



## Higher National Graded Unit Specification

### General Information for Centres

This Graded Unit has been validated as part of the HND Dental Technology. Centres are required to develop the assessment instrument in accordance with this validated specification. Centres wishing to use another type of Graded Unit or assessment instrument are required to submit proposals detailing the justification for change for validation.

**Graded Unit Title:** Dental Technology: Graded Unit 2

**Graded Unit Code:** F57G 35

**Type of Graded Unit:** Project

**Assessment Instrument:** Practical Assignment

**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 National 1 to Doctorates.*

**Purpose:** This Graded Unit is designed to provide evidence that the candidate has achieved the following principal aims of the HND Dental Technology:

- ◆ to develop planning, analytical, synthesising and problem-solving skills within the dental laboratory
- ◆ to effectively develop communication and interpersonal skills with other Dental Care Professionals (DCP's) and when necessary patients
- ◆ to develop professional attitudes and high ethical standards in relation towards patient treatment and the need for continuing professional development
- ◆ enhance employment prospects
- ◆ interpret and implement advanced dental prescriptions
- ◆ use a wide range of complex dental techniques
- ◆ manage laboratory procedures involving the planning integration and application of a variety of skills within a determined time scale
- ◆ organise and utilise specialist dental laboratory equipment
- ◆ utilise a wide range of dental products effectively
- ◆ to develop transferable skills including Core Skills that will allow candidates to function more effectively in the work place
- ◆ to develop study and research skills

## General Information for Centres (cont)

**Recommended Prior Knowledge and Skills:** It is recommended that the candidate should have completed the mandatory dental Units and be in the process of completing one set from the following three groups of Units relating to the above specific aims prior to undertaking this Graded Unit:

### Mandatory Dental Units

- ◆ F43K 35 — *Dental Fixed Prosthodontics: Bridgework*
- ◆ F3G8 35 — *Dental Removable Prosthodontics: Complex Complete Dentures*
- ◆ F43P 35 — *Dental Orthodontics: Complex Removable Appliances*

### Fixed Prosthodontics — Option Units

- ◆ F43M 34 — *Dental Fixed Prosthodontics: Precision Attachments*
- ◆ F43N 35 — *Dental Fixed Prosthodontics: Veneers and Inlays*
- ◆ F43L 35 — *Dental Fixed Prosthodontics: Implants*

### Removable Prosthodontics — Option Units

- ◆ F43T 35 — *Dental Removable Prosthodontics: Complex Partial Dentures*
- ◆ F3G9 35 — *Dental Removable Prosthodontics: Implants*
- ◆ F3G7 34 — *Dental Removable Prosthodontics: Over-dentures, Obturators and Precision Attachments*

### Orthodontics — Option Units

- ◆ F42R35 — *Dental Orthodontics: Fixed Appliance Therapy*
- ◆ F3G635 — *Dental Orthodontics: Functional Appliances*
- ◆ F43S35 — *Dental Orthodontics: Malocclusions*

**Core Skills:** There are opportunities to develop the Core Skills of *Communication, Problem Solving, IT and Numeracy* at SCQF level 6 in this Unit.

**Assessment:** This Graded Unit will be assessed by the use of Practical Assignment. The developed Practical Assignment should provide the candidate with the opportunity to produce evidence that demonstrates she/he has met the aims of the Graded Unit that it covers.

## Administrative Information

**Graded Unit Code:** F57G 35

**Graded Unit Title:** Dental Technology: Graded Unit 2

**Original date of publication:** August 2008

**Version:** 02

### History of Changes:

Version	Description of change	Date
02	Update of Conditions of Assessment	Jul 2018

**Source:** SQA

© Scottish Qualifications Authority 2009, 2018

This publication may be reproduced in whole or in part for educational purposes provided that no profit is derived from reproduction and that, if reproduced in part, the source is acknowledged.

SQA acknowledges the valuable contribution that Scotland's colleges have made to the development of Higher National qualifications.

Additional copies of this Graded Unit specification if sourced by the Scottish Qualifications Authority can be purchased from the Scottish Qualifications Authority. Please contact the Customer Contact Centre for further details, telephone 0345 279 1000.

# **Higher National Graded Unit Specification: Instructions for designing the assessment task and assessing candidates**

## **Graded Unit Title:** Dental Technology: Graded Unit 2

### **Conditions of Assessment**

The candidate should be given a date for completion of the practical assignment. However, the instructions for the assessment task should be distributed to allow the candidate sufficient time to assimilate the details and carry out the assessment task. During the time between the distribution of the assessment task instructions and the completion date, assessors may answer questions, provide clarification, guidance and reasonable assistance.

Reasonable assistance is the term used by SQA to describe the difference between providing candidates with some direction to generate the required evidence for assessment and providing too much support which would compromise the integrity of the assessment. Reasonable assistance is part of all learning and teaching processes.

In relation to the assessment of Higher National Project-based Graded Units, assessors may provide advice, clarification, and guidance during the time between the distribution of the project instructions and the completion date, ie at each stage of the project.

Remediation allows an assessor to clarify candidate responses, either by requiring a written amendment or by oral questioning, where there is a minor shortfall or omission in evidence requirements. In either case, such instances must be formally noted by the assessor, either in writing or by recording, and be made available to the internal and external verifier.

In relation to Higher National Project-based Graded Units, candidates must be given the opportunity for remediation at each stage of the project.

The evidence for a Higher National Project-based Graded Unit is generated over time and involves three distinct stages, each of which has to be achieved before the next is undertaken. This means that any re-assessment of stages must be undertaken before proceeding to the next stage. The overall grade is derived from the total number of marks across all sections, and should reflect the ability of the candidate to work autonomously and the amount of support required. In relation to Higher National Project-based Graded Units, candidates who have failed any stage of the project and have been unable to provide the necessary evidence through remediation must be given the opportunity for reassessment of that stage.

Any candidate who has failed their graded unit or wishes to upgrade their award must be given a re-assessment opportunity, or in exceptional circumstances, two re-assessment opportunities. In the case of project-based graded units, this must be done using a substantially different project.

The final grading given must reflect the quality of the candidate's evidence at the time of the completion of the graded unit. Candidates must be awarded the highest grade achieved — whether through first submission or through any re-assessment, remediation, and/or reasonable assistance provided.

## **Higher National Graded Unit specification: instructions for designing the assessment task and assessing candidates (cont)**

### **Instructions for designing the assessment task**

The assessment task is a project. The project undertaken by the candidate must be a complex task which involves:

- ◆ variables which are complex or unfamiliar
- ◆ relationships which need to be clarified
- ◆ a context which may be familiar or unfamiliar to the candidate

The assessment task must require the candidate to:

- ◆ analyse the task and decide on a course of action for undertaking the project
- ◆ plan and organise work and carry it through to completion
- ◆ reflect on what has been done and draw conclusions for the future
- ◆ produce evidence of meeting the aims which this Graded Unit has been designed to cover

The project must involve a practical assignment culminating in completion of the dental prescription which allows candidate to integrate the skills and knowledge gained in the HN units of the Award of HND Dental Technology. This assessment instrument is not concerned exclusively with practical activity — candidates must be provided with a dental prescription that allows them to prepare, plan, demonstrate practical skills and evaluate the Outcome. The candidate will be asked to:

- ◆ develop a logical analytical approach in response to dental prescriptions requiring the production of dental appliances in one specialism
- ◆ carry out all preparation for the dental appliances
- ◆ manufacture the dental appliances to the given prescription
- ◆ record development work in a log book
- ◆ evaluate the planning and processes and resulting dental appliances

## Higher National Graded Unit Specification: Instructions for designing the assessment task and assessing candidates (cont)

The dental prescriptions for this practical assignment should reflect the option specialism chosen by the candidate, within the award of HND Dental Technology. This brief should be sufficiently detailed to allow the candidate to work out solutions independently.

The practical assignment and the way it is planned should reflect opportunities for the candidate to demonstrate an ability to work independently to plan and carry out the production of dental appliances to prescription. In the course of planning the candidate will utilise knowledge gained from other Units within the program. They should produce adequate quality checklists that will guide the production process and aid their reflection during the evaluation stage of the project. A mentoring system as described in the *conditions of assessment* above, would help the candidate to carrying out appropriate preparation for the development of the dental prescription.

### Guidance on grading candidates

Candidates who meet the minimum Evidence Requirements will have their achievement graded as C — competent, or A — highly competent or B somewhere between A and C. The grade related criteria to be used to judge candidate performance for this Graded Unit is specified in the following table.

Grade A	Grade C
<p>Is a seamless, coherent piece of work which:</p> <ul style="list-style-type: none"> <li>◆ has documented evidence for the three essential phases of the project, in a logbook which is produced to a high standard and which relates all aspects of the project</li> <li>◆ demonstrates an accurate and insightful interpretation of the project’s dental prescription</li> <li>◆ displays a high level of competence in hands-on execution of practical task</li> <li>◆ dental appliances produced are to a clinically and aesthetic high standard</li> <li>◆ effectively consolidates and integrates required knowledge, and skills</li> <li>◆ demonstrates well structured planning, control and sequencing of activities throughout the project</li> <li>◆ shows initiative in investigating potential Health and Safety issues during laboratory procedures</li> <li>◆ demonstrates logical problem solving skills of a high order in producing the practical appliances</li> <li>◆ the candidate manages the process independently demonstrating good time management skills</li> </ul>	<p>Is a co-ordinated piece of work which:</p> <ul style="list-style-type: none"> <li>◆ has documented evidence of the three essential phases of the project</li> <li>◆ demonstrates an interpretation of the project’s dental prescription</li> <li>◆ displays a level of competence in hands-on execution of practical tasks</li> <li>◆ dental appliances produced are to a clinical standard</li> <li>◆ consolidates and integrates knowledge and skills</li> <li>◆ demonstrates planning and sequencing of project activities</li> <li>◆ complies with Health and Safety requirements during laboratory procedures</li> <li>◆ demonstrates problem solving skills</li> <li>◆ the candidate seeks additional tutor support to keep project on track</li> </ul>

## Higher National Graded Unit Specification: Instructions for designing the assessment task and assessing candidates (cont)

The project will be marked out of 100. Assessors will mark each stage of the project, taking into account the criteria outlined. The marks will then be aggregated to arrive at an overall mark for the project. Assessors will then assign an overall grade to the candidate for this Graded Unit based on the following grade boundaries.

- A = 70% — 100%
- B = 60% — 69%
- C = 50% — 59%

**Note:** the candidate must achieve all of the minimum evidence specified below for each stage of the project in order to achieve the Graded Unit.

### Evidence Requirements

The project consists of three stages: planning; developing; and evaluating. The following table specifies the minimum evidence required to pass each stage.

**Note:** The candidate must achieve **all of the minimum evidence** specified below for each stage of the project in order to pass the Graded Unit.

Project stage	Minimum Evidence Requirements
Stage 1 — Planning 20%	<p>The candidate must produce a production plan that details the manufacturing stages in constructing the dental appliances. This plan must contain evidence of:</p> <ul style="list-style-type: none"> <li>◆ analysis of the dental prescription, identifying the stages involved in the production process</li> <li>◆ identification and assessment of the materials required at each stage of production</li> <li>◆ justification for the approach taken in the plan</li> </ul> <p><i>The candidate must achieve all of the minimum evidence specified above in order to pass the Planning stage. Candidates should achieve 50% of the allocated marks to pass.</i></p>

## Higher National Graded Unit Specification: Instructions for designing the assessment task and assessing candidates (cont)

Project stage	Minimum Evidence Requirements
Stage 2 — Developing 60%	<p>The development stage of the practical assignment involves the candidate in the production of dental appliances for a patient within the chosen specialism to a given prescription. For the product, the candidate must:</p> <ul style="list-style-type: none"> <li>◆ use appropriate materials and resources to produce the dental appliances within the chosen specialism.</li> <li>◆ use logical, analytical skills to find solutions to the practical tasks.</li> <li>◆ carry out the production stages to produce the dental appliances to a clinically acceptable standard within standard laboratory timescales. A clinically acceptable standard means fit for use, within the timescale indicated on the dental prescription.</li> <li>◆ use safe working practice during laboratory procedures.</li> <li>◆ demonstrate organisational and time management skill.</li> </ul> <p>A record of the process underpinning the activity, should be contained in a log book which should consist of the following:</p> <ul style="list-style-type: none"> <li>◆ the production process and any amendments</li> <li>◆ documentation of the process and organisation</li> <li>◆ mentoring feedback</li> </ul> <p><i>The candidate must achieve all of the minimum evidence specified above in order to pass the Developing stage. Candidates should achieve 50% of the allocated marks to pass.</i></p>
Stage 3 — Evaluating 20%	<p>The evaluation stage must consist of an evaluation report and a presentation.</p> <p>The Evaluation report must:</p> <ul style="list-style-type: none"> <li>◆ outline the assignment</li> <li>◆ review and where appropriate update the action plan in the light of experience</li> <li>◆ identify of the knowledge and skills which have been gained and/or developed during the process</li> <li>◆ assess the strengths and weaknesses of the output of the practical assignment</li> <li>◆ review how the assignment met the original dental prescription</li> </ul> <p><i>The candidate must achieve all of the minimum evidence specified above in order to pass the Evaluating stage. Candidates should achieve 50% of the allocated marks to pass the Evaluating stage.</i></p>



## Higher National Graded Unit specification: Instructions for designing the assessment task and assessing candidates (cont)

### Support Notes

It is envisaged that this Graded Unit would be started approximately half way through the candidate's studies with an increasing amount of time being spent towards the end of the course. It should not be seen as a repeat of previous Unit assessments. It is not intended that any new knowledge or skills are taught during delivery of the Graded Unit instead the lecturer's time will be spent discussing individual candidate work.

Time management is an important aspect of planning, developing and evaluating a practical activity and in order to help candidates manage their time effectively, lecturers should consider setting up individual progress reviews with candidates at the start of the Unit delivery time. Lecturers may consider developing a centre pro forma to record their discussions with candidates. These discussions or mentoring activities are an essential part of the Graded Unit and should help ensure that candidates keep to timelines and should be included in their logbook. The Grade finally achieved by the candidate depends on the work submitted. It is therefore very important that staff do not give undue assistance to candidates. The level of assistance should be fully discussed at course team level and any assistance given should be logged in the candidate's mentoring records.

The amount of time spent planning the project at this stage is seen as critical to the development of skills that are genuinely transferable in the profession of dental technology. Part of the planning will require the candidates to negotiate use of laboratory equipment and facilities and co-operating with others in the class group. It is essential that all delivery takes place within the dental laboratory setting and therefore, lecturers should try to ensure a flexible approach towards ensuring laboratory facilities are available for candidates. Access to computers is likely to be required for, word processing, working with visuals and possibly for research.

Opportunities to develop the Core Skill of *Problem Solving* at SCQF level 6 may be present throughout the planning, developing and evaluating stages of this Unit.

The Core Skill of *Communications* at SCQF level 6 is signposted. If candidates show written evidence of research within their logbooks, they will be able to develop their writing skills. Candidates will also be required to present information to show evidence of meeting the candidate brief. This could include information researched on the Internet such as researching health and safety and costs. In preparing this work candidates will show evidence of using their IT skills, in researching information using the Internet, in using word processing skills or in using presentation software. The Core Skill of *Numeracy* at SCQF level 6 is also signposted. If candidates calculate the amount of materials required along with the cost implications, they will develop their numeracy skills.

The Core Skill of *Working with Others* at SCQF level 6 is also signposted. If candidates work with colleagues in a laboratory environment, agreeing times and opportunities for using laboratory equipment in a co-operative manner, they will develop their skills in working with others.

### Equality and inclusion

This graded unit specification has been designed to ensure that there are no unnecessary barriers to learning or assessment. For information on these, please refer to the SQA document *Guidance on Assessment Arrangements for Equality and inclusion*, which is available on SQA's website: [www.sqa.org.uk](http://www.sqa.org.uk).

## General Information for candidates

The purpose of this Graded Unit is to bring together many of the different skills you have learnt throughout your course. You should have completed the mandatory dental units and have studied or be in the process of studying from one of the following three groups of Units.

### Mandatory Dental Units

- ◆ F43K 35 — *Dental Fixed Prosthodontics: Bridgework*
- ◆ F3G8 35 — *Dental Removable Prosthodontics: Complex Complete Dentures*
- ◆ F43P 35 — *Dental Orthodontics: Complex Removable Appliances*

### Fixed Prosthodontics — Option Units

- ◆ F43M 34 — *Dental Fixed Prosthodontics: Precision Attachments*
- ◆ F43N 35 — *Dental Fixed Prosthodontics: Veneers and Inlays*
- ◆ F43L 35 — *Dental Fixed Prosthodontics: Implants*

### Removable Prosthodontics — Option Units

- ◆ F43T 35 — *Dental Removable Prosthodontics: Complex Partial Dentures*
- ◆ F3G9 35 — *Dental Removable Prosthodontics: Implants*
- ◆ F3G7 34 — *Dental Removable Prosthodontics: Over-dentures, Obturators and Precision Attachments*

### Orthodontics — Option Units

- ◆ F42R 35 — *Dental Orthodontics: Fixed Appliance Therapy*
- ◆ F3G6 35 — *Dental Orthodontics: Functional Appliances*
- ◆ F43S 35 — *Dental Orthodontics: Malocclusions*

This Graded Unit also reflects the main aims of the award. These are:

- ◆ to develop planning, analytical, synthesising and problem solving skills within the dental laboratory
- ◆ to effectively develop communication and interpersonal skills with other Dental Care Professionals (DCP's) and when necessary patients
- ◆ to develop professional attitudes and high ethical standards in relation towards patient treatment and the need for continuing professional development
- ◆ enhance employment prospects
- ◆ interpret and implement advanced dental prescriptions
- ◆ use a wide range of complex dental techniques
- ◆ manage laboratory procedures involving the planning integration and application of a variety of skills within a determined time scale
- ◆ organise and utilise specialist dental laboratory equipment
- ◆ utilise a wide range of dental products effectively
- ◆ to develop transferable skills including Core Skills that will allow candidates to function more effectively in the work place
- ◆ to develop study and research skills

## General Information for candidates (cont)

You will be asked to apply some of the skills and knowledge you have learnt during your course to this Graded Unit assignment. You will be asked to demonstrate your practical skills but you will also have to show how you planned your assignment, how you developed your ideas and how you evaluated your product.

For this Graded Unit you will be given dental prescriptions, which require you to plan, develop, provide solutions and evaluate your responses. You will be asked to make dental appliances as part of your project. Throughout the Graded Unit you will meet with your lecturer/s who will advise you and make sure you are on the right track to achieve your Graded Unit within the given timescale.

The project will be out of 100 and you have to pass the minimum Evidence Requirements for each part of the project, planning, development and evaluation, and achieve 50% of the mark allocation for each part of the project in order to pass the Graded Unit. The marks you get for each part of the project will be added up and you will be given a grade for the Graded Unit.

The grade you receive is based on the following:

- A = 70% — 100%
- B = 60% — 69%
- C = 50% — 59%

You will also develop your *Communication* skills through discussions with your lecturer, making a client presentation and writing up your log book. You will develop your *IT* skills and *Numeracy* skills too and you will also develop skills in *Working with Others* and *Problem Solving*.

Throughout the Unit you will meet with your lecturer who will advise you and make sure you are on the right track to achieve your Unit within the given timescale. As part of your assessment you will present your ideas and how you developed your solution and you will present your ideas just as you would to a client.