



Unit Title	Production management for water industry construction projects (M/506/1623)	
Level	4	
Credit Value	12	
Learning Outcomes – the learner will be able to:	Assessment Criteria – the learner can:	
1. Understand the principles and application of effective site management	1.1	explain how the principles of site management are applied.
	1.2	justify the application of the principles of site management in terms of good site practice.
2. Understand the importance of effective communication in planning and resource management	2.1	compare communication techniques used on-site and off-site.
	2.2	evaluate the barriers to communication for typical construction projects.
	2.3	evaluate the planning techniques used in the construction and built environment sector.
3. Apply cost forecasting, control and reporting techniques	3.1	evaluate different forms of costing systems .
	3.2	write a report on cash flow, profit, return cost and value and purchasing, using site data and contractors' annual reports.
	3.3	produce cost and value reconciliation statements covering purchasing decisions for individual work sections.
4. Create planning and programming charts for construction projects	4.1	explain why planning is undertaken.
	4.2	explain how progress is measured .
	4.3	explain how remedial action is implemented in the case of a delay in the programme.
	4.4	explain how sub-contractors are incorporated into the overall programme.
	4.5	produce a programme of activities using different planning tools and including key dates for sub-contractors.
	4.6	describe the use of programming tools .
	4.7	describe the use of progress monitoring .
5. Understand how quality issues and environmental considerations are addressed during the production process	5.1	explain, using case studies, how quality is assured on construction sites.
	5.2	evaluate the use of environmental assessments for construction projects.

Additional information about the unit	
Unit purpose and aims	<p>This unit enables learners to understand site management techniques for production in relation to communication, planning, cost control, quality and environmental issues.</p> <p>On completion of the unit the learner will be able to:</p> <ul style="list-style-type: none"> • understand the principles and application of effective site management • understand the importance of effective communication in planning and resource management



	<ul style="list-style-type: none">• apply cost forecasting, control and reporting techniques• create planning and programming charts for construction projects• understand how quality issues and environmental considerations are addressed during the production process.
Unit expiry date	31/03/2019
Assessment requirements or guidance specified by a sector or regulatory body (if appropriate)	<p>In the assessment of this unit, the learner must ensure that the evidence that they produce covers the following:</p> <ol style="list-style-type: none">1. The principles of site management must include:<ol style="list-style-type: none">(a) forecasting(b) planning(c) organising(d) motivating(e) controlling(f) co-ordinating and communicating(g) leadership of teams(h) management of the workforce and sub-contractors(i) site induction and training(j) competence and skill requirements.2. The learner must explain how the application of site management principles and good site practice affect:<ol style="list-style-type: none">(a) contractor-employed sub-contractors(b) specialist sub-contractors(c) nominated sub-contractors(d) named sub-contractors(e) labour-only personnel(f) nominated suppliers and manufacturers(g) prime cost sums.3. The learner must compare the effectiveness of on- and off-site communication techniques, including:<ol style="list-style-type: none">(a) written(b) visual(c) oral(d) use of information technology (IT).4. The learner must evaluate different barriers to communication, in site communications (e.g. site meetings, site diaries), including:<ol style="list-style-type: none">(a) physical(b) psychological(c) intellectual.5. The planning techniques used in the construction and built environment sector must include:<ol style="list-style-type: none">(a) programming and progression(b) sub-contract organisations



- (c) key dates and milestones.
- 6. The learner must evaluate different **costing systems**, including:
 - (a) variance
 - (b) analysis (including unit costing; marginal costing; variable costs; standard costing; absorption costing)
 - (c) break-even analysis (including estimated costs; target costs; actual costs).
- 7. The **report** must cover:
 - (a) site cost control
 - (b) cost forecasting (including cash flow; profit; return; cost; value)
 - (c) liquidity (including borrowing; working capital; profitability).
- 8. The **reconciliation statements** must include:
 - (a) cost and value reconciliation
 - (b) value-time relationships
 - (c) cost-time relationships.
- 9. The **purchasing decisions** for individual work sections must cover:
 - (a) selection of suppliers and goods
 - (b) orders
 - (c) specification
 - (d) quality
 - (e) goods received
 - (f) standards
 - (g) ownership of goods and materials
 - (h) maintenance.
- 10. The learner must explain how progress is **measured** against the following:
 - (a) method statements
 - (b) pre-contract plans
 - (c) pre-tender plans
 - (d) project plans
 - (e) short-term plans
 - (f) long-term plans.
- 11. The **planning tools** must include:
 - (a) bar charts
 - (b) linked bar charts
 - (c) network analysis diagrams
 - (d) precedence diagrams
 - (e) line of balance diagrams
 - (f) time-change diagrams.



	<p>12. The learner's description of the use of programming tools must include:</p> <ul style="list-style-type: none">(a) design of systems(b) production control(c) production co-ordination. <p>13. The learner must explain how progress monitoring is used for:</p> <ul style="list-style-type: none">(a) project management(b) implementation of remedial actions(c) control and co-ordination of sub-contractors. <p>14. The learner must explain how quality is assured in relation to:</p> <ul style="list-style-type: none">(a) material and workmanship samples(b) testing of materials and workmanship (including sub-contract suppliers and manufacturers)(c) supervision of own and sub-contracted labour. <p>15. The learner must evaluate the use of environmental assessments in relation to:</p> <ul style="list-style-type: none">(a) legal requirements(b) national, local and company policies(c) strategies for environmental protection during the construction process(d) the environmental impact of construction (including materials manufacture; embodied energy; on-site construction; prefabrication). <p>The assessment of this unit will be via a combination of centre-devised assignments and tests, and will be conducted in supervised conditions. The assessment strategy for the unit has been agreed with industry stakeholders.</p>
Location of the unit within the subject/sector classification system	4.1 Engineering
Name of the organisation submitting the unit	CABWI Awarding Body
Availability for use	Shared
Unit guided learning hours	48