



## Higher National Unit specification

### General information for centres

**Unit title:** Dental Fixed Prosthodontics

**Unit code:** F1M7 34

**Unit purpose:** This Unit is about the theory and skills required to produce a range of single Unit fixed prosthodontic restorations. This Unit introduces the candidate to the design and manufacture of simple restorations to a given prescription. The candidate will gain knowledge of the importance of impression assessment, production of accurate master casts and dies. The candidate will be introduced to extensive practical instruction on the reproduction of tooth morphology.

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

- 1 Produce definitive casts with removable dies, using three different systems.
- 2 Explain the design and manufacturing principles of single Unit fixed prosthodontic restorations.
- 3 Produce single Unit fixed prosthodontic restorations.

**Credit points and level:** 1 HN credit at SCQF level 7: (8 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 for the candidate to have completed the National Unit DOK4 12 *Dental Casts* and the Higher National Units: F1M6 34 *Dental Biomaterials* and F1M5 34 *Dental Alloy Technologies*. Candidates could have completed an induction to dental technology course.

**Core Skills:** There are opportunities to develop the Core Skills of Problem Solving (Planning and Organising) up to SCQF level 6; Communication (Written Communication) at SCQF level 6 and Numeracy (Using Number) at SCQF level 5 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:** Outcomes 1 and 3 are practical assessments and should be carried out within a dental laboratory setting. Outcome 2 could be assessed using 10 short answer questions, this assessment event could last 45 minutes.

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

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

**Unit title:** Dental Fixed Prosthodontics

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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**

Produce definitive casts with removable dies, using three different systems

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

- ◆ Properties and manipulation of improved dental stones
- ◆ Quality control of models produced
- ◆ Precision model production, including systems available

#### **Evidence Requirements**

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

- ◆ produce definitive casts, in improved dental stone, incorporating removable dies using:
  - Hand pin system.
  - ‘Pindex’ System
  - Tray system

Each model produced should be quality checked to ensure that it accurately reflects the supplied impression. All dies should be easily removed and replaced into the base stone and should be free of air blows. After sawing out and trimming in of dies all margins should be intact. Pins used for the hand pin and ‘Pindex’ systems should be fixed securely in the die stone without movement. There should be no lateral movement of the die when situated on the model.

Evidence for this Outcome must be obtained within a dental laboratory setting.

#### **Assessment Guidelines**

See Outcome 3.

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

**Unit title:** Dental Fixed Prosthodontics

### Outcome 2

Explain the design and manufacturing principles of single Unit fixed prosthodontic restorations

#### Knowledge and/or Skills

- ◆ Temporary restoration construction
- ◆ Custom tapered posts construction
- ◆ Porcelain restorations construction
- ◆ Composite (light-cured) restorations construction

#### Evidence Requirements

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

explain the processes and materials used to produce a:

- ◆ Temporary crown. Candidate responses should include the following processes:
  - Chairside construction
  - Laboratory
- ◆ Custom tapered post. Candidate responses should include the following process:
  - Die model preparation
  - Tapered post wax build up
  - Sprueing and investing of tapered post
  - Casting of custom tapered post.
  - Finishing of custom tapered post
  - Fixation
- ◆ Porcelain restoration. Candidate responses should include the following process:
  - Mixing of porcelain powder
  - Application of the core porcelain to the matrix
  - Ditching of the cervical porcelain
  - Build up of dentine and enamel
  - Overbuilding the porcelain jacket crown
  - Porcelain Firing Sequence
  - Porcelain trimming and glazing
  - Fixation of porcelain restoration
- ◆ Light cured composite resin inlay. Candidates responses should include the following process:
  - Preparation of composite resins
  - Application of composite resin to die
  - Curing of composite resin
  - Finishing of composite resin restoration
  - Fixation of composite resin restoration

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

**Unit title:** Dental Fixed Prosthodontics

### **Outcome 3**

Produce single Unit fixed prosthodontic restorations

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

- ◆ Temporary crown
- ◆ Custom tapered post
- ◆ Ceramic restoration
- ◆ Light cured composite resin inlay

#### **Evidence Requirements**

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

- ◆ produce, from supplied prescriptions:
  - one temporary crown
  - one custom tapered post
  - one ceramic restoration
  - one light cured composite resin inlay

Each restoration should reflect accurate tooth form and be in harmony with adjacent and opposing dentition.

Evidence for this Outcome must be obtained within a dental laboratory setting.

#### **Assessment Guidelines for the Unit**

Outcomes 1 and 3 should be assessed by practical demonstration of the manipulation of dental materials to a given prescription to produce the restorations identified within the Evidence Requirements of each Outcome. All practical work must be carried out within a dental laboratory setting.

Outcome 2 could be assessed using short answer questions, minimum of 10 maximum of 15. This assessment could be carried out under controlled supervised conditions lasting no more than 45 minutes.

## Administrative Information

**Unit code:** F1M7 34  
**Unit title:** Dental Fixed Prosthodontics  
**Superclass category:** PF  
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### History of changes:

Version	Description of change	Date

**Source:** SQA

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

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

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 40 hours.

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

The purpose of this Unit is to allow candidates to develop knowledge and understanding, and practical skills by constructing a variety of simple fixed prosthodontic restorations.

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 the candidate will demonstrate a competence in the production of accurate definitive casts using the following recognised systems:

- ◆ Hand pin
- ◆ 'Pindex'
- ◆ Tray

In this Outcome the candidate will explore the use of improved stones and the importance of powder/water ratio and its effect. Candidates will also be exposed to vacuum mixing and vibration during the casting process.

Candidates are expected to clearly identify the correct procedure for producing accurate working casts from the impressions supplied. Each model produced should accurately reflect the supplied impression. All dies should be easily removed and replaced into the base stone and should be free of air blows. After sawing out and trimming in of dies all margins should be intact. Pins used for the hand pin and pindex systems should be fixed securely in the die stone without movement. There should be no lateral movement of the die when situated on the model.

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

**Unit title:** Dental Fixed Prosthodontics

### Outcome 2

In this Outcome candidates could be able to describe the correct design and manufacturing principles of fixed prosthodontic restorations.

The description for temporary restorations could cover:

- ◆ Purpose of temporary restoration:
  - Aesthetics
  - Space maintainer
  - Gingivae preservation
  - Preparation sensitivity and patient discomfort
- ◆ Process of temporary restoration construction:
  - Chairside construction
  - Laboratory construction

The description for custom tapered posts should cover:

- ◆ Die model preparation
- ◆ Tapered post wax build up
- ◆ Sprueing and investing of tapered post
- ◆ Casting of custom tapered post
- ◆ Finishing of custom tapered post
- ◆ Fixation of custom tapered post

The description for porcelain restorations should cover:

- ◆ Mixing of porcelain powder
- ◆ Application of the core porcelain to the matrix
- ◆ Ditching of the cervical porcelain
- ◆ Build up of dentine and enamel
- ◆ Overbuilding the porcelain jacket crown
- ◆ Porcelain Firing Sequence
- ◆ Porcelain trimming and glazing
- ◆ Fixation of porcelain restoration

The description for composite restorations should cover:

- ◆ Preparation of composite resins
- ◆ Application of composite resin to die
- ◆ Curing of composite resin
- ◆ Finishing of composite resin restoration
- ◆ Fixation of composite resin restoration

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

### Unit title: Dental Fixed Prosthodontics

#### Outcome 3

In this Outcome the candidate is expected to work to prescriptions supplied and construct the following fixed prosthodontic restorations:

- ◆ one temporary crown
- ◆ one custom tapered post
- ◆ one porcelain jacket crown
- ◆ one composite resin inlay

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

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 2 could be assessed using short answer questions, minimum of 10 maximum of 15. This assessment could be carried out under controlled supervised conditions lasting no more than 45 minutes.

Outcomes 1 and 3 should be assessed by practical demonstration of competent technical performance in the manipulation of dental materials to given prescription to produce:

- ◆ one working model utilising the hand pin technique
- ◆ one working model utilising the 'Pindex' system
- ◆ one working model utilising the tray system
- ◆ one temporary crown
- ◆ one custom tapered post
- ◆ one ceramic restoration
- ◆ one light cured composite resin inlay

Outcomes 1 and 3 could be carried out using open conditions.

#### *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 5. 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, understand and evaluate written communication'.

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 all Outcome 1. In this Outcome the candidate will produce three types of working models, this will require the candidate to organise, plan and review the procedures involved in the task as well as evaluating the Outcome. The general skills that the candidate may have to complete are 'Plan, organise and complete a task', 'Review and evaluate a problem solving activity'.

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

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

In Outcome 3 the candidate has the opportunity to develop the components ‘Planning and Organising’ and ‘Reviewing and Evaluating’ of the Core Skill Problem Solving at SCQF level 6. The candidate has to produce four single Unit prosthodontic restorations. These restorations require careful planning, organising and reviewing to ensure that they reflect accurate tooth form. The general skills that the candidate may have to complete are ‘Plan, organise and complete a complex task’, ‘Review and evaluate a complex problem solving activity’.

In Outcome 1 and 3 each of the practical exercises requires the candidate to be familiar with a variety of weights and measures. This will give the candidate the opportunity to develop the component ‘Numeracy — Using Number’ of the Core Skill Numeracy at SCQF level 5.

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 the assessment for Outcome 2, planning would be required of the centre concerned to ensure the sufficiency and authenticity of the candidate evidence. Outcomes 1 and 3 required to be assessed within a dental laboratory setting.

### **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

This Unit has been designed to develop your knowledge, understanding, and practical skills by constructing a variety of simple fixed prosthodontic restorations.

The Unit has three main areas, each the subject of a separate Outcome. To begin with you will be looking at the production of accurate working casts incorporating dies carrying the preparations ready for the restorations. You will then gain an understanding of the procedures involved in the construction of a variety of simple fixed restorations. This is then followed by the construction of four simple fixed restorations to a given prescription.

On completion of this Unit you will be able to:

- ◆ produce definitive casts with removable dies, using three different systems
- ◆ explain the design and manufacturing principles of various single Unit fixed prosthodontic restorations
- ◆ produce single Unit fixed prosthodontic restorations

Outcome 2 may consist of an assessment in the form of a set of short answer questions. This assessment will normally be carried out at the end of delivery of the Unit.

Outcomes 1 and 3 will assess your competent technical performance in the manipulation of dental materials to a given prescription. These assessments will take place 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 up to SCQF level 5, 'Using Number' of the Core Skill Numeracy up to SCQF level 4, and 'Planning and Organising' of the Core Skill Problem Solving up to SCQF level 6.