

Higher National Unit Specification

General information for centres

Unit title: Civil Engineering Contract and Project Management A

Unit code: DW59 34

Unit purpose: This Unit seeks to provide the candidate with knowledge of contractual procedures, forms of contract and legal site requirements.

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

- 1 Explain the roles and purposes of personnel and professional bodies in the construction industry.
- 2 Describe procedures to establish construction contracts and the advantages and disadvantages of common forms of construction contracts.
- 3 Determine construction site requirements.
- 4 Prepare schedules of works for pre-tender and construction phases of works.

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: No specialist prior knowledge or skills are required by candidates for this Unit.

Core Skills: There are opportunities to develop the Core Skills of Communication, Numeracy, IT, and Problem Solving 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: Assessment may be on an individual Outcome basis, or parts may be combined as an integrated assessment. They should be conducted under supervised, controlled conditions. The assessment papers should be composed of an appropriate balance of short answer, restricted response and structured questions. It should be noted that candidates must achieve all the minimum evidence specified for each Outcome in order to pass this Unit.

General information for centres (cont)

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.

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

An exemplar instrument of assessment and marking guidelines has been produced to provide examples of the type of evidence required to demonstrate achievement of the aims of this Unit and to indicate the national standard of achievement at SCQF level 7.

Higher National Unit specification: statement of standards

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Unit code: DW59 34

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.

Throughout the Unit emphasis will be placed where appropriate on the application of Health & Safety and Sustainability. Safe working practises should be looked at in accordance with current safety codes of practise and regulations. Sustainability should include reference to criteria affecting sustainability, impact of not implementing sustainability on the environment and the legislation promoting sustainability.

Outcome 1

Explain the roles and purposes of personnel and professional bodies in the construction industry

Knowledge and/or skills

- ◆ Personnel
- ◆ Professional bodies

Evidence Requirements

In any assessment of this Outcome **all** knowledge and/or skills items should be included. Candidates must provide a satisfactory response to all items.

Candidates will need to provide evidence to demonstrate their knowledge and/or skills by showing that, in relation to personnel and professional bodies in the construction industry, they can:

- ◆ explain the roles and purposes of personnel during both pre-tender and construction phases
- ◆ explain the roles and purposes of professional bodies during both pre-tender and construction phases

Assessment guidelines

The assessment instrument should be designed to take approximately 15 to 20 minutes to complete.

Assessment should be undertaken under closed-book conditions.

Higher National Unit specification: statement of standards (cont)

Unit title: Civil Engineering Contract and Project Management A

Outcome 2

Describe procedures to establish construction contracts and the advantages and disadvantages of common forms of construction contracts

Knowledge and/or skills

- ◆ Procedures for establishing construction contracts
- ◆ Common forms of contract

Evidence Requirements

In any assessment of this Outcome **all** knowledge and/or skills items should be included. Candidates must provide a satisfactory response to all items.

Candidates will need to provide evidence to demonstrate their knowledge and/or skills by showing that, in relation to construction contracts, they can:

- ◆ explain the procedures required to establish a construction contract
- ◆ explain the basis of and advantages and disadvantages of common forms of construction contract, including the allocation of risk between the various parties, and the reasons for that allocation of risk

Assessment guidelines

The assessment instrument should be designed to take approximately 35 to 50 minutes to complete.

Assessment should be undertaken under open-book conditions.

Outcome 3

Determine construction site requirements

Knowledge and/or skills

- ◆ Construction site requirements relating to staff, operatives, plant, machinery, and materials
- ◆ Construction site legislation

Evidence Requirements

Candidates will need to provide evidence to demonstrate their knowledge and/or skills by showing that, in relation to construction site and legal requirements, they can:

- ◆ explain construction site requirements in a civil engineering project

Evidence for the knowledge and/or skills for this Outcome will be provided on a sample basis. In any assessment of this Outcome, a minimum of **one out of two** knowledge and/or skills items should be sampled, including calculation of interim payments.

Higher National Unit specification: statement of standards (cont)

Unit title: Civil Engineering Contract and Project Management A

Assessment guidelines

The assessment instrument should be designed to take approximately 35 to 50 minutes to complete.

Assessment should be undertaken under open-book conditions.

Outcome 4

Prepare schedules of works for pre-tender and construction phases of works

Knowledge and/or skills

- ◆ Pre-tender schedules
- ◆ Construction phase schedules
- ◆ Resource schedules

Evidence Requirements

Candidates will need to provide evidence to demonstrate their knowledge and/or skills by showing that, in relation to schedules for construction works, they can:

- ◆ prepare schedules of works for pre-tender and construction phases

Evidence for the knowledge and/or skills for this Outcome will be provided on a sample basis. In any assessment of this Outcome, a minimum of **two out of three** knowledge and/or skills items should be sampled, one of which should be the resource schedule. Candidates must provide a satisfactory response to both items.

Assessment guidelines

The assessment instrument should be designed to take approximately 35 to 50 minutes to complete.

Assessment should be undertaken under open-book conditions.

Administrative Information

Unit code:	DW59 34
Unit title:	Civil Engineering Contract and Project Management A
Superclass category:	TL
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Higher National Unit specification: support notes

Unit title: Civil Engineering Contract and Project Management A

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

This Unit provides the candidate with the knowledge and skills for the site management of common civil engineering projects.

Recommended time allocation to each Outcome is given as guidance towards the depth of treatment which might be applied to each topic. This guidance has been used in the design of the assessment exemplar material provided with the Unit.

1 Roles and purposes of personnel and professional bodies in the construction industry (6 hours)

Personnel: consultant; structural engineer; geotechnical engineer; resident engineer; clerk of works; site agent; project manager; general foreman.

Professional bodies: ICE; I Struct E; ACE; FCEC; SPOA.

2 Procedures to establish construction contracts and common forms of construction contracts. (11 hours)

Procedures: parties to contracts – client; consultant; contractor; quantity surveyor; sub-consultant; domestic sub-contractor; nominated sub-contractor; relationships between parties to contracts; requirements for a legally binding contract.

Forms of contract: traditional; design and build; turnkey; target price; management contracting; partnering; PFI; PPP; DBFO; DBOO; DBOT; term maintenance contracts.

3 Construction site requirements and legal requirements in respect of staff, operatives, plant, machinery, materials and site requirements for power (12 hours)

Site requirements: health and safety; welfare; supervision and control; security; plant working room; plant and material storage; access facilities (eg access plant, scaffolding, access tower); staff and operative qualifications.

Legal requirements: EU directives and national legislation relating to construction site operation, including health safety welfare and environmental requirements; role of regulatory bodies.

Power requirements: permanent & temporary; electricity; compressed air; gas.

Higher National Unit specification: support notes (cont)

Unit title: Civil Engineering Contract and Project Management A

4 Schedules of works for pre-tender and construction phases (11 hours)

Techniques: network precedence diagram; network arrow diagram; bar chart; linked bar chart; resource histogram.

Guidance on the delivery and assessment of this Unit

This Unit should be delivered in the first year of a two-year programme, and before the Civil Engineering Project Management Unit.

It is recommended that evidence for learning Outcomes is achieved through well-planned course work, assignments and projects. Assessment may be formative and summative and both may feature as part of the process. Although assessments must be focused on the individual achievement of each candidate, group work and role-play activities may contribute to the assessment. Integrative assignments and project work will help to link this Unit with other related Units.

The volume of evidence required for each assessment should take into account the overall number of assessments being contemplated within this Unit and the design of the overall teaching programme.

In designing the assessment instruments, opportunities should be taken to generate appropriate evidence to contribute to the assessment of Core Skills Units.

Where available, evidence from the workplace can also be incorporated to enhance the learning Outcomes, provided that this evidence is appropriate and authenticated as the students own work.

Opportunities for developing Core Skills

Opportunities for the development of Core Skills at the output level are more fully identified in the 'Core Skills Sign Posting Guide'. The grid below is indicative of the opportunities for Core Skills development within this Unit.

Higher National Unit specification: support notes (cont)

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Core Skill	Outcome 1	Outcome 2	Outcome 3	Outcome 4
1 Communication				
Reading	✓	✓		
Writing	✓	✓	✓	
Oral				
2 Numeracy				
Using Number				✓
Using Graphical Information				✓
3 IT				
Using Information Technology				✓
4 Problem Solving				
Critical Thinking	✓	✓		✓
Planning and Organising	✓		✓	✓
Reviewing and Evaluating		✓		✓
5 Working with Others				

Open learning

Where appropriate materials exist, this Unit could be delivered by distance learning, which may incorporate some degree of online support. However, with regard to assessment, planning would be required by the centre concerned to ensure the sufficiency and authenticity of candidate evidence. Arrangements would need to be put in place to ensure that assessments were conducted under controlled, supervised conditions.

Candidates with additional support needs

This Unit specification is intended to ensure that there are no artificial barriers to learning or assessment. 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. For information on these, please refer to the SQA document *Guidance on Alternative Assessment Arrangements for Candidates with Disabilities and/or Additional Support Needs*, which is available on SQA's website: www.sqa.org.uk.

General information for candidates

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On completion of the Unit you should be able to:

- 1 Explain the roles and purposes of personnel and professional bodies in the construction industry.
- 2 Describe procedures to establish construction contracts and the advantages and disadvantages of common forms of construction contracts.
- 3 Determine construction site requirements and legal requirements in respect of staff, operatives, plant, machinery, materials and site requirements for power.
- 4 Prepare schedules of works for pre-tender and construction phases of works.

Evidence that you can satisfy the knowledge and skill elements of this Unit will be obtained by assessment in controlled, supervised conditions.