Higher National Unit specification

General information for centres

Unit title: Planning: Risk, Control and Earned Value Analysis

Unit code: F850 34

Unit purpose: This Unit is designed to provide the underpinning knowledge that a planner requires to monitor and report on a project's performance. On completion of the Unit the candidate should be able to:

1   Use a range of risk assessment tools to assess, analyse, quantify and control risk and opportunity.
2   Use appropriate software to produce, interpret and evaluate productivity reports.
3   Use Earned Value Analysis to evaluate a project.

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: Entry to this Unit is at the discretion of the centre; however it is recommended that candidates have completed, or are in the process of completing, the following Units prior to undertaking this Unit:

FINH 34   *Project Management: An Introduction*
DH21 34   *Working within a Project Team*

Core Skills: There are opportunities to develop the following Core Skills in this Unit, although there is no automatic certification of Core Skills or Core Skills components.

♦ Communication	SCQF level 6
♦ Numeracy	SCQF level 5
♦ Information and Communication Technology	SCQF level 5
♦ Problem Solving	SCQF level 5
♦ Working with Others	SCQF level 5

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.

General information for centres (cont)

Unit title: Planning: Risk, Control and Earned Value Analysis

Assessment: This Unit may be assessed holistically by means of a report(s) on aspects of planning: risk, control and earned value analysis. Candidates are expected to demonstrate that they can apply relevant concepts to situations which they could face as project planners. Candidates are also expected to suggest, justify and evaluate possible courses of action which project planners may take to deal with situations and challenges they may face during each phase of a project. A report(s) could be supplemented by oral questions to ensure all aspects of the Evidence Requirements are fully met. An indicative word count for the report(s) is 1,800 words, not including diagrams or appendices.

Higher National Unit specification: statement of standards

Unit title: Planning: Risk, Control and Earned Value Analysis

Unit code: F850 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.

Outcome 1

Use a range of risk assessment tools to assess, analyse, quantify and control risk and opportunity

Knowledge and/or Skills

♦ Assessment of risk and opportunity
♦ Risk analysis and quantification
♦ Risk control measures

Evidence Requirements

Candidates will need to provide evidence to demonstrate their Knowledge and/or Skills by showing that they can:

♦ apply two risk assessment tools and two analysis and control techniques to a practical situation.

Risk assessment tools must be chosen from:
— Analysing historical records,
— Questionnaires,
— Check lists,
— Brainstorming,
— Flow charts,
— Heuristic methods,
— System and scenario analysis.

Risk analysis and control measures must be chosen from:
— PERT
— Monte Carlo
— Contingency Planning
— Risk categorisation
— HAZOP

Candidates must produce a staged project plan, applying appropriate risk information to each stage. The stages will follow the logical progress of the project and will include objectives and deliverables, assumptions, quantification and qualification of risk, plus cost and budget analysis.

Higher National Unit specification: statement of standards (cont)

Unit title: Planning: Risk, Control and Earned Value Analysis

Assessment Guidelines

A report should be produced and presented as part of an ongoing project or based on a case study. The report should form part of an integrated final report which covers all three Outcomes and should include the elements defined in the Evidence Requirements for Outcome 1. The indicative word count for Outcome 1 is 600 words, not including diagrams or appendices.

Outcome 2

Use appropriate software to produce, interpret and evaluate productivity reports

Knowledge and/or Skills

- ♦ Progression of a plan to phase deadlines
- ♦ The production of phase productivity reports
- ♦ Methods of monitoring projects
- ♦ Reporting mechanisms for phase and project performance

Evidence Requirements

Candidates will need to provide evidence to demonstrate their Knowledge and/or Skills by showing that they can:

- ♦ use a software package to produce a report for the project management team. This will give a clear current position analysis and a future options scenario in the form of a revised plan. The report should contain both graphical and textual information. The report should contain recommendations on how to control the risks that have been identified. Candidates should show appropriate interpretation of the information and its implications to produce evidence for knowledge based decision making.

Candidates must use a suitable project plan in conjunction with end of phase data. Candidates must apply two analysis techniques and two variation control measures in producing the end of phase report. Analysis techniques must be chosen from:

- ♦ Critical path,
- ♦ Logical network optimisation
- ♦ Evaluation and rescheduling

Variation control measures must be chosen from:

- ♦ Scope management
- ♦ Project registers
- ♦ Time
- ♦ Procurement
- ♦ Resource
- ♦ Quality
- ♦ Communication
- ♦ Management systems

Higher National Unit specification: statement of standards (cont)

Unit title: Planning: Risk, Control and Earned Value Analysis

Assessment Guidelines

A report should be produced and presented as part of an ongoing project or based on a case study. It is recommended that the same project or case study is continued from Outcome 1. The report should form part of an integrated final report which covers all three Outcomes and should include the elements defined in the Evidence Requirements for Outcome 2. The indicative word count for Outcome 2 is 600 words, not including diagrams or appendices.

Outcome 3

Use Earned Value Analysis to evaluate a project

Knowledge and/or Skills

♦   Earned Value Analysis (EVA) Techniques
♦   EVA forecast and reporting systems
♦   EVA variances (in terms of time, cost and quality)

Evidence Requirements

Candidates will need to provide evidence to demonstrate their Knowledge and/or Skills by showing that they can:

♦   produce a short report which explains the use of EVA covering time, cost, quality, benefit and thresholds. The report must include a forecast of the EVA on estimated phase completion times and costs. This report must contain the EVA in terms of ongoing overall project variances, monitoring and thresholds of time, cost and quality.

Assessment Guidelines

A report should be produced and presented as part of an ongoing project or based on a case study. It is recommended that the same project or case study is continued from Outcomes 1 and 2. The report should form part of an integrated final report which covers all three Outcomes and should include the elements defined in the Evidence Requirements for Outcome 3. The indicative word count for Outcome 3 is 600 words, including the conclusion for the integrated report, but not including diagrams or appendices.

Administrative Information

Unit code: F850 34

Unit title: Planning: Risk, Control and Earned Value Analysis

Superclass category: AG

Original date of publication: August 2009

Version: 01

History of changes:

Version	Description of change	Date

Source: SQA

Higher National Unit specification: support notes

Unit title: Planning: Risk, Control and Earned Value Analysis

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

The management of risk and its control within a project differs greatly from the management of day-to-day routine and repetitive systems, and plays an increasingly important role in the successful implementation of projects. This Unit is designed to develop progressively the knowledge and skills required to monitor and report on a project's performance. The Unit is intended for project planners working in the private, public, or voluntary sectors. The Unit is designed to provide the project planners with the knowledge and skills to produce and interpret information that will assist project managers make sound decisions.

Outcome 1

This Outcome covers the knowledge and skills required to quantify, analyse and put systems in place to control risks within a project. These form the basis of the guidelines for future reports and decision making processes.

Teaching on the Outcome should include a range of the following techniques in order to provide the required skills level:

- ♦ Risk Assessment could include:
    — Analysing historical record
    — Questionnaires
    — Check lists
    — Brainstorming
    — Flow charts
    — Heuristic methods
    — System and scenario analysis

- ♦ Planning and developing risk based contingencies using various techniques could include:
    — PERT
    — Monte Carlo
    — Contingency Planning
    — Risk categorisation
    — HAZOP

A case study approach is recommended which can allow the candidate to apply the chosen risk assessments and analysis and control techniques to a practical situation.

Higher National Unit specification: support notes (cont)

Unit title: Planning: Risk, Control and Earned Value Analysis

Outcome 2

This Outcome covers the development and production of project planning and control reports that will be used by project managers to inform their decision making at key stages within a project.

Two of the following typical techniques should be used:

♦ Critical path,
♦ Logical network optimisation,
♦ Evaluation and rescheduling.

Candidates should use appropriate variation control measures such as:

♦ Scope management
♦ Project registers
♦ Time
♦ Procurement
♦ Resource
♦ Quality
♦ Communication and management systems

The case study approach used for Outcome 1 should be continued throughout Outcome 2 to enable skills to be applied to a practical situation.

Outcome 3

The purpose of this Outcome is to enable the candidate to establish whether or not a project is producing its deliverables. This information should be used to assess if the project is on track to meet its proposed Earned Value Outcomes.

Candidates should produce a report highlighting the EV plan, methods used to capture data from the work packages that highlight percentage completeness, resources committed and projected versus actual costs. Using a given set of data, candidates should apply this to a known project plan to produce a report that covers all variances. This should contain a discussion on the value and advantages of using an ongoing Earned Value Analysis method to assess a project's performance.

It is possible to use case studies and/or projects from candidates' work place, educational establishment or their personal lives (eg planning a wedding, building a house). These can be supplemented by discussions with the candidate, eg 'what if scenarios' to meet Evidence Requirements. If the organisation already uses a software system this should be adopted for use within this Unit.

This Unit is intended to be delivered as part of the key skills for the PDA Project Technician although it can be delivered as a stand-alone Unit. The Unit is written in generic terms, since the concepts involved are applicable and valid in all contexts of project planning. The terminology should be adapted to suit the relevant workplace situation.

Higher National Unit specification: support notes (cont)

Unit title: Planning: Risk, Control and Earned Value Analysis

To increase the likelihood of success of a project this Unit places an emphasis on the rigour required to ensure the organisational and financial controls are established and used to ensure an informed basis is established for decision making within the project.

Guidance on the delivery and assessment of this Unit

As the candidate could be employed within a current project planning environment or training to enter that role, it is recommended that a suitable project be selected at their place of work which can be used as the basis of development and assessment for all three Outcomes. A live project may offer a more substantive experience for the candidate. Ideally this same project could be used to progress further project management knowledge and skills through the other Units within the PDA. If this is not possible or the project is not suitable for assessment purposes then a simulated or case-study based project can be provided by the Centre. Where a candidate wishes to use a real workplace project, selection should be made in consultation with their line manager, mentor and tutor. Suitability of the project for assessment purposes will be determined by the centre.

Opportunities for developing 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 components.

The general aims of the PDA project technician include developing a range of personal and key skills which will improve ability, confidence and employability. All practical teaching and learning activities of the course provide a context for developing and enhancing all five Core Skills, in particular some of the Core Skills components in; *Information and Communication Technology, Communication, Working with Others* and *Problem Solving.*

Open learning

This Unit is suitable for delivery by open or distance learning methods provided that any necessary additional planning and resources are made available 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.

Disabled Candidates and/or those with 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)**.

General Information for Candidates

Unit title: Planning: Risk, Control and Earned Value Analysis

The purpose of this Unit is to provide you with the underpinning knowledge and skills that a planner needs in order to be able to monitor and report on a project's performance. This will involve learning about the role of risk management and of methods of assessing risk and opportunity, analysing and quantifying risk and recommending appropriate risk control measures. The Unit will also involve learning how to progress project plans to phase deadlines, produce phase productivity reports and report on phase and productivity performance.

Teaching and Learning will use either a case study, or an ongoing project and you will be expected to work on case study or project materials both as part of a team and independently as an individual. If you are going to use an ongoing project as the basis for your assessment in this Unit, the project must be selected in consultation with your tutor. You will work on a series of formative exercises in class including team 'question and answer' sessions, during which you will be expected to contribute to your team's defence of its decisions made on the management of the project planning process.

In Outcome 1 you will study how to apply a range of risk assessment tools to assess, analyse and quantify risk and opportunity. You will be expected to apply risk assessments and risk analyses to a practical situation based on a case study or ongoing project. You will produce your own Risk Register, and a Project Plan, applying the risk information to each step of the Plan. You will recommend risk control measures for the situations you have identified within the Project Plan.

In Outcome 2 you will progress onto using the appropriate software to produce a revised project plan based on the same case study or project as in Outcome 1. You will study how to produce both graphical and textual information and you will develop the skills needed to evaluate and interpret the information. Using the information you will be able to provide specific recommendations on how the project should be managed.

Finally, Outcome 3 will provide you with the knowledge and understanding to explain Earned Value Analysis (EVA) in terms of a range of parameters such as time, cost benefit and thresholds. Using the same case study or project as in the first two Outcomes, you will forecast and report EVA on estimated phase completion times and costs. You will interpret your report in order to determine whether the project is on target to produce its deliverables as planned and you will recommend any action needed to rectify any variances identified in order to ensure project success.