



## Higher National Unit specification

### General information for centres

**Unit title:** Dental Fixed Prosthodontics: Bridgework

**Unit code:** F43K 35

**Unit purpose:** This Unit is designed to develop the candidate's knowledge and skills in the design and manufacture of dental bridges to given prescriptions. It prepares them for this by giving them extensive practical instruction on the reproduction of the natural tooth form using a range of materials.

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

- 1 Evaluate types and uses of dental bridges.
- 2 Construct two cast-metal bridges.
- 3 Construct porcelain bonded to metal bridges.

**Credit points and level:** 2 HN credits at SCQF level 8: (16 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 candidates 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 underpinning knowledge and skills. 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, 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.

**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 using a candidate submission for Outcome 1. Outcomes 2 and 3 are assessed by practical tasks carried out within a dental laboratory setting.

## Higher National Unit specification: statement of standards

**Unit title:** Dental Fixed Prosthodontics: Bridgework

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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

Evaluate types and uses of dental bridges

#### Knowledge and/or Skills

- ◆ Conventional dental bridge types
- ◆ Adhesive bridge types
- ◆ Indicators and contra indicators

#### Evidence Requirements

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

- ◆ evaluate the materials, complexity of design, uses and indicators and contra indicators for the following dental bridge types:
  - Conventional:
    - Fixed — fixed
    - Fixed — movable
    - Cantilever
    - Spring cantilever
  - Adhesive
    - Maryland
    - Rochette

#### 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 it is recommended that such a submission be the equivalent to 1,500 words (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 are given in the Support Notes.

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

**Unit title:** Dental Fixed Prosthodontics: Bridgework

### **Outcome 2**

Construct two cast-metal bridges

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

- ◆ Bridge construction procedures

#### **Evidence Requirements**

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

- ◆ one semi-fixed bridge
- ◆ one fixed-fixed bridge

Working to a prescription, for each of the cast-metal bridges, candidates will need to ensure that the cast restorations are:

- ◆ fitted onto the preparations accurately
- ◆ contoured accurately
- ◆ occluding accurately with the opposing arch
- ◆ polished to the standard required for oral aesthetics

The components should be finished to an accuracy ready for delivery to the dental surgeon for trial in the patient's mouth.

The practical assessment tasks must be carried out within a dental laboratory setting and be completed within a timeframe which reflects commercial practice and is agreed with the tutor.

#### **Assessment Guidelines**

The candidate may produce two cast-metal bridges of the two prescribed types, one semi-fixed and one fixed-fixed bridge. Centres may select the type of cast-metal bridges for construction or could let the candidate choose the items for construction.

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

**Unit title:** Dental Fixed Prosthodontics: Bridgework

### Outcome 3

Construct porcelain bonded to metal bridges

#### Knowledge and/or Skills

- ◆ Wax substructure design
- ◆ Investing and casting procedures
- ◆ Procedures for trimming and seating of substructure
- ◆ Process of porcelain manipulation
- ◆ Metal work polishing procedures

#### Evidence Requirements

Candidates will need to provide evidence to demonstrate their Knowledge and/or Skills by showing that they can produce two conventional bridges and one adhesive bridge from the following:

- ◆ Conventional bridge:
  - Fixed — fixed
  - Fixed — movable
  - Cantilever
  - Spring cantilever
- ◆ Adhesive
  - Maryland
  - Rochette

Working to a prescription, for each of the porcelain bonded to metal bridges, the candidate will need to ensure that:

- ◆ the wax substructures are accurately designed and constructed to ensure accurate marginal fit and to provide sufficient clearance for porcelain build-up
- ◆ the wax substructures are cast, trimmed and seated accurately
- ◆ the cast substructures are: fitted onto the preparations accurately; contoured accurately; occluding accurately with the opposing arch; polished to the standard required for oral aesthetics
- ◆ the porcelain is manipulated correctly ensuring accurate: build-up; firing; contouring; staining; glazing

The components should be finished to an accuracy ready for delivery to the dental surgeon for trial in the patient's mouth. The practical assessment tasks must be carried out within a dental laboratory setting.

#### Assessment Guidelines

The candidate may produce three types of porcelain bonded to metal bridges which meet the requirements of a prescription provided by the centre. Centres or candidates could select the bridge types to construct.

## Administrative Information

**Unit code:** F43K 35

**Unit title:** Dental Fixed Prosthodontics: Bridgework

**Superclass category:** PF

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

**Version:** 02

### History of changes:

Version	Description of change	Date
02	Credit value reduced to 2. Now carries 16 SCQF credit points at level 8	17/11/08

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

### **Unit title: Dental Fixed Prosthodontics: Bridgework**

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 purpose of this Unit is to allow candidates to develop the necessary knowledge and understanding to become competent in the production of a range fixed prosthodontic restorations. The Unit develops the candidate's knowledge and skills in the design and manufacture of dental bridges to given prescriptions and will provide them with extensive practical instruction on the reproduction of the natural tooth form using a range of materials. This Unit is an optional Unit in the HND in Dental Technology Group Award.

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

#### **Outcome 1**

This Outcome looks at conventional dental bridge types, ie Fixed — fixed; Fixed — movable; Cantilever; and Spring cantilever as well as the types of adhesive bridge ie Maryland; and Rochette.

Candidates will also examine the indications and contra-indications for the use of each dental bridge type.

#### **Outcome 2**

This Outcome looks at the construction of two cast-metal bridge restorations from the list detailed under the Evidence Requirements of the Outcome. The centre has the flexibility to select any two cast-metal bridge restorations or where possible could let the candidate select which bridge type to construct. This will depend on resources available.

Construction of any two cast-metal bridge restorations will demonstrate success in this Outcome. All appliances should be finished accurately for delivery.

#### **Outcome 3**

In this Outcome, candidates will construct two porcelain bonded to metal conventional bridge restorations and one porcelain bonded to metal adhesive bridge from the list detailed under the Evidence Requirements of the Outcome. The centre has the flexibility to select any two conventional bridge restorations and any one adhesive bridge or where possible could let the candidate select which bridge types to construct. This will depend on resources available.

Construction of any two conventional bridge restorations and one adhesive bridge restoration will demonstrate success in this Outcome. All appliances should be finished accurately for delivery.

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

**Unit title:** Dental Fixed Prosthodontics: Bridgework

### 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.

This Unit offers the opportunity to introduce the candidates to self and peer assessment as a formative assessment method. Such an initiative as well as providing both the candidate and the centre with an indication of candidate progress will also help in the development of the candidate's critical skills. A possible example would be to ask the candidates to develop quality criteria for the two cast-metal bridges and porcelain bonded to metal bridges being constructed in Outcomes 2 and 3 as group work activities, evaluate their own performance and that of a peer against this agreed set of criteria.

Outcome 1 could be assessed by a candidate submission. Whilst the format the submission takes is left to the discretion of the centre the author would recommend that such a 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. The author would suggest that such a format would require to be carried out in time-controlled conditions.

#### *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 Fixed Prosthodontics: Bridgework

The assessment of Outcomes 2 and 3 will be in the form of practical tasks involving candidates in the production of two cast-metal bridges and porcelain bonded to metal bridges, from those listed in the Outcomes' Evidence Requirements, to a given prescription. These practical tasks should be carried out within a dental laboratory setting.

#### *Opportunities for developing Core Skills*

In completing the class work of Outcome 1 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 Outcome 1, 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 Outcome 1 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 whilst 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 2. In this Outcome the candidate will construct two complex pieces of practical work 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 Outcome 1. The candidate may be required to analyse and evaluate complex information, explaining the use and types of dental bridge restoration used in fixed prosthodontics. 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 complex removable partial dentures in Outcome 2 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 the centre to ensure the sufficiency and authenticity of the candidate evidence. Outcomes 2 and 3 require to be assessed within a dental laboratory setting.

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

**Unit title:** Dental Fixed Prosthodontics: Bridgework

### **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 Fixed Prosthodontics: Bridgework

This Unit is designed to develop your knowledge and skills in the design and construction of a range of fixed prosthodontic restorations. You will look at the design and manufacture of dental bridges to given prescriptions and gain practical instruction on the reproduction of the natural tooth form using a range of materials.

The Unit has three main areas, each the subject of a separate Outcome. Firstly you will evaluate the uses and types of dental bridges. In Outcome 2 you will construct two cast-metal bridges to a given clinical prescription. In Outcome 3 you will construct two conventional and one adhesive, porcelain bonded to metal bridges.

The formal assessment of this Unit may consist of a candidate submission for Outcome 1 and practical assessments for Outcomes 2 and 3. The assessment for Outcome 1 may be carried out at the end of delivery of the Unit. The practical assessment exercises 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.