Unit 8: Management of Projects

Unit code: J/601/0302

QCF level: 4

Credit value: 15

Aim

This unit provides an understanding and experience of project management principles, methodologies, tools and techniques that may be used in industry and the public sector.

Unit abstract

Management of projects is a key element to ensure successful scientific investigations related to academic research, company research and development or consultancy.

Through this unit learners will develop an understanding of what constitutes a project and the role of a project manager. They will examine the criteria for the success or failure of a project, evaluate project management systems and review the elements involved in project termination and appraisal.

Learners will also understand the need for structured organisation within the project team, effective control and coordination and good leadership qualities in the project manager. They will be able to analyse and plan the activities needed to carry out a project. This includes how to set up a project, how to control and execute a project, how to cost a project and how to carry out project reviews using a specialist project management software package. Together with factors associated with effecting project change, learners will also appreciate how the project fits into the strategy or business plan of an organisation.

Learning outcomes

On successful completion of this unit a learner will:

1 Understand the principles of project management

2 Be able to plan a project in terms of organisation and people

3 Be able to manage project processes and procedures.

Unit content

1 Understand the principles of project management

Project management: project management and the role of the project manager eg management of change, understanding of project management system elements and their integration, management of multiple projects, project environment and the impact of external influences on projects; identification of the major project phases and why they are required; understanding of the work in each phase; the nature of work in the lifecycles of projects in various industries

Success/failure criteria: the need to meet operational, time and cost criteria; define and measure success eg develop the project scope, product breakdown structure (PBS), work breakdown structure (WBS), project execution strategy and the role of the project team; consideration of investment appraisal eg use of discount cash flow (DCF) and net present value (NPV); benefit analysis and viability of projects; determine success/failure criteria; preparation of project definition report; acceptance tests

Project management systems: procedures and processes; knowledge of project information support (IS) systems; how to integrate human and material resources to achieve successful projects

Terminating the project: audit trails; punch lists; close-out reports

Post-project appraisals: comparison of project outcome with business objectives

2 Be able to plan a project in terms of organisation and people

Organisational structure: functional, project and matrix organisational structures eg consideration of cultural and environmental influences, organisational evolution during the project lifecycle; job descriptions and key roles eg the project sponsor, champion, manager, integrators; other participants eg the project owner, user, supporters, stakeholders

Roles and responsibilities: the need for monitoring and control eg preparation of project plans, planning, scheduling and resourcing techniques

Control and coordination: use of work breakdown structures eg to develop monitoring and control systems, monitoring performance and progress measurement against established targets and plans; project reporting; change control procedures; the importance of cascading; communications briefing; instilling trust and confidence in others

Leadership requirements: stages of team development eg Belbin's team roles, motivation and the need for team building, project leadership styles and attributes; delegation of work and responsibility; techniques for dealing with conflict; negotiation skills; chair meetings

Human resources and requirements: calculation; specification; optimisation of human resource requirements; job descriptions

3 **Be able to manage project processes and procedures**

Project organisation: the product breakdown structure (PBS) and the work breakdown structure (WBS); project execution strategy and the organisation breakdown structure (OBS) eg preparation of organisational charts, task responsibility matrix, statement of work (SOW) for project tasks

Project management plans: the why, what, how, when, where and by whom of project management eg contract terms, document distribution schedules, procurement, establishing the baseline for the project

Scheduling techniques: relationship between schedules, OBS and WBS; bar charts; milestone schedules; network techniques; resourcing techniques; computer-based scheduling and resourcing packages; project progress measurement and reporting techniques; staff-hours, earned value and progress 'S' curves; critical path analysis and reporting; milestone trending

Cost control techniques: cost breakdown structure eg types of project estimate, resource needs, estimating techniques, estimating accuracy, contingency and estimation, bid estimates, whole-life cost estimates, sources of information, cost information sensitivity, computer-based estimating; allocation of budgets to packages of work; committed costs; actual costs; cash flow; contingency management

Performance: cost performance analysis eg budgeted cost for work scheduled (BCWS) budgeted cost for work performed (BCWP); concept of earned value; actual cost of work performed (ACWP); cost performance indicators

Change control procedures: the need for formal control of changes eg project impact of changes, principles of change control and configuration management; changes to scope, specification, cost or schedule; change reviews and authorisation; the formation of project teams; project initiation and start-up procedures

Recommendations: changes in relation to eg scope, specification, cost, improving reliability of outcomes

Learning outcomes and assessment criteria

Learning outcomes On successful completion of this unit a learner will:	Assessment criteria for pass The learner can:
LO1 Understand the principles of project management	1.1 explain the principles of project management 1.2 discuss viability of projects with particular emphasis on the criteria for success/failure 1.3 explore principles behind project management systems and procedures 1.4 explain key elements involved in terminating projects and conducting post-project appraisals
LO2 Be able to plan a project in terms of organisation and people	2.1 plan the most appropriate organisational structure 2.2 discuss roles and responsibilities of participants within a project 2.3 carry out the control and co-ordination of a project 2.4 document project leadership requirements and qualities 2.5 plan specific human resources and requirements for a project
LO3 Be able to manage project processes and procedures	3.1 design the project organisation with reference to prepared project management plans 3.2 use project scheduling and cost control techniques 3.3 report the methods used to measure project performance 3.4 report project change control procedures 3.5 discuss the outcomes of the project and make recommendations.

Guidance

Links to National Occupational Standards, other BTEC units, other BTEC qualifications and other relevant units and qualifications

The learning outcomes associated with this unit are closely linked with:

Level 3	Level 4	Level 5
Unit 17: Project Planning With IT	Unit 7: Research Skills	Unit 4: Project Design, Implementation and Evaluation

Essential requirements

Software packages must be used to demonstrate project control and reporting techniques. Packages might include time and cost scheduling packages, documentation and procurement control packages, spreadsheet packages, graphic presentation packages.

Other packages for items such as risk analysis, project accounting and procurement control could be used to illustrate particular techniques in specific industries.

Access to real project data in electronic spreadsheet form would be an advantage.

Employer engagement and vocational contexts

Learners will benefit from visits to organisations that are engaged in project work as a part of academic research, investigations and research for public bodies, company research and development, or consultancy activities. An ideal context would be for learners to manage a project that is of interest to a particular organisation.