work of Outcome 4. In this Outcome the candidate will construct five passive functional appliances that will require the candidate to organise, plan and review the procedures involved in the task.

There is the opportunity for the candidate to develop the component Critical Thinking of the Core Skill *Problem Solving* at SCQF level 6 while completing the Evidence Requirements for Outcomes 1, 2 and 3. The candidate may be required to analyse and evaluate complex information, explaining the use and types of complex partial denture design. The general skill that candidates may have to complete is 'Analyse a complex situation or issue'.

There is the opportunity to develop the component Using Graphical Information of the Core Skill *Numeracy* at SCQF level 6. When constructing the five passive functional appliances in Outcome 4 candidates will have to interpret complex data presented in graphical form from numerous dental material manufacturers. The general skill that candidates may have to complete is 'Apply a wide range of graphical skills to interpret and present complex information in generalised contexts'.

### 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 by centres to ensure the sufficiency and authenticity of the candidate evidence. Outcome 4 requires to be assessed within a dental laboratory setting

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

**Unit title:** Dental Orthodontics: Malocclusion

### **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: Dental Orthodontics: Malocclusion

This Unit has been designed to develop your knowledge and skills of malocclusion and facial deformity. You will look at materials and techniques used in the fabrication of appliances to correct malocclusions.

The Unit has four main areas, each the subject of a separate Outcome. Firstly, you will look at the causes and treatment of malocclusion. Outcome 2 looks at cephalometric radiographs in orthodontic diagnosis and at orthognatic surgical procedures. Outcome 3 explores the classification of cleft lip and palate deformities. In Outcome 4 you will construct appliances to correct malocclusion.

The formal assessment of this Unit consists of a practical assessment for Outcome 4 and project work for Outcomes 1, 2 and 3. The assessment for Outcomes 1, 2 and 3 may be carried out at the end of delivery of the Unit. The practical assessment tasks should be carried out within a dental laboratory setting.

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* at SCQF level 6, and the components Planning and Organising, Reviewing and Evaluating and Critical Thinking of the Core Skill *Problem Solving* at SCQF level 6 in this Unit. There are also opportunities to develop the Core Skill *Information Technology* at SCQF level 6, and the component Using Graphical Information of the Core Skill *Numeracy* at SCQF level 6, although there is no automatic certification of Core Skills or Core Skills components.