Higher National Unit Specification

General information for centres

Unit title: Project Management

Unit code: D76J 35

Unit purpose: This Unit is designed to develop a broad general knowledge and understanding of the theoretical concepts, principles, boundaries and scope of project management. The Unit provides candidates with the underpinning knowledge required for progression in training and education in project management. This Unit should also provide candidates with the broad background knowledge of project management required for working in a project team. The Unit is primarily intended for candidates in the computing sector, however, it may be used for disciplines where projects are undertaken, as required by modern management. The Unit would also be relevant to candidates with appropriate work experience who hold positions such as team leaders or team members.

On completion of the Unit candidates should be able to:

1. Establish organisational and individual factors influencing project development

2. Plan project development work

3. Schedule project development work, using Project Management software, to meet client needs

4. Estimate costs of project development using project management software

Credit value: 1 HN Credit at SCQF level 8: (8 SCQF credit points at SCQF level 8)

SCQF (the Scottish Credit and Qualifications Framework) brings Scottish qualifications into a single framework of 12 levels ranging from SQA Access 1 to doctorates. The SCQF includes degrees; HNC/Ds; SQA National Qualifications; and SVQs. Each SQA Unit is allocated a number of SCQF credit points at a specific level. 1 SCQF point = 10 hours of learning. HN candidates are normally expected to input a further number of hours, matched to the credit value of the Unit, of non-contact time or candidate-led effort to consolidate and reinforce learning.

Recommended prior knowledge and skills: Access to this Unit will be at the discretion of the Centre, however it would be beneficial if the candidate had prior experience of using computer systems. It is recommended that candidates should have some experience of studying computing at Higher National level and that they will already have achieved the HN Unit D75Y 34*: Information Technology: Information Systems and Services.* Candidates should also have an understanding of the application of information technology in business organisations gained either from prior study or through work experience.

Core skills: There may be opportunities to gather evidence towards core skills in this Unit, although there is no automatic certification of core skills or core skills component.

Higher National Unit specification: General information for centres (cont)

Context for delivery: This Unit is included in the framework of HNC Computing, HND Computing: Technical Support and HND Computing: Software Development. It is recommended that it should be taught and assessed within the context of the particular group award to which it contributes.

Wherever possible, aspects of the management of an actual project should be dealt with. This should enable the possibility of cross assessment of the Outcomes with an Integrative Assessment or other project based Units.

Achievement of the Outcomes will require access to a personal computer or workstation on an individual basis. Current version of commercially available software should be used.

Concepts and terminology should be presented in context throughout the Unit.

Assessment: The Unit may be assessed by two short written assessments for Outcome 1 and one for Outcome 2. Outcome 3 and Outcome 4 will be assessed by issuing the candidate with user requirements details for the development of a project, and the candidate will prepare a schedule of development work for that project, meeting the user's needs and the evidence requirements for these Outcomes. The resulting printouts should be representative of the evidence that would be presented to management decision makers in a real life situation.

The two written assessments for Outcome 1 and Outcome 2 will be open book.

An Assessment Exemplar has been produced to indicate the national standard of achievement required at SCQF level 8.

Higher National Unit specification: statement of standards

Unit title: Project Management

Unit code: D76J 35

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

Where evidence for an Outcome 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.

Outcome 1

Establish organisational and individual factors influencing project development

Knowledge and/or skills

- Influences of different types of management structures on project development, eg function oriented, project oriented, matrix
- Influences of different types of team structures on project development, eg Chief Programmer Team, Ego-less programming
- Factors influencing the productivity of the project team, eg motivation, group dynamics, non-performance, job satisfaction, environmental conditions, project constraints, resource issues
- The effects of the above on communication within the team

Evidence requirements

The candidate will be required to demonstrate his/her knowledge and/or skills by showing that s/he can:

- Describe different management structures and their influence on project development
- Describe different team structures and their influence on project development
- Describe three factors affecting the productivity of the project team, and their influence, selected from the seven shown in knowledge and skills, ie motivation, group dynamics, non-performance, job satisfaction, environmental conditions, project constraints, resource issues
- Evaluate the influence of the above factors on communication within the project team

Annotated diagrams should be used to support the responses where appropriate.

Evidence for the above will be gathered from candidates in the form of written reports.

The written evidence for each of the items listed above should be completed in a minimum of 400 words and a maximum of 600 words.

This assessment will be open book.

The assessment will take the form of a report prepared and submitted by teams of candidates and assessed collectively for each team. Each team's report should cover all of the above topics. Thereby, the candidates will gain experience of team work by completing this assessment in small groups.

Higher National Unit specification: statement of standards (cont)

For example, since there are three main topics in the knowledge and skills section, the tutor may consider organising the candidates into teams/groups of three.

The groups could be issued with a Project Requirements Scenario from a company requiring the establishment of a Project Development team to undertake a specified project. The task of each team of candidates will be to prepare a report for management recommending a suitable structure and make-up of the project team, with references to any problems that may be encountered.

The specific details for the Project Requirements Scenario should be chosen according to the candidates' vocational skills' area.

Each group should then appoint a team leader, and by negotiation, each group will allocate one of the above topics, ie management structures, team structures or factors influencing individuals, to each of the team members who then research the topic and prepare a suitable written response. The response from each individual team member should be a minimum of 400 words up to a maximum 600 words in length. When each team member has completed his/her task, the team leader should recall the team and each member should brief the other members on information gathered. Under the guidance of the Team Leader, the team will finally prepare a short report recommending the most appropriate management structure and team structure for the organisation. This should also include references to at least three factors which may influence the individual team members, with recommendations as to how they may be controlled. References should also be made to the impact which the different structures and factors may have on team communications, recommending contingency plans to avoid any communications difficulties. This final team recommendation should be a minimum of 400 words in length and a maximum of 600 words.

Evidence for this assessment will be one copy of the completed report from each team.

It is recommended that centres take the opportunity to encourage candidates to work together in teams to consider these factors influencing project development work.

Outcome 2

Plan project development work

Knowledge and/or skills

- Establishing the subtasks of project development
- Determine the duration of each sub-task
- Establishing, and describing the purpose of, project milestones
- Determining the deliverables associated with project milestones
- Establishing task dependencies
- Determining the resources required for a given project, both human and physical

Higher National Unit specification: statement of standards (cont)

Evidence requirements

In order to achieve this Outcome the candidate will be required to demonstrate his/her knowledge and/or skills by showing that s/he can prepare written documentary evidence providing answers to the above points as listed in the knowledge and skills section. The details should include the following information: start and finish dates, work hours and times, staff, resources, national and local holidays, pay rates, resource costs.

The assessment will be open book.

Assessment guidelines

The assessment should consist of a written exercise in the format detailed within the Evidence Requirements above.

Each stage should contain a minimum of four sub-tasks.

The candidate should continue to use the Project Requirements Scenario issued for Outcome 1, detailing the need for a project to be undertaken. A further supplement should be issued to the candidate with more specific details of project requirements. A sample supplementary sheet has been prepared and is available with Assessment Exemplar for this Unit.

The written evidence may take the form of short responses referencing each of the above points. Each response to be of approximately 50 to 150 words.

As suggested in the Assessment Exemplar, a pro-forma may be used by the candidate to document the responses.

Outcome 3

Schedule project development work using project management software, to meet client needs

Knowledge and/or skills

- Initiating a project schedule
- Entering project stages, sub-tasks and milestones
- Determining task constraints
- Establishing tasks dependencies
- Creating a pool of resources
- Assigning resources to sub-tasks
- Recording physical resources
- Creating base and resource calendars
- Generating meaningful annotated reports

Higher National Unit specification: statement of standards (cont)

Evidence requirements

The candidate will be required to demonstrate his/her knowledge and skills by showing that s/he can use project management software to schedule the development of a given project brief which includes all of the above knowledge and skills topics. Success in this Outcome will be evidenced by the production of appropriate reports as required by the project brief.

The project requirements specification should include the following information: references to start and finish dates, work hours and times, staff, resources, national and local holidays, pay rates, resource costs.

This will be an open book assessment.

Assessment guidelines

The candidate should continue to use the same Project Development Requirements specifications as issued previously. Using the project management software, the candidate should then be required to produce evidence to meet the tasks outlined above.

The candidate should have access to appropriate project management software throughout.

Outcome 4

Estimate costs of project development using project management software

Knowledge and/or skills

- Allocating costs to Human Resources
- Accounting for the fixed costs of physical resources within the project
- Manipulating resources to modify the project schedule to meet clients needs
- Modifying the project schedule to allow for staff sickness, holidays, and turnover
- Generating appropriate, meaningful and annotated project reports

Evidence requirements

The candidate will be required to demonstrate his/her knowledge and skills by showing that s/he can use project management software to develop and modify a prepared project schedule to meet the requirements of a given project brief which includes all of the above knowledge and skills topics. Success in this Outcome will be evidenced by the production of appropriate reports as required by the project brief.

This will be an open book assessment.

Higher National Unit specification: statement of standards (cont)

Assessment guidelines

Using the project schedule as prepared for Outcome 3, the candidate should be supplied with a supplementary list of requirements for modifications to be made to the schedule. The list of modification requirements should include at least one instance of each of the above knowledge and skills topics.

Candidates should have access to appropriate project management software throughout.

Administrative Information

Unit code: D76J 35

Unit title: Project Management

Superclass category: AG

Date of publication: June 2001

Source: SQA

Higher National Unit specification: support notes

Unit title: Project Management

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

Project management plays a large role in the development of a wide range of organisational requirements in, for example, government, construction, engineering, medicine, and especially, in computing and information technology. This Unit is primarily intended to provide candidates with the pre-requisite knowledge and skills required to conduct and manage a project. Candidates should gain skills in the use of project management tools and techniques, including software solutions. As a result, candidates should be encouraged to work with project specifications and use these to learn about the various aspects of project management. Although the Unit is expressed in generic terms, it should be related to a context that is familiar to candidates. If necessary the terminology used in the Unit can be adapted to suit the relevant workplace situation. Candidates should be able to progress to courses in Higher Education that contain significant elements on project management. The whole of this Unit should be centred on the notion of working with others and as such team working should be encouraged throughout.

Outcome 1

Looks at the factors that influence project development and progression. Essentially, it sets the scene within which a project development team must operate. Candidates should become familiar with relevant terminology and should make use of this in describing influencing factors. Candidates should be encouraged to consider the reasons why a particular organisational structure has been chosen and why other forms of structure are less appropriate or unsuitable. Examples of formal organisational structures that could be covered include hierarchical or function oriented, project or task oriented and matrix. Candidates should also be introduced to the human, organisational, managerial and other factors that influence the productivity of the team. Factors such as motivation, group dynamics, job satisfaction, project constraints, etc, should be explored to highlight the nature of, and problems associated with, working on projects. Candidates should also consider the impact of these factors on communication within the team.

Outcome 2

Outcome 2 looks at the requirements for planning project development work. Candidates should learn about the stages and sub-tasks in the development of a project schedule and the techniques used in scheduling tasks and resources. Candidates should learn about the importance of deliverables in meeting project milestones and their function.

Higher National Unit specification: support notes (cont)

Outcome 3

Outcome 3 concerns learning how to use project management software and how to prepare a project development schedule. It includes the range of basic project management software skills as listed in the knowledge and skills section for this Outcome. Candidates should become familiar with these basic concepts and with the methods for entering, editing and manipulating the required data within the project.

Outcome 4

Outcome 4 is an extension of Outcome 3, and is a two-fold task. Using the project schedule developed for Outcome 3, the candidate will be required firstly to record in the project details of the resource costs for both human and physical resources, and secondly to undertake modifications to the project schedule as a result of changes in the organisational and user needs.

This Unit is likely to form part of a group award that is primarily designed to provide candidates with technical or professional knowledge and skills related to project management development. It would be expected, however, that those who successfully complete the group award would progress to work in first line management or team leader posts, or to Higher Education.

Guidance on the delivery and assessment of this Unit

This Unit is likely to be delivered at the beginning of the second year of a full-time HND group award, so that the candidates will use the skills acquired for the planning of the Integrative Assessment. The Unit should be delivered in a way that enables candidates to appreciate its relevance to the occupational area concerned. Wherever possible, links should be drawn with situations which candidates will understand, eg all situations that have a definite start and a definite end are projects, thus their academic year is a project containing many individual projects.

There are four assessments for this Unit. Two written exercises for Outcome 1 and Outcome 2 that should be carried out as open book assessments. Two practical assessments for Outcome 3 and Outcome 4 require the use of project management software to schedule a given project specification.

Vendor qualifications

Centres may wish to teach this Unit in the context of Microsoft Office User Specialist (MOUS) certification. This performance-based certification examination can validate productivity for corporations, academic institutions, staffing agencies, training organisations and individuals alike.

Higher National Unit specification: support notes (cont)

The MOUS program is the only Microsoft approved certification program designed to measure and validate users' skills with the Microsoft Office suite of desktop productivity applications (Microsoft Word, Microsoft Excel, Microsoft PowerPoint®, Microsoft Access, Microsoft Internet Explorer and Microsoft Outlook®). The levels of MOUS certification which may be appropriate to this Unit is as follows:

- Word (Core)
- Excel (Core)
- Access (Core)
- PowerPoint (Core)
- Explorer (Core)
- Outlook (Core)
- Project (Core)

If this Unit were to be taught using the current version of Microsoft Project therefore, candidates should be able to gain the MOUS certifications for Project provided that they go on to take the appropriate MOUS examination.

The Microsoft web site also offers a free downloadable demonstration of their Self Test software.

The MOUS web site at the time of writing is at http://www.mous.net

Open learning

If this Unit is delivered by open or distance learning methods, additional planning and resources may be required for candidate support, assessment and quality assurance.
A combination of new and traditional authentication tools may have to be devised for assessment and re-assessment purposes. For further information and advice, please see *Assessment and Quality Assurance for Open and Distance Learning* (SQA, February 2001 — publication code A1030.

Special needs

This Unit specification is intended to ensure that there are no artificial barriers to learning or assessment. Special needs of individual candidates should be taken into account when planning learning experiences, selecting assessment instruments or considering special alternative Outcomes for Units.

For information on these, please refer to the SQA document *Guidance on Special Assessment and Certification Arrangements for Candidates with Special Needs and Candidates for whom English is an Additional Language (SQA, 2000)*

General information for candidates

Unit title: Project Management

This Unit is designed to prepare you for a supervisory post later in your career but it can also assist you if you already hold such a position. The Unit will also be appropriate if you intend to progress to Higher Education courses that offer Project Management as an element of the course.

In Outcome 1 you will look at the factors that influence project development and progression. Essentially, Outcome 1 sets the scene within which a project development team must operate. You will become familiar with terminology of project management and will consider various managerial and team structures and why particular structures are either suitable or unsuitable. You will also be introduced to the human, organisational, managerial and other factors that influence the productivity of the team. Outcome 1 and Outcome 2 will be assessed by written exercises that will test your knowledge about the factors that influence project development.

In Outcome 2 you will learn about the requirements for planning project development work. You will learn about the stages in the production of a project schedule and the planning techniques used in scheduling tasks and resources. The importance of deliverables in meeting project milestones will be important elements in Outcome 2. This Outcome also introduces you to some of the tools and techniques utilised by project management.

In Outcome 3 you will learn how to use project management software to schedule the stages and tasks of project development.

In Outcome 4 you will learn how to allocate costs to your project and modify the designed schedule to meet amended user's needs. You will learn how to produce required and meaningful project reports.

Overall, you will be expected to use the knowledge and skills from the Unit, which will help you to assess how Project Management can enable an organisation to be as effective as possible.

In order to complete this Unit successfully, you will be required to achieve a satisfactory level of performance in all assessed work.