



National Unit Specification: general information

UNIT Technical Recording and Reporting in the Construction Industry
(SCQF level 6)

CODE F3JV 12

SUMMARY

This Unit is suitable for candidates who have limited or no experience in civil engineering and the built environment and seek skills in sketching explanatory construction details, in techniques for taking and recording simple measurements and in reviewing progress of construction activities. Successful candidates will recognise the benefits of effective technical communication.

OUTCOMES

- 1 Demonstrate knowledge and understanding of technical details by sketches.
- 2 Demonstrate knowledge and understanding of measuring, recording and calculating quantities.
- 3 Predict construction progress using charts.
- 4 Explain benefits of effective technical communications in construction.

RECOMMENDED ENTRY

While entry is at the discretion of the centre, candidates would normally be expected to have attained one of the following, or equivalent:

- ◆ Standard Grade English at General level

CREDIT VALUE

1 credit at Higher (6 SCQF credit points at SCQF level 6*).

**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.*

Administrative Information

Superclass: TE

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CORE SKILLS

There is no automatic certification of Core Skills or Core Skill components in this Unit. Opportunities for developing aspects of Core Skills are highlighted in *Guidance on Learning and Teaching Approaches*.

National Unit Specification: statement of standards

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Acceptable performance in this Unit will be the satisfactory achievement of the standards set out in this part of the Unit Specification. All sections of the statement of standards are mandatory and cannot be altered without reference to SQA.

OUTCOME 1

Demonstrate knowledge and understanding of technical details by sketches.

Performance Criteria

- (a) Sketch technical construction details in plan view.
- (b) Sketch technical construction details in elevation view.
- (c) Sketch technical construction details in cross section.

OUTCOME 2

Demonstrate knowledge and understanding of measuring, recording and calculating quantities.

Performance Criteria

- (a) Accurately measure a given item of work.
- (b) Accurately record measurements for use by others.
- (c) Calculate quantities using recorded measurements.

OUTCOME 3

Predict construction progress using charts.

Performance Criteria

- (a) Record actual progress on a planned progress chart.
- (b) Predict future construction progress from recorded and completed progress.
- (c) Estimate delay or early completion from progress chart.

OUTCOME 4

Explain benefits of effective technical communications in construction.

Performance Criteria

- (a) Explain the importance of drawings issued on site.
- (b) Explain the advantages of regular site meetings.
- (c) Describe the routes for communicating changes to the works.

National Unit Specification: statement of standards (cont)

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EVIDENCE REQUIREMENTS FOR THIS UNIT

Evidence is required to demonstrate that the candidates have achieved all Outcomes and Performance Criteria.

Written and/or recorded oral evidence is required to demonstrate that the candidate has achieved this Unit to the standard specified in the Outcomes and Performance Criteria. The evidence for this Unit should be obtained under controlled, supervised conditions. The assessment will be closed-book and should last no more than two hours

In this Unit an appropriate instrument of assessment would be a case study and would be best evidenced following a visit to a construction site or local building of suitable interest. Where this is not possible then candidates can be presented with a construction case study with specific construction details selected by the centre for the assessment.

For Outcome 1 candidates should sketch a minimum of three construction components in plan, elevation and cross section views.

For Outcome 2 candidates will be required to calculate quantities of materials for a given simple structure, for example a concrete tank.

For Outcomes 3 and 4 a closed-book assessment paper relating to a given case study would provide assessment of construction processes and communications.

Evidence will be gathered at appropriate points throughout the delivery of the Unit. Assessments must be manageable and practicable for centres and candidates.

The Assessment Support Pack for this Unit provides appropriate sample assessment materials. Where centres wish to develop their own assessment materials they should refer to the Assessment Support Pack to ensure a comparable standard.

National Unit Specification: support notes

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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 developed as an optional Unit in the National Certificate in Civil Engineering and Built Environment at SCQF level 6 and can also be delivered as a free-standing Unit

This Unit aims to provide candidates with experience of sketching construction components and the knowledge and understanding of measurement, recording and calculating techniques. Candidates should have the opportunity to participate in site visits or use case studies to be introduced to hands on assessment of physical progress on construction contracts and illustrate good and poor communication. Candidates will be given the opportunity to understand the influences of technical communications on financial and quality aspects of construction.

GUIDANCE ON LEARNING AND TEACHING APPROACHES FOR THIS UNIT

A construction site visit and/or case studies, with appropriate details could be used for the teaching on this Unit.

There are active sites where internet access can provide regular updates on construction details if actual site visits are not practicable. Following site visits, construction tasks can be highlighted and detailed in a classroom environment. Programmes from the site can be adapted for assessing progress and predicting future likely progress using simple bar charts and a 'counting the squares' system. Group work using role play and simulation can be used to amplify the importance of the progress recorded. Candidates should also produce short notes on the benefits of drawing registers and correct procedural routes.

Detail of a typical appropriate teaching approach could be:

Outcome 1 — the tutor/lecturer could demonstrate the explanation of construction details from two dimensional plans and photographs. Candidates could then practise this in the classroom environment prior to the site visit where sketches of actual construction details could be completed. Assessment should comprise supervised sketching of three construction components The teaching plan would therefore involve the candidates in practising freehand sketches of construction details.

Outcome 2 — following tutor/lecturer discussion about linear measurement techniques, candidates could carry out in small groups of three, a survey of a building element. Recorded measurements could be used for the calculation of quantities of materials as a classroom exercise. Assessment would involve calculating quantities of materials for a simple structure such as a concrete tank.

Outcome 3 — following study of simple bar charts of basic construction activity sequences and use of elements of work from a site visit or case study, candidates can be introduced to hands on assessment of physical progress on construction contracts. Assessment would comprise a closed-book exercise in calculating.

National Unit Specification: support notes (cont)

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Outcome 4 — candidates should be introduced to a variety of case studies illustrating good and also poor communications, where candidates can understand the influences of technical communications on financial and quality aspects of construction. Case studies could focus on design aspects or construction aspects.

OPPORTUNITIES FOR CORE SKILL DEVELOPMENT

In this Unit candidates will be:

- ◆ calculating and applying complex data
- ◆ interpreting, calculating and presenting numerical and graphic data in civil engineering and building situations
- ◆ effectively communicating construction work

These offer opportunities to develop aspects of the Core Skills of:

- ◆ Numeracy

GUIDANCE ON APPROACHES TO ASSESSMENT FOR THIS UNIT

Opportunities for the use of e-assessment

E-assessment may be appropriate for some assessments in this Unit. By e-assessment we mean assessment which is supported by information and communications technology (ICT), such as e-testing or the use of e-portfolios or e-checklists. Centres which wish to use e-assessment must ensure that the national standard is applied to all candidate evidence and that conditions of assessment as specified in the Evidence Requirements are met, regardless of the mode of gathering evidence. Further advice is available in *SQA Guidelines on Online Assessment for Further Education (AA1641, March 2003)*, *SQA Guidelines on e-assessment for Schools (BD2625, June 2005)*.

An assessment duration aggregated to a total of two hours is envisaged for an assessment which should be supervised and closed-book.

For Outcome one the candidate should produce three construction sketch details in plan, section and elevation.

For Outcome two the candidates should measure and record and calculate quantities for one element of work.

For Outcome three candidates should prepare a bar chart of progress of 12 activities from given progress recorded, and estimate future completion and delay/advance etc.

For Outcome four candidates should write short notes on the benefits of using drawing registers, and on correct procedural routes for passing information.

National Unit Specification: support notes (cont)

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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).