



College of Contract Management
United Kingdom

Advanced Diploma in Construction Management



Syllabus

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1. Course Structure and Rules of Combination

1.1 Rationale

Certificate in Construction Management

This Level 4 Certificate in Construction Management has been designed for students who are interested in entering the construction sector or are currently progressing into a site management or site supervisory role. This qualification develops the learners' knowledge and skills to be able to design and develop projects, liaise with stakeholders and oversee small to medium construction projects safely and efficiently.

Advanced Diploma in Construction Management

The Level 5 Advanced Diploma in Construction Management is designed for students who are interested in entering into the construction sector or are currently progressing into a site management or site supervisory role. This qualification develops the learner's knowledge and skills in designing and developing projects, liaising with stakeholders and overseeing large or complex construction projects safely and efficiently. The Advanced Diploma in Construction Management is also designed for construction professionals who wish to study for a Bachelor's Degree (BSc or BEng) in a 2-year top-up course and become a technical member of the Chartered Institution of Civil Engineering Surveyors.

Expert lecturers, with decades of experience, deliver informative theoretical knowledge and provide practical learning examples based on their extensive professional experience. This course has been designed to deliver education that not only furthers your understanding but demonstrates how this knowledge can be applied in practice. Learners will gain an understanding of realistic challenges the industry professionals face and will become equipped with the right skills to navigate and overcome them.

1.2 Career Progression

The course provides the underpinning knowledge and understanding necessary for the Advanced Diploma in Construction Management. It also enables students to study towards a university degree, as once they complete the Advanced Diploma they can progress to our partner universities and study for a Bachelor's Degree. Additionally, whilst enrolled on the course they can apply for a student membership of the Chartered Institution of Civil Engineering Surveyors.

1.3 Course Rules of Combination

The course is comprised of two qualifications; the Level 4 Certificate in Construction Management and the Level 5 Advanced Diploma in Construction Management.

The course can be completed in 2 years (approximately 24 weeks) and includes an assessment at the end of each module.

Year 1:

- Fundamentals of Engineering Drawings
- Construction and Civil Engineering Technology
- Managing Sustainable Construction
- Project Management
- Health, Safety and Environment
- Tendering and Procurement Process

Year 2:

- Commercial Management
- Measurement and Estimating
- Contract Administration
- Cost Management
- Value Engineering
- Construction Claims and Dispute Resolution

To achieve the Certificate, candidates are required to undertake:

- All 6 modules from Year 1

To achieve the Advanced Diploma, candidates are required to undertake:

- All 12 modules from Year 1 & Year 2 — 6 from Year 1 & 6 from Year 2

1.4 Entry Requirements

- Minimum 18 years old **and** one of the following:
- Minimum Grade C in GCSE Mathematics and English (or equivalent) **or**
- Level 3 qualification in Engineering/Science including Mathematics **or**
- Relevant experience in the industry.

1.5 Module and Assessment Grades

The Assessor will award a grade for the achievement of each module (Fail, Pass, Merit or Distinction). Grades apply to overall performance in modules and assessments.

Indicative marking descriptors for differentiating between levels of achievement when marking assessments are provided below (Section 1.8).

The overall grade for a qualification is calculated using a points system. Each module grade attracts points as follows:

Fail	0 points
Pass	1 point
Merit	2 points
Distinction	3 points
Module Exemption	1 point

1.6 Assessment

The assessment process is set by the College of Contract Management, defining the requirements learners are expected to meet in order to demonstrate that a learning outcome has been achieved. All learning outcomes must be achieved in order to gain attainment of credit for that module.

All completed assessments are marked and verified internally, and are subject to approval by our partner universities or awarding bodies.

The assessment criteria are based on 3 areas:

- 1. Task Achievement** - This is a measure of how well the candidate answers the question/ questions and can identify the important aspects of the task.
- 2. Technical Content** - — This is a measure of how well the candidate identifies, describes and evaluates the technical aspects of the task.
- 3. Presentation** - This is a measure of how well the candidate presents the assessment, including the quality of the structure and paragraphing, the quality and relevance of visual or graphical content and the referencing used for quoted sources.

1.7 Assessment Policies

- All submission of assessments must include:
 - a copy of the full brief given by the Examinations Officer or Course Administrator;
 - all source material must be cited in the text and a full bibliography of source material (including author, title, publisher, edition and page) listed at the end of the submission.
- All submissions must be submitted into our system as instructed by the Examination Officer or Course Administrator.
- All submissions under the student's name must only be the work of that student. All information sources must be acknowledged. There is the **possibility of failing the modules if the content of the assessment are deemed be plagiarised** as set out in the rules and regulations of the College.
- All submissions should be in pdf format (unless software files are specified) and students must keep a copy of all submitted work for reference purposes. Receipt will be acknowledged by the College once the work is submitted via our online exam portal.
- Whenever a candidate submits work after the approved deadline without an authorised extension, a maximum "Pass" grade will be awarded.
- The Assessor will comment on the quality of the work for learning purposes.
- Application for an extension must be requested prior to the submission deadline. Submissions must be made on the exam portal for each module extension request. A primary extension (two weeks) request can be made without the submission of any evidence or reasoning, any further extension requests will require submission of supporting documentation. All requests must be addressed to the Examination Officer or Course Administrator.

1.8 Indicative Marking Descriptors

Note: Please note that the bands below describe indicative characteristics only. An overall holistic approach is required when assessing a candidate's work and assigning a grade. Please read these grading bands in conjunction with the College of Contract Management Assignment Policy.

Grade	Task Achievement - The Relevance of the Response	Inclusion of Relevant Technical Knowledge in Content	Presentation/Coherence
Distinction			
70%+	The work demonstrates a comprehensive understanding of the task. All relevant information is included. The main issues are effectively identified and analysed. There is evaluation and some analysis of solutions to issues relevant to the task. The response shows control of content within the word count.	The work demonstrates a strong understanding of a wide range of technical issues relevant to the task. There is analysis of the advantages/disadvantages of possible choices, risks and potential outcomes.	The work is appropriately structured and the argument is developed coherently. There is a recognised form of source referencing which supports the points in the task. Paragraphing and titling are used effectively to assist the reader. The use of visual/graphical information is clear and effective in assisting the reader. The graphical information is relevant to the task and is accurate.
Merit			
60-69%	The work demonstrates a clear understanding of the main issues relevant to the task. The issues are explained effectively and potential solutions identified. There is some attempt to analyse the merits of the solutions to the task. The task is broadly achieved within the word count, if relevant to assessment.	The work demonstrates an understanding of the key technical issues of the task. There is clear description of relevant technical aspects with some attempt to evaluate the merits of these as appropriate to the task.	Demonstrates an awareness of presentation and an attempt to present the information with clarity and coherence. There is referencing of sources and use of paragraphing and titling to assist the reader. There is use of clear graphical information to support the assessment which has broad relevance to the task. There may be some limited inaccuracies/ omissions in these.
Pass			
40-59%	The work demonstrates an understanding of the task. The main points are identified and the task is achieved. There is no attempt to evaluate or analyse the solutions. There may be some inaccuracies, omissions and irrelevant content. There may be lack of control in relation to the word count.	The work demonstrates an understanding of the main technical issues which are identified. This may be limited to description with little evidence of evaluation. There may be some omissions and inaccuracies in the detail. There may be some irrelevant details.	There is an attempt to structure the information. There is evidence of paragraphing and titling which is not always appropriate. Some basic graphical information may be included which is of some assistance to the reader. There may be some omissions or inaccuracies. The work is generally coherent but there may be occasional lapses in coherence and structure.
Fail			
0-39%	The work shows a poor understanding of the task. Frequent inaccuracies. Failure to identify important aspects of the task. Much of the information is irrelevant to the task. There may be evidence of copy and paste from external sources. The response may be limited to lists of words with no attempt to explain the relevance/merits of these to the task. The assessment falls short of the word count.	The work demonstrates a lack of understanding of the technical aspects. There are omissions of important technical information. Errors are evident in the technical content. There is no attempt to explain the relevance of the technical content to the task.	Lacks structure and may be limited to lists of points which are not developed. Disorganised in structure causing difficulty for the reader to understand the points. The response is illegible or incoherent in places. No referencing of external sources. The graphical illustrations are of poor quality or absent. They may be irrelevant. There may be errors and a lack of clarity causing difficulty for the reader to understand.

1.9 Calculating Overall Qualification Grade

To calculate the overall qualification grade, the individual module grades should be added together and compared to the tables below:

Level 4 Certificate in Construction Management

Candidates must pass 6 modules of the course, which must include the 3 mandatory modules in Year 1, as defined above and may include any of the remaining 9 modules from Year 1 or 2.

Total Points for all 6 Modules	Overall Grade	
18	Distinction	
17		
16		
15		
Distinction		
14	Merit	
13		
12		
11		
10	Merit	
9		
8		
7		
6	Pass	
5 or fewer		
Fail		
Candidates must achieve at least a pass in (or hold exemption from) all 6 modules to be awarded the Certificate.		

Level 5 Advanced Diploma in Construction Management – entire qualification

Candidates must pass all 12 modules of the course.

Total Points for all 12 Modules	Overall Grade	
36	Distinction	
35		
34		
33		
32		
31		
30		
29		
Distinction		
28	Merit	
27		
26		
25		
24		
23		
22		
21		
20	Merit	
19		
18		
17		
16		
15		
14		
13		
12	Pass	
11 or fewer		
Fail		
Candidates must achieve at least a pass in (or hold exemption from) all 12 modules to be awarded the Diploma.		

1.10 Mandatory Modules

Module Reference	Title	Credit Value	LH
CM401	Fundamentals of Engineering Drawings	10	100
CM402	Construction and Civil Engineering Technology	10	100
CM403	Managing Sustainable Construction	10	100
CM404	Construction Project Management	10	100
CM405	Health, Safety and Environment	10	100
CM406	Tendering and Procurement Process	10	100
Year 2			
CM501	Commercial Management	10	100
CM502	Method of Measurement and Estimating	10	100
CM503	Contract Administration	10	100
CM504	Cost Management	20	200
CM505	Value Engineering	10	100
CM506	Construction Claims and Dispute Resolution	10	100

CM401: Fundamentals of Engineering Drawings

Learning outcomes: The learner will	Assessment criteria: The learner can
1. Comprehend engineering language and fundamental drawings and design principle.	1.1 Understand the types of sectional views, cutting plane or sectional plane. 1.2 Determine the layout of drawing sheet, margin, border lines, title block, list of parts, scales, uses of scale, sizes of scale, dimensioning.
2. Compare various civil engineering design options and be able to apply dimensions on engineering drawings.	2.1 Assess the purpose of construction drawing, drawing lines and shapes, views and dimensions. 2.2 Interpret the representation of materials, doors, windows, and first and third angle projection.
3. Apply the features and functions of typical CAD systems for producing CAD drawings.	3.1 Comprehend the plans, elevations, structural elements, elevations, component drawings and engineering drawings. 3.2 Read symbols indicating materials and drawings for trade information. 3.3 Prepare detailed structural and service drawings. 3.4 Create 2D drawings using Auto CAD.
4. Utilise BIM Tools.	4.1 Navigate BIM Tools. 4.2 Understand quantification using the BIM Process.

Recommended Reading

1. Bichard, A. and Styles, K. (2004) *Working Drawings Handbook*. 4th ed. Routledge.
2. Huth, M. (2018) *Understanding Construction Drawings*. 7th ed. Cengage Learning.
3. Kilmer, R. and Kilmer, W.O. (2021) *Construction Drawings and Details for Interiors*. 4th ed. Wiley.

CM402: Construction and Civil Engineering Technology

Learning outcomes: The learner will	Assessment criteria: The learner can
1. Manage and mitigate health, safety and environmental (HSE) risks.	1.1 Carry out risk assessment. 1.2 Create a management plan for safe working practices. 1.3 Manage and mitigate HSE risks at pre-and post-contract stages. 1.4 Carry out quantitative and qualitative risk techniques.
2. Comprehend health, safety and environmental law and obligations in construction and the application of current Construction Design and Management (CDM) regulations.	2.1 Identify HSE hazards in construction. 2.2 Carry out emergency management procedures in accident preventions and investigations. 2.3 Identify and apply the legislation, standards and best practice to prevent accidents. 2.4 Comply with Reporting of Injuries, Diseases and Dangerous Occurrences Regulations (RIDDOR). 2.5 Assess obligations of all parties involved in construction according to the HSE law.
3. Identify foundations and substructure and be able to design and operate with suitable technology.	3.1 Identify types of foundation (e.g. reinforced strip, piles, raft foundations). 3.2 Assess basement construction. 3.3 Carry out excavations and ground works.
4. Understand the superstructure in building construction and able to design and operate with suitable technology in buildings and civil engineering construction.	4.1 Identify type of frames in multistorey buildings and civil engineering construction. 4.2 Apply sustainable technologies in multistorey buildings and civil engineering construction. 4.3 Assess building and civil engineering materials and Selection. 4.4 Examine the exterior envelope of multistorey buildings.
5. Determine the technology in design process of the built environment.	5.1 Evaluate architectural innovations. 5.2 Identify environmental legislations. 5.3 Assess planning and building regulations. 5.4 Consider other impacts in construction design.
6. Select and operate building services and systems in a multi stories building.	6.1 Select heating and ventilation. 6.2 Meet fire safety and building security requirements. 6.3 Consider energy efficient buildings and select suitable technology in installation of services such power, gas, telecommunications, water, drainage, wastewater, etc.

Text Book

1. Cotgrave, A. and Riley, M. (2014) *Construction Technology 2: Industrial and Commercial Building*. 3rd ed. Bloomsbury Visual Arts.

Recommended Reading

1. Hughes, P. (2015) *Introduction to Health and Safety in Construction*. 5th ed. Taylor and Francis.

CM403: Managing Sustainable Construction

Learning outcomes: The learner will	Assessment criteria: The learner can
1. Understand the impact of environmental legislation and standards on construction works.	1.1 Explain how environmental legislation affects construction works. 1.2 Evaluate the methods for examining function against cost, making reference to industry reports and initiatives. 1.3 Evaluate the use of environmental assessment standards on construction works.
2. Determine how the selection and use of materials and products can contribute to sustainable construction.	2.1 Evaluate the use of sustainable materials and products for a given construction project. 2.2 Assess the lifecycle costs of materials and products for a given project. 2.3 Produce a sustainable procurement strategy for a given construction works. 2.4 Explain how the process of installing building services may affect the energy performance of the completed project. 2.5 Explain to the end user how to sustain the optimum performance of a construction project.
3. Manage the installation of low carbon technologies for construction projects, following industry best practice.	3.1 Manage the operation of low carbon technology installations following manufacturer's instructions. 3.2 Comprehend the responsibilities of the site manager for planning and scheduling the installation of low carbon technologies. 3.3 Explain the factors to be considered when retrofitting low carbon technologies to existing construction projects.
4. Manage construction waste, including water, following industry best practice.	4.1 Produce a waste management plan, including water, for a given project, following industry best practice. 4.2 Evaluate progress against the waste management plan targets throughout the construction phase of a given project.

Text Book

1. DVD ROM. (2008) *A Guide to Sustainability in the Construction Industry*. Construction Skills.
2. Burton, S. (2012) *Handbook of Sustainable Refurbishment - Housing*. Routledge.
3. BRE. (2002) *MaSC Managing Sustainable Construction: Accelerated Learning*. CRC Press.

CM404: Construction Project Management

Learning outcomes: The learner will	Assessment criteria: The learner can
1. Demonstrate techniques for stakeholder and people management.	1.1 Identify the role of stakeholders in the construction management process. 1.2 Demonstrate knowledge of principles for managing and motivating workforce who form part of the construction process.
2. Understand construction project planning and scheduling.	2.1 Evaluate tools used for construction project scheduling and programming. 2.2 Evaluate options for managing delay on projects. 2.3 Conduct earned value analysis and cash flow. 2.4 Understand project risk and value management.
3. Develop the skills required for cost control on projects.	3.1 Demonstrate knowledge of cost control measures used for construction project management.
4. Understand resource management for construction projects.	4.1 Demonstrate the ability to plan and manage resources for construction projects (materials, labour, plant and equipment).
5. Identify modern project management principles.	5.1 Demonstrate an understanding of sustainability in project management. 5.2 Understand the use of BIM and other technologies to construction project management. 5.3 Demonstrate knowledge of Integrated Project Delivery (IPD) and collaborative practices. 5.4 Develop skills for innovative health and safety management in project management.

Recommended Reading

1. Baldwin, A. and Bordoli, D. (2014) *A Handbook for Project Planning and Scheduling*. Wiley Blackwell.
2. Cooke, B. and Williams, P. (2009) *Construction Planning, Programming and Control*. 3rd ed. Blackwell.
3. Forster, G. (2014) *Building Organisations and Procedures*. 2nd ed. Routledge.
4. Morton R. (2007) *Construction UK: Introduction to the Industry*. 2nd ed. Blackwell.

CM405: Health, Safety and Environment

Learning outcomes: The learner will	Assessment criteria: The learner can
1. Assess how the UK Legal system as it applies to Health and safety to construction activities.	1.1 Explain the main provisions of H&S law, including: <ul style="list-style-type: none"> • Criminal, civil, statute and common law • Health and Safety at Work etc. Act 1974 • Regulations. 1.2 Highlight the levels of injury and ill health resulting from work activities including the principals causes of accidents and ill health in the construction industry.
2. Understand the principles of risk management including risk assessment, safe systems of work and management systems for control of H&S.	2.1 Implement the main requirements of the Management of Health and Safety at Work Regulations 1999. 2.2 Manage Risk within their organization and be able demonstrate the requirements for risk assessment.
3. Interpret the project management requirements of CDM 2015 Parts 2 & 3.	3.1 Identify the duties of the Client, Principal Designer, Principal Contractor, Contractor and Designer.
4. Comply with the legal requirements for safe practice on all construction sites with regard CDM 2015 Part 4.	4.1 Identify the nature and frequency required for the inspection of excavations and location of buried and overhead services. 4.2 List the requirements for safe site transport including traffic routes and vehicles. 4.3 Identify the requirements for welfare facilities on varied types of site.
5. Monitor, report on and manage occupational health.	5.1 State the main requirements of the Control of Substances Hazardous to Health. 5.2 Manage the specific hazards and controls with respect to asbestos to include recognition of types. 5.3 Identify the health effects of noise and vibration and the controls required.
6. Identify and safely manage electricity & work equipment.	6.1 Identify precautions associated with electrical equipment. 6.2 Identify the requirements of the Provision and Use of Work Equipment Regulations 1998 and the Lifting Operations and Lifting Equipment Regulations 1998.
7. Identify the risks of working at height.	7.1 State the main requirements of the Work at Heights Regulations. 7.2 Identify suitable control measures for work at height.
8. Identify the risks of fire and working in confined spaces.	8.1 Describe the 'fire triangle'. 8.2 Identify types of fire and the main causes of fire in construction. 8.3 Give typical construction industry examples of a confined space. 8.4 Identify appropriate measures for prevention of confined space accidents.

9. Consider the environment and potential environmental impacts.	9.1 Identify the hierarchy of waste management. 9.2 Define sustainable construction.
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Recommended Reading

1. Baldwin, A. and Bordoli, D. (2014) *A Handbook for Project Planning and Scheduling*. Wiley Blackwell.
2. Cooke, B. and Williams, P. (2009) *Construction Planning, Programming and Control*. 3rd ed. Blackwell.
3. Forster, G. (2014) *Building Organisations and Procedures*. 2nd ed. Routledge.
4. Morton R. (2007) *Construction UK: Introduction to the Industry*. 2nd ed. Blackwell.

CM406: Tendering and Procurement Process

Learning outcomes: The learner will	Assessment criteria: The learner can
1. Understand the procurement of construction materials and plant for the execution of the works.	1.1 Explain the organisational procurement process for construction materials and plant. 1.2 Describe procurement requirements for public and private sector projects, both nationally and internationally. 1.3 Explain the relationship between effective procurement and cost control.
2. Comprehend how construction work is procured.	2.1 Discuss how construction work is procured, evaluating the merits of alternative routes. (TN – traditional, design and build, management contracting, construction management, term contracting, partnering, PFI; single-, two-stage, negotiated tenders; sub-contracting, appointing consultants)
3. Understand tender documentation and the bid process in construction projects.	3.1 Analyse the tendering process and tender action. 3.2 Explain the competitive bidding under risk and budgetary control. 3.3 Describe the sequence of successful tender submissions.
4. Evaluate tenders to award successful contractors.	4.1 Explain the evaluation and comparison of bids process. 4.2 Explain the preparation of tender evaluation report and award.

Text Book

1. Ramus, J. and Birchall, S. (1996) *Contract Practice for Surveyors*. 3rd ed. Architectural Press.

Recommended Reading

1. Kwakye, A. (1994) *Understanding Tendering and Estimating*. Ashgate Publishing.
2. Hackett, M., ed. and Statham, G., ed. (2016) *The Aqua Group Guide to Procurement, Tendering and Contract Administration*. 2nd ed. Wiley-Blackwell.

CM501: Commercial Management

Learning outcomes: The learner will	Assessment criteria: The learner can
1. Understand valuation and payment or construction projects.	1.1 Identify the valuation process for construction projects. 1.2 Comprehend the legal requirements for payment. 1.3 Prepare interim payment certificates. 1.4 Prepare final accounts for construction projects.
2. Demonstrate knowledge of variations, delays and extension of time.	2.1 Understand clauses relating to variations. 2.2 Identify different types of delays and their implications. 2.3 Conduct delay analysis and identify extension of time required. 2.4 Interpret damages for late completion.
3. Apply appropriate principles in cash flow management.	3.1 Understand the principle of cash flow forecasting. 3.2 Manage cash flow on a project.
4. Demonstrate knowledge of financial management and budgetary control.	4.1 Understand the principles of financial management for construction projects. 4.2 Demonstrate knowledge of budgetary control on a project.
5. Understand construction company organisation and planning.	5.1 Understand the principles of construction company organisation. 5.2 Comprehend market planning in the construction industry.

Recommended Reading

1. Uff, J. (2005) *Construction Law*. 9th ed. Sweet & Maxwell.
2. Harris, F. and McCaffer, R. (2013) *Modern Construction Management*. 8th ed. Wiley-Blackwell.
3. Powell, G. (2016) *Construction Contract Preparation and Management: From Concept to Completion*. 2nd ed. Palgrave Macmillan.
4. Godwin, W. (2013) *International Construction Contracts: A Handbook*. John Wiley & Sons.

CM502: Method of Measurement and Estimating

Learning outcomes: The learner will	Assessment criteria: The learner can
1. Understand the estimation processes for a construction tender.	1.1 Identify organisation of the estimating function. 1.2 Assess procurement path. 1.3 Select forms of contract. 1.4 Interpret tender documentation. 1.5 Apply estimating methods.
2. Assess and appreciate the importance of measurement in construction and able to use the method of measurement for the estimating process.	2.1 Apply quantity surveying techniques. 2.2 Identify the Civil Engineering Standard Method of Measurement (CESMM4). 2.3 Identify the Method of Measurement for Highway Works (MMHW). 2.4 Apply RICS New Rules of Measurement (NRM). 2.5 Consider specifications.
3. Produce an estimate for a construction tender and for a given construction project in a standard industry format.	3.1 Assess resource costs — labour, plant & material. 3.2 Formulate provisional sums & day works. 3.3 Highlight preliminaries. 3.4 Identify unit rate pricing. 3.5 Identify risks, opportunities & fluctuations. 3.6 Complete the Estimate & Final Tender Review.

Text Book

1. Brook, M. (2016) *Estimating and Tendering for Construction Work*. 5th ed. Routledge.

Recommended Reading

1. Ostrowski. (2013) *Measurement using the New Rules of Measurement*. Wiley Blackwell.
2. Mitchell, H. (n/a) *Managing with the MMHW*. CICES Publishing.
3. Packer, A. (2016) *Building Measurement: New Rules of Measurement*. 2nd ed. Routledge.
4. ICE Conditions of Contract, 7th edition.

CM503: Contract Administration

Learning outcomes: The learner will	Assessment criteria: The learner can
1. Understand the basis for the contract administration.	1.1 Understand the principles of contract law. 1.2 Demonstrate knowledge of construction contracts and contract selection. 1.3 Identify the roles and responsibilities under the contract.
2. Navigate multiple forms of contract.	2.1 Navigate JCT contracts. 2.2 Understand NEC contracts. 2.3 Comprehend FIDIC contracts. 2.4 Carry out comparison of the different types of contract.
3. Complete contract administration and project performance.	3.1 Demonstrate knowledge of time management from a contractual perspective including extension of time and damages for late completion. 3.2 Consider cost management from a contractual perspective. 3.3 Display knowledge of quality management (materials and workmanship) from a contractual perspective.
4. Prepare valuation and payments.	4.1 Prepare a valuation for a given contract. 4.2 Prepare interim payments for a given period on a construction project. 4.3 Prepare final accounts for a project.
5. Identify key areas in construction contracts.	5.1 Understand the concept of variations. 5.2 Assess bonds and insurance. 5.3 Demonstrate knowledge of claims and be able to prepare final accounts. 5.4 Advice on dispute resolutions (ADRs).

Recommended Reading

1. Murdoch, J. and Hughes, W. (2008) *Construction Contracts Law and Management*. 4th ed. Taylor and Francis.
2. Chappell, D. (2007) *Understanding JCT Standard Building Contracts*. 8th ed. Taylor and Francis.
3. Powell, G. (2016) *Construction Contract Preparation and Management: From Concept to Completion*. 2nd ed. Palgrave Macmillan.
4. Sime, S., Browne, J. and Blake, S. (2014) *A Practical Approach to Alternative Dispute Resolution*. Oxford University Press.
5. Uff, J. (2013) *Construction Law: Law and Practice Relating to the Construction Industry*. 11th ed. Sweet & Maxwell.
6. ICE. (2005) *NEC3 Engineering and Construction Contract (ECC)*. ICE.

CM504: Cost Management

Learning outcomes: The learner will	Assessment criteria: The learner can
1. Comprehend cost management in construction.	1.1 Explain the sources of cost on construction projects. 1.2 Understand the basis for cost control on construction projects.
2. Carry out cost control and cost planning.	2.1 Perform cash flow forecasting. 2.2 Demonstrate knowledge of cost planning techniques. 2.3 Conduct earned value analysis for a project. 2.4 Manage actual spending against budget on projects.
3. Manage productivity and cost control.	3.1 Understand the measures required to improve productivity on projects.
4. Monitor progress of work in relation to cost.	4.1 Produce a site diary for monitoring progress of construction works.
5. Complete resource management on construction projects.	5.1 Manage plant and equipment on projects. 5.2 Manage materials on projects. 5.3 Manage human resources on projects. 5.4 Understand whole life costing for resources used for construction projects.

Recommended Reading

1. Potts, K. and Ankrah, N. (2014) *Construction Cost Management: Learning from Case Studies*. 2nd ed. Routledge.
2. Baldwin, A. and Bordoli, D. (2014) *A Handbook for Project Planning and Scheduling*. Wiley Blackwell.
3. Cooke, B. and Williams, P. (2009) *Construction Planning, Programming and Control*. 3rd ed. Blackwell.
4. Harris, F. and McCaffer, R. (2013) *Modern Construction Management*. 8th ed. Wiley-Blackwell.
5. Winch, G. (2010) *Managing Construction Projects: An Information Processing Approach*. 2nd ed. Wiley-Blackwell.

CM505: Value Engineering

Learning outcomes: The learner will	Assessment criteria: The learner can
1. Implement value management for construction projects.	1.1 Apply of value management and implementing a value management programme. 1.2 Optimise the benefits of joint venture projects and re-engineering the procurement process.
2. Understand value engineering procedure.	2.1 Determine the elements of value engineering and selection. 2.2 Complete analysis, teamwork, procedures, information, speculation, evaluation, investigation and planning, implementation and summary.
3. Prepare interim certificates and payment.	3.1 Evaluate preliminaries, provisional work, measured work and variations and extras. 3.2 Evaluate nominated sub-contractors and suppliers work, fluctuations, unfixed materials and retention. 3.3 Identify components of interim certificates and payments.
4. Evaluate materials for construction projects.	4.1 Understand material requisition, bill of materials and methods of materials. 4.2 Investigate inflation.
5. Understand objectives and principle of value analysis in construction projects.	5.1 Determine objectives and principles of value analysis and participants in value analysis. 5.2 Understand the value analysis process.

References and Further Reading

1. Hacket, M., Robinson, I. and Statham, G. (2007) *Procurement, Tendering & Contract Administration*. The Aqua Group and Blackwell Publishing.
2. Seely, I. (1997) *Quantity Surveying Practice*. Macmillan.

CM506: Construction Claims and Dispute Resolution

Learning outcomes: The learner will	Assessment criteria: The learner can
1. Determine basis of claims.	1.1 Identify types of claims. 1.2 Assess implied terms, variation of contract, omission of work to give it to others, extra work, possession of site and site conditions.
2. Understand and have knowledge in types of claims and science behind the contractor's claims.	2.1 Identify common law claims, ex gratia claims, and contractual claims. 2.2 Navigate fluctuation claim, claims for extensions of time, claims for loss and/or expense, global claims.
3. Understand claims under forms of contract.	3.1 Identify claims for variations. 3.2 Process claims for extensions of time. 3.3 Provide claims for additional payment due to prolongation, acceleration and disruption claims. 3.4 Produce interim and final claims.
4. Identify and recognise relevant issues and preparation of claims arising out by possible problems.	4.1 Record common occurrences, cause and effect, allocation of culpability and counter claims. 4.2 Recognise and implement analytical methods and evaluation techniques, delay, prolongation, acceleration, mitigation and disruption.
5. Comprehend forms of contract documents and form of contracts.	5.1 Manage contract documents. 5.2 Navigate multiple forms of contracts.
6. Prepare and defend effective claims.	6.1 Identify standard forms and applications. 6.2 Research objectives and methods, focus Areas, trends and trails, data basing and process. 6.3 Process the head of claims, development of claims, procedures or processes of claims. 6.4 Review and analysis of claim and presentation.
7. Understand dispute avoidance and resolution processes.	7.1 Monitor negotiation and mediation. 7.2 Manage conciliation. 7.3 Assess adjudication. 7.4 Consult the DAB (Dispute Adjudication Board). 7.5 Carry out arbitration.

References and Further Reading

- Chappell, D. (2011) *Building Contract Claims*. 5th ed. Wiley-Blackwell.
- Eggleston, B. (2008) *Liquidated Damages and Extensions of Time in Construction Contracts*. 3rd ed. Wiley-Blackwell.