

SQA Advanced Unit Specification

General information for centres

Unit title: Construction Planning

Unit code: HR40 48

Unit purpose: This Unit is designed to provide the candidate with basic construction planning and programming skills.

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

- 1 Prepare project programmes using manual methods.
- 2 Prepare project program using project software.
- 3 Prepare a method statement for a small construction project.

Credit points and level: 1 SQA Credit at SCQF level 8: (8 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.*

Recommended prior knowledge and skills: It is recommended that this Unit is delivered to candidates who have some knowledge of the technologies and procedures in the construction industry.

Core Skills: There are opportunities to develop the Core Skill(s) of Communication, Numeracy, IT, 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: There are three outcomes of which the first will assess the candidate's knowledge and understanding of the techniques used to programme construction projects. Outcome 2 will develop and build on what has been achieved in the first Outcome and utilise project management software to prepare programmes and schedules, while Outcome 3 will be assessed by preparation of a method statement for a "small" construction project.

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It is possible to assess candidates either on an individual Outcome basis, combinations of outcomes or by a single holistic assessment combining all Outcomes. The assessment paper/s should be composed of an appropriate balance of short answer, restricted response and structured questions. Assessment should be conducted under supervised controlled conditions. A single assessment covering all outcomes should not exceed three hours in duration. It should be noted that candidates must achieve all the minimum evidence specified for each Outcome in order to pass this Unit.

An exemplar instrument of assessment and marking guidelines have been produced to provide an example 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 8.

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.

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SQA Advanced Unit specification: statement of standards

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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.

Throughout the Unit emphasis will be placed where appropriate on the application of Health & Safety and sustainability. Safe working practices should be looked at in accordance with current safety codes of practice 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

Prepare a project programmes using manual methods.

Knowledge and/or skills

- ◆ the need for planning in the construction industry
- ◆ major factors in construction planning
- ◆ planning methods — bar charts, arrow and precedence diagrams , application of logic, construction and analysis of networks, scheduling, project durations, critical path, float and activity dates, resource allocations, updating and monitoring

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 they can:

- ◆ produce networks in either arrow or precedence format
- ◆ time analyse networks and advise project duration
- ◆ identify critical activities, the critical path and float times
- ◆ draw bar charts from the networks

Assessment guidelines

Evidence should be generated through assessment undertaken in controlled, supervised conditions. Assessment should be conducted under open book conditions and as such candidates should be allowed to bring textbooks, handouts or notes to the assessment.

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Evidence might be derived from analysis of a case study involving a set of project drawings from which the candidate is required to produce and analyse a network; or a project analysis providing duration and activity relationships and requiring analysis of resource allocations.

Outcome 2

Prepare a project program using project software.

Knowledge and/or skills

- ◆ alternative project planning and management software packages
- ◆ use of software tools for construction project planning and management

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 they can:

- ◆ select an appropriate software package
- ◆ produce networks in either arrow or precedence format
- ◆ time analyse networks and advice project duration
- ◆ identify critical activities, the critical path and float times
- ◆ draw bar charts from the networks

Assessment guidelines

Evidence might be derived from analysis of a case study involving a set of project drawings from which the candidate is required to produce and analyse a network; or a project analysis providing duration and activity relationships and requiring analysis of resource allocations.

Outcome 3

Prepare a method statement for a small construction project.

Knowledge and/or skills

- ◆ relationship between the estimate, programme and method statement
- ◆ comparison of alternative methods of construction

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 they can produce a method statement for a given situation.

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Assessment guidelines

Evidence should be generated through assessment undertaken in controlled, supervised conditions. Assessment should be conducted under closed book conditions and as such candidates should not be allowed to bring textbooks, handouts or notes to the assessment.

Evidence might be derived from analysis of a case study involving a set of project drawings from which the candidate is required to produce and analyse a network, or a project analysis providing duration and activity relationships and requiring analysis of resource allocations.

A method statement might be required for a major element of a project, or derived from suitable case-study material.

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Administrative information

Unit code:	HR40 48
Unit title:	Construction Planning
Superclass category:	TF
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SQA Advanced Unit specification: support notes

Unit title: Construction Planning

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 has been prepared to provide an understanding of (some of) the principles of construction planning:

- 1 Prepare project programmes using manual methods.
- 2 Prepare project program using project software.
- 3 Prepare a method statement for a small construction project.

This Unit, at SCQF level 8, is a mandatory Unit within the SQA Advanced Diploma in Construction Management.

In designing this Unit, the writers have identified the range of support information requiring to be delivered; the notional times for each outcome have also been identified.

Outcome 1

Prepare a programme manually (14 hours)

- ◆ The need for planning in the construction industry.
- ◆ Pre-contract, contract and post-contract phases. Need to effectively integrate activities and resource requirements. Communication with project team. Constraints. Project control.
- ◆ Major factors in construction planning.
- ◆ Logical activity progression. Identification of resource requirements. Effective scheduling of human, material, equipment and financial resources. Progress monitoring.
- ◆ Planning methods — bar charts, arrow and precedence diagrams, application of logic, construction and analysis of networks, scheduling, project durations, critical path, float and activity dates, resource allocations, updating and monitoring.

Outcome 2

Prepare a programme using project management software (13 hours)

- ◆ Types of project planning and management software. Preparation of bar charts, arrow and precedence diagrams, application of logic, construction and analysis of networks, scheduling, project durations, critical path, float and activity dates, resource allocations, updating and monitoring.

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Outcome 3

Prepare a method statement (13 hours)

- ◆ Relationship between estimate, programme and method statement.
- ◆ Format of method statement, Planning Supervisor
- ◆ Health and Safety factors, alternative methods of construction.
- ◆ Labour, plant, materials and financial considerations.

Guidance on the delivery and assessment of this Unit

It is recommended that this Unit is delivered in the second half of an SQA Advanced Certificate/Diploma programme. Prior knowledge and competence of the Construction Technology Units is essential. The content of this Unit relates closely to other Units in the Built Environment award/s and delivery/assessment might be beneficially integrated with that of other 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 candidate's own work. Group work may contribute to the assessment. However, planning would be required by the centre to ensure the sufficiency and authenticity of candidate evidence. Arrangements would be required to be put in place to ensure that assessment/s were conducted under controlled supervised conditions. 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.

Opportunities for developing Core Skills

The following grid provides a general guide to opportunities for the development of Core Skills in this Unit. Opportunities for the development of Core Skills at the output level are more fully identified in the Core Skills Signposting Guide.

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

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Open learning

Given that appropriate materials exist this unit could be delivered by distance learning, which may incorporate some degree of on-line 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 be required to be put in place to ensure that assessments were conducted under controlled, supervised conditions.

Equality and inclusion

This Unit specification has been designed to ensure that there are no unnecessary barriers to learning or assessment. The individual needs of learners should be taken into account when planning learning experiences, selecting assessment methods or considering alternative evidence.

Further advice can be found on our website www.sqa.org.uk/assessmentarrangements.

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

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- 3 Prepare a method statement for a small construction project.

Assessment will be all open-book, case-study work.