Advanced Diploma in Construction Management

Syllabus

18 May 2018

Contents

1 Programme Structure and Rules of Combination

1.1 Rationale

Certificate in Construction Management
The Level 4 Certificate in Construction Management is designed for students who are interested to enter into the construction sector or currently progressing into a site management or site supervisory role. This qualification develops the learner's knowledge and skills 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 4 Advanced Diploma in Construction Management is designed for students who are interested to enter into the construction sector or currently progressing into a site management or site supervisory role. The qualification develops the learner's knowledge and skills to design and develop projects, liaise with stakeholders and oversee 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 at one of our partner universities and become a technical member of the Chartered Institution of CIVIL ENGINEERING SURVEYORS.

1.2 Progression to other qualifications

The programme provides the underpinning knowledge and understanding for the Advanced Diploma in Construction Management. It also enables students to study towards a university degree, as once they achieve the Advanced Diploma they can progress to our partner universities and study for a Bachelor's Degree. Whilst they follow the course they can apply for a student membership of the Chartered Institution of CIVIL ENGINEERING SURVEYORS.

1.3 Programme Rules of Combination

The programme comprises two qualifications; the Level 4 Certificate in Construction Management and the Level 4 Advanced Diploma in Construction Management.

The course is of two years' duration, including optional industrial training. Each year long programme contains 6 core units. Students' performance will be assessed by an open book online exam (assignments).

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 Units from Year 1

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

- All 12 units 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 in Mathematics and English (or Equivalent) **or**
- Level 3 qualification in Engineering/Science including Mathematics **or**
- If you have relevant experience, please contact us on enquiries@theccm.co.uk with your updated CV.

1.5 Unit and Assessment Grades

The tutor will award a grade to the achievement of each unit (fail, pass, merit or distinction). Unit grades apply to overall performance in units including assignments, practical exercises and course work.

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

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

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

1.6 Assessment

The assessment process is set by the College of Contract Management, which defines the requirements learners are expected to meet to demonstrate that a learning outcome has been achieved. All learning outcomes must be achieved in order to gain attainment of credit for that unit. Tutor-led assessment should be carried out throughout the course.

All units are assessed by internally-set assignment briefs by the partner universities and chartered institutions. Internally-set assignment briefs must be approved prior to issue to candidates.

All completed assessments are marked internally, internally verified and subject to approval by our partner universities and the Chartered Institution of CIVIL ENGINEERING SURVEYORS.

The assessment criteria are based on 3 areas:

The assessment criteria are based on 3 areas:

1. **Task achievement** – This is a measure of how well the candidate answers the task question/questions and the identification of 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 assignment and includes 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 Assignment Policies

1. All submission of assignments must include:

   a) a copy of the full brief given by the Examinations Officer
   b) 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

2. All submissions must be submitted into our system as instructed by the Examinations Officer.

3. 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 module if the contents of the assignment are plagiarised** as set out in the rules and regulations of the institution.

4. All submissions should be in pdf format and students **must** keep a copy of all submitted work for reference purposes. Receipt will be acknowledged by the College once the work is completed.

5. Whenever a candidate submits work after the approved deadline without an authorised extension, a "Pending" grade will be awarded. Assessor may comment on the quality of the work for learning purposes.

6. Requests for extensions of submission deadlines must be made in writing **prior** to the submission deadline to the Assessor and must be supported by documentary evidence.

1.8 Level 4 Certificate and Level 4 Advanced Diploma in Construction Management 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 assignment.	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 assignment 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 assignment 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 table below:

1.9.1 Level 4 Certificate in Construction Management

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

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

1.9.2 Level 4 Advanced Diploma in Construction Management – entire qualification

Candidates must pass all 12 units of the programme

Total Points for all 12 Units	Overall Grade
36	**Distinction**
35	
34	
33	
32	
31	
30	
29	
28	**Merit**
27	
26	
25	
24	
23	
22	
21	
20	

19	**Pass**
18	
17	
16	
15	
14	
13	
12	
11 or fewer	**Fail**
Candidates must achieve at least a pass in (or hold exemption from) all 12 units to be awarded the Advanced Diploma.	

Subject	Fundamentals of Engineering Drawings
Subject Code	CM401

Summary

Year	1
Unit	CM401
Status	core
Learning Hours	100 hrs including Lectures and Group Exercises
Credits	10
Period of Study	2 months

Summary of Learning Outcomes

Learning outcomes are results of learning that students will have achieved on successfully completing a course. The following reference points were used in designing the learning outcomes;

- QAA Subject Benchmark Statements to ensure: that appropriate and effective teaching, support, assessment and learning resources are provided for students; that the learning opportunities provided are monitored; and that the provider considers how to improve them; and

- The professional competencies required by ICES and CIOB.

Learning outcomes are expressed under three broad headings of achievement in both threshold and typical standards:

U: Understanding (a general awareness of the activity)
K: Knowledge (a more detailed level of understanding of the activity)
S: Skills (to be able, without supervision, to perform relevant functions)

Learning outcomes: The learner will:	Assessment criteria: The Learner can:
1. Have a sound understanding in engineering language and fundamental drawings and design principle [K, U].	1.1 Understand the types of sectional views, Cutting plane or sectional plane. 1.2 Understand the layout of drawing sheet, margin, border lines, title block, list of parts, scales, uses of scale, sizes of scale, dimensioning.
2. Understand various civil engineering design options and able to apply dimensions on engineering drawings [S].	2.1 Understand the purpose of construction drawing, drawing lines and shapes, views and dimensions. 2.2 Understand the representation of materials, doors, windows, and first and third angle projection.
3. Be able to apply the features and functions of typical CAD systems for producing CAD drawings [S].	3.1 Understand the plans, elevations, structural elements, elevations, component drawings and engineering drawings. 3.2 Able to read symbols indicating materials and drawings for trade information. 3.3 Able to prepare detailed structural and service drawings. 3.4 Able to create 2D drawings using Auto CAD.
4. Understanding BIM Tools [K, U].	4.1 Introduction of BIM Tools. 4.2 Understand Quantification using the BIM Process.
Additional information about the unit	
Units aim(s)	

Recommended Reading

1. Keith Styles and Andrew Bichard, *Working Drawings Handbook*, 4th edition
2. Mark W. Huth, *Understanding Construction Drawings*, 5th edition
3. W. Otie Kilmer, Rosemary Kilmer, *Construction Drawings and Details for Interiors*: Basic Skills, 2003

Unit Title	Construction and Civil Engineering Technology
Unit Code	CM402

Summary

Year	1
Unit	CM402
Status	core
Learning Hours	100hrs including Lectures and Group Exercises
Credits Value	10
Period of Study	2 months

Summary of Learning Outcomes

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- QAA Subject Benchmark Statements to ensure: that appropriate and effective teaching, support, assessment and learning resources are provided for students; that the learning opportunities provided are monitored; and that the provider considers how to improve them; and

- The professional competencies required by ICES and CIOB.

Learning outcomes are expressed under three broad headings of achievement in both threshold and typical standards:

U: Understanding (a general awareness of the activity)
K: Knowledge (a more detailed level of understanding of the activity)
S: Skills (to be able, without supervision, to perform relevant functions)

Learning outcomes: The learner will:	Assessment criteria: The Learner can:
1. Able to manage and mitigate health, safety and environmental (HSE) risks [K, S]	1.1 Risk assessment. 1.2 Management plan for safe working practices. 1.3 Manage and mitigate HSE risks at pre-and post-contract stages. 1.4 Quantitative and qualitative risk techniques.
2. Understanding health, safety and environmental law and obligations in construction and the application of current Construction Design and Management (CDM) regulations [K, S]	2.1 HSE hazards in construction. 2.2 Emergency management procedures in accident preventions and investigations. 2.3 Identify and apply the legislation, standards and best practice to prevent accidents. 2.4 Reporting of Injuries, Diseases and Dangerous Occurrences Regulations (RIDDOR). 2.5 Obligations of all parties involved in construction according to the HSE law.
3. Understanding foundations and substructure and able to design and operate with suitable technology [K, S]	3.1 Types of foundation (e.g. reinforced strip, piles, raft foundations). 3.2 Basement construction. 3.3 Excavations and ground works.
4. Understanding the superstructure in building construction and able to design and operate with suitable technology in buildings and civil engineering construction [S]	4.1 Type of frames in multi storey buildings and civil engineering construction. 4.2 Sustainable technologies in multi storey buildings and civil engineering construction. 4.3 Building and civil engineering materials and Selection. 4.4 Exterior envelope of multi storey buildings.
5. Understanding the technology in design process of the built environment [K, U]	5.1 Architectural innovations. 5.2 Environmental legislations. 5.3 Planning and Building Regulations. 5.4 Other impacts in construction design.
6. Able to select and operate building services and systems in a multi stories building [K, S]	6.1 Heating and ventilation. 6.2 Fire safety and building security Requirements. 6.3 Energy efficient buildings and select suitable technology in installation of services such power, gas, telecommunications, water, drainage, wastewater, etc.
Additional information about the unit	
Units aim(s)	

Text Book

1. Mike Riley & Alison Cotgrave, *Construction Technology 2 – Industrial and Commercial Building*, 3rd Edition

Recommended Reading

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

Unit Title	Managing Sustainable Construction
Unit Code	CM403

Summary

Year	1
Unit	3
Status	core
Learning Hours	100hrs including Lectures and Group Exercises
Credits Value	10
Period of Study	2 months

Summary of Learning Outcomes

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- QAA Subject Benchmark Statements to ensure: that appropriate and effective teaching, support, assessment and learning resources are provided for students; that the learning opportunities provided are monitored; and that the provider considers how to improve them; and

- The professional competencies required by the ICES and the CIOB.

Learning outcomes are expressed under three broad headings of achievement in both threshold and typical standards:

U: Understanding (a general awareness of the activity)
K: Knowledge (a more detailed level of understanding of the activity)
S: Skills (to be able, without supervision, to perform relevant functions)

Learning outcomes: The learner will:	Assessment criteria: The Learner can:
1. Understand the impact of environmental legislation and standards on construction works [U].	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. Understand how the selection and use of materials and products can contribute to sustainable construction [U, K].	2.1 Evaluate the use of sustainable materials and products for a given construction project. 2.2 Evaluate 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. Understand how to manage the installation of low carbon technologies for construction projects, following industry best practice [U, K].	3.1 Explain the operation of low carbon technology installations following manufacturer's instructions. 3.2 Explain 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. Be able to manage construction waste, including water, following industry best practice [S].	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.
Additional information about the unit	
Units aim(s)	

Recommended Reading

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

Unit Title	Construction Project Management
Unit Code	CM404

Summary

Year	1
Unit	CM404
Status	core
Learning Hours	100hrs including Lectures and Group Exercises
Credits Value	10
Period of Study	8 weeks

Summary of Learning Outcomes

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- QAA Subject Benchmark Statements to ensure: that appropriate and effective teaching, support, assessment and learning resources are provided for students; that the learning opportunities provided are monitored; and that the provider considers how to improve them; and

- The professional competencies required by the ICES and the CIOB.

Learning outcomes are expressed under three broad headings of achievement in both threshold and typical standards:

U: Understanding (a general awareness of the activity)
K: Knowledge (a more detailed level of understanding of the activity)
S: Skills (to be able, without supervision, to perform relevant functions)

Learning outcomes: The learner will:	Assessment criteria: The Learner can:
1. Understand 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 Be able to 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. Understand 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
Additional information about the unit	
Units aim(s)	

Recommended Readings

1. Baldwin, A. and Bordoli, D. (2014) A Handbook for Project Planning and Scheduling; Chichester: Wiley Blackwell

2. Cooke, B and Williams, P. (2009) Construction Planning, Programming and Control, 3rd edition; Oxford: Blackwell
3. Forster G. (2014) Building - Organisations and Procedures, 2nd edition; Abingdon: Routledge
4. Morton, R (2007) Construction UK: Introduction to the Industry, 2nd edition.; Oxford: Blackwell

Unit Title	**Health, Safety and Environment**
Unit Code	CM405

Summary

Year	1
Unit	CM505
Status	core
Learning Hours	100hrs including Lectures and Group Exercises
Credits Value	10
Period of Study	8 weeks

Summary of Learning Outcomes

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- QAA Subject Benchmark Statements to ensure: that appropriate and effective teaching, support, assessment and learning resources are provided for students; that the learning opportunities provided are monitored; and that the provider considers how to improve them; and

- The professional competencies required by the ICES and the CIOB.

Learning outcomes are expressed under three broad headings of achievement in both threshold and typical standards:

U: Understanding (a general awareness of the activity)
K: Knowledge (a more detailed level of understanding of the activity)
S: Skills (to be able, without supervision, to perform relevant functions)

Learning outcomes: **The learner will:**	**Assessment criteria:** **The Learner can:**
1 Understand 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: • 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 Regulations1999 2.2 Know how to manage Risk within their organization and be able demonstrate the requirements for risk assessment.
3 Know the project management requirements of CDM 2015 Parts 2 & 3	3.1 Delegates will be able to identify the duties of the Client, Principal Designer, Principal Contractor, Contractor and Designer
4 Be able to comply with the legal requirements for safe practice on all construction sites with regard CDM 2015 Part 4	4.1 Delegates will be able to identify : • the nature and frequency required for the inspection of excavations and location of buried and overhead services • The requirements for safe site transport including traffic routes and vehicles • the requirements for welfare facilities on varied types of site
5 Occupational Health	5.1 Delegates will be able to • State the main requirements of the Control of Substances Hazardous to Health • State the specific hazards and controls with respect to asbestos to include recognition of types 5.2 Delegates will be able to • Identify the health effects of noise and vibration and the controls required
6 Electricity & Work equipment	6.1 Delegates will be able to • Identify precautions associated with electrical equipment 6.2 Delegates will be able to identify • the requirements of the Provision and Use of Work Equipment Regulations 1998 and the Lifting Operations and Lifting Equipment Regulations 1998

7 Working at Height	7.1 Delegates will be able to • State the main requirements of the Work at Heights Regulations • Identify suitable control measures for work at height.
8.1Fire 8..2 Confined Spaces	8.1 Delegates will be able to: • Describe the 'fire triangle' • Identify Types of fire and the main causes of fire in construction 8.2 Delegates will be able to • Give typical construction industry examples of a confined space • identify appropriate measures for prevention of confined space accidents
9 Environment	9.1 Delegates will be able to: ▪ Identify the hierarchy of waste management ▪ Describe Sustainable Construction
Additional information about the unit	
Units aim(s)	

Recommended Readings

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

Unit Title	Tendering and Procurement Process
Unit Code	CM406

Summary

Year	1
Unit	CM406
Status	core
Learning Hours	100hrs including Lectures and Group Exercises
Credits Value	10
Period of Study	2 months

Summary of Learning Outcomes

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- The professional competencies required by the ICES and the CIOB.

Learning outcomes are expressed under three broad headings of achievement in both threshold and typical standards:

U: Understanding (a general awareness of the activity)
K: Knowledge (a more detailed level of understanding of the activity)
S: Skills (to be able, without supervision, to perform relevant functions)

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 [U, K]	1.1 Explain the organisational procurement process for construction materials and plant. 1.2 Describe procurement requirements for public sector projects. 1.3 Explain the relationship between effective procurement and cost control.
2. Understand how construction work is procured [U].	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 [U, K].	3.1 Explain the tendering process and tender Action. 3.2 Explain the competitive bidding under risk and budgetary control. 3.2 Describe the sequence of successful tender Submissions.
4. Able to evaluate tenders to award successful contractor [K, S].	4.1 Explain the evaluation and comparison of bids process. 4.2 Explain the preparation of tender evaluation report and award.
Additional information about the unit	
Units aim(s)	

Text Book

1. Ramus, Jack and Birchall, *Simon, Contract Practice for Surveyors*, 3rd edition

Recommended Reading

1. Kwakye A. A, *Understanding Tendering and Estimating*, Ashgate Publishing Limited
2. *The Aqua Group Guide to Procurement, Tendering and Contract Administration*, 2nd edition Mark Hackett and Gary Statham, Wiley-Blackwell

Unit Title	Commercial Management
Unit Code	CM501

Summary

Year	2
Unit	CM501
Status	core
Learning Hours	100hrs including Lectures and Group Exercises
Credits Value	10
Period of Study	8 weeks

Summary of Learning Outcomes

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- The professional competencies required by the ICES and the CIOB.

Learning outcomes are expressed under three broad headings of achievement in both threshold and typical standards:

U: Understanding (a general awareness of the activity)
K: Knowledge (a more detailed level of understanding of the activity)
S: Skills (to be able, without supervision, to perform relevant functions)

Learning outcomes: The learner will:	Assessment criteria: The Learner can:
1. Understand valuation and payment for construction projects (U,K,S)	1.1 Understand the valuation process for construction projects 1.2 Understand 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 (U,K,S)	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 Damages for late completion
3. Be able to apply appropriate principles in cash flow management (K,S)	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 (U,K)	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 (U,K,S)	5.1 Understand the principles of construction company organisation 5.2 Understand market planning in the construction industry
Additional information about the unit	
Units aim(s)	

Recommended Readings

1. John Uff, (2005) *Construction Law*, Sweet & Maxwell, 9th edition
2. *Harris, F. and McCaffer, R., (2013). Modern construction management. John Wiley & Sons.*
3. Powell, G. (2016) *Construction contract preparation and management: from concept to completion* 2nd Edition, Basingstoke, Hampshire: Palgrave Macmillan
4. William Godwin (2013), *International Construction Contracts A Handbook*, A John Wiley & Sons, Ltd., Publication
5. Harris, F. and McCaffer, R., 2013. *Modern construction management*. John Wiley & Sons.

Unit Title	Method of Measurement and Estimating
Unit Code	CM502

Summary

Year	2
Unit	CM502
Status	core
Learning Hours	100hrs including Lectures and Group Exercises
Credits Value	10
Period of Study	2 months

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U: Understanding (a general awareness of the activity)
K: Knowledge (a more detailed level of understanding of the activity)
S: Skills (to be able, without supervision, to perform relevant functions)

Learning outcomes: The learner will:	Assessment criteria: The Learner can:
1. Understand the estimation processes for a construction tender [K, U].	1.1 Organisation of the estimating function. 1.2 Procurement path. 1.3 Forms of contract. 1.4 Tender documentation. 1.5 Estimating methods.
2. Understand the importance of measurement in construction and able to use the method of measurement for the estimating process [K, S].	2.1 Quantity Surveying Techniques. 2.2 The Civil Engineering Standard Method of Measurement (CESMM4). 2.3 The Method of Measurement for Highway Works (MMHW). 2.4 RICS New Rules of Measurement (NRM) 2.5 Specifications.
3. Able to produce an estimate for a construction tender and for a given construction project in a standard industry format [S].	3.1 Resource Costs – Labour, Plant & Material. 3.2 Provisional Sums & Day works. 3.3 Preliminaries. 3.4 Unit Rate Pricing. 3.5 Risks, Opportunities & Fluctuations. 3.6 Completing the Estimate & Final Tender Review.
Additional information about the unit	
Units aim(s)	

Text Book

1. Martin Brook's *Estimating and Tendering for Construction* Work by Elsevier Butterworth-Heinemann 3rd Edition

Recommended Reading

1. Thomas Telford Publishing for permission to quote for the *ICE Conditions of Contract* 7th Edition
2. *Measurement using the New Rules of Measurement* by Sean D C Ostrowski
3. *Managing with the MMHW* by Hamish Mitchell
4. *Building Measurement* by A D Packer which covers SMM7, superseded by NRM2 but of course you are still likely to find it in contracts in progress

Unit Title	Contract Administration
Unit Code	CM503

Summary

Year	2
Unit	CM503
Status	core
Learning Hours	100hrs including Lectures and Group Exercises
Credits Value	10
Period of Study	8 weeks

Summary of Learning Outcomes

Learning outcomes are results of learning that students will have achieved on successfully completing a course. The following reference points were used in designing the learning outcomes;

- QAA Subject Benchmark Statements to ensure: that appropriate and effective teaching, support, assessment and learning resources are provided for students; that the learning opportunities provided are monitored; and that the provider considers how to improve them; and

- The professional competencies required by the ICES and the CIOB.

Learning outcomes are expressed under three broad headings of achievement in both threshold and typical standards:

U: Understanding (a general awareness of the activity)
K: Knowledge (a more detailed level of understanding of the activity)
S: Skills (to be able, without supervision, to perform relevant functions)

Learning outcomes: The learner will:	Assessment criteria: The Learner can:
1. Understand the basis for contract administration	1.1 Understand the principles of contract law 1.2 Demonstrate knowledge of construction contracts and contract selection 1.3 Understand the roles and responsibilities under the contract
2. Forms of contract (K, U)	2.1 JCT Contracts 2.2 NEC contracts 2.3 FIDIC Contracts 2.4 Comparison of the different types of contracts
3. Contract administration and project performance (S, K)	3.1 Demonstrate knowledge of time management from a contractual perspective including extension of time and damages for late completion 3.2 Demonstrate knowledge of cost management from a contractual perspective 3.3 Demonstrate knowledge of quality management (materials and workmanship) from a contractual perspective
4. Valuation and payments (S, K)	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. Key areas in construction contracts (U,K,S)	5.1 Understand the concept of variations 5.2 Understand Bonds and Insurance 5.3 Demonstrate knowledge of claims and be able to prepare final accounts 5.4 Advice on dispute resolution (ADRs)
Additional information about the unit	
Units aim(s)	

Recommended Readings

1. Murdoch, J. and Hughes, W. (2008) *Construction Contracts Law and Management* 4th Edition, London: Taylor and Francis
2. Chappell, D (2007) *Understanding JCT Standard Building Contracts* 8th Edition Oxford:Taylor and Francis
3. Powell, G (2016) *Construction contract preparation and management: from concept to completion* 2nd Edition, Basingstoke, Hampshire: Palgrave Macmillan

4. Sime, Stuart; Browne, Julie; Blake, Susan (2014) *A practical approach to alternative dispute resolution,* Oxford: Oxford University Press
5. Uff, J (2013) *Construction law: law and practice relating to the construction industry,* 11th edition, London : Sweet & Maxwell
6. ICE (2005) *NEC3 Engineering and Construction Contract (ECC),* London:ICE

Unit Title	Cost Management
Unit Code	CM504

Summary

Year	2
Unit	CM504
Status	core
Learning Hours	200 hrs including GLH (Lectures and Group Exercises) and Independent Study
Credits Value	20
Period of Study	8 weeks

Summary of Learning Outcomes

Learning outcomes are results of learning that students will have achieved on successfully completing a course. The following reference points were used in designing the learning outcomes;

- QAA Subject Benchmark Statements to ensure: that appropriate and effective teaching, support, assessment and learning resources are provided for students; that the learning opportunities provided are monitored; and that the provider considers how to improve them; and

- The professional competencies required by the ICES and the CIOB.

Learning outcomes are expressed under three broad headings of achievement in both threshold and typical standards:

U: Understanding (a general awareness of the activity)
K: Knowledge (a more detailed level of understanding of the activity)
S: Skills (to be able, without supervision, to perform relevant functions)

Learning outcomes: The learner will:	Assessment criteria: The Learner can:
1. Cost Management in construction (U,K)	1.1 Explain the sources of cost on construction projects 1.2 Understand the basis for cost control on construction projects
2. Cost Control and Cost Planning (K,S)	2.1 Be able to 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. Understand productivity and cost control (K,S)	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 dairy for monitoring progress of construction works
5. Resource Management on construction projects (K,S)	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
Additional information about the unit	
Units aim(s)	

Recommended Readings

1. Potts, K. and Ankrah, N. (2014) Construction Cost Management – Learning from Case Studies, 2nd Ed.
2. Baldwin, A. and Bordoli, D. (2014) A Handbook for Project Planning and Scheduling; Chichester: Wiley Blackwell
3. Cooke, B and Williams, P. (2009) Construction Planning, Programming and Control, 3rd edition; Oxford: Blackwell
4. Harris F. and McCaffer R. (2013) Modern Construction Management. 7 Ed. Blackwell Science Publishing: Oxford.
5. Winch, G. (2010) Managing Construction Projects: an information processing approach. 2nd ed. Wiley-Blackwell: Chichester.

Unit Title	Value Engineering
Unit Code	CM505

Summary

Year	2
Unit	CM505
Status	core
Learning Hours	100hrs including Lectures and Group Exercises
Credits Value	10
Period of Study	2 months

Summary of Learning Outcomes

Learning outcomes are results of learning that students will have achieved on successfully completing a course. The following reference points were used in designing the learning outcomes;

- QAA Subject Benchmark Statements to ensure: that appropriate and effective teaching, support, assessment and learning resources are provided for students; that the learning opportunities provided are monitored; and that the provider considers how to improve them; and

- The professional competencies required by the ICES and the CIOB.

Learning outcomes are expressed under three broad headings of achievement in both threshold and typical standards:

U: Understanding (a general awareness of the activity)
K: Knowledge (a more detailed level of understanding of the activity)
S: Skills (to be able, without supervision, to perform relevant functions)

Learning outcomes: The learner will:	Assessment criteria: The Learner can:
1. Be able to implement value management for construction projects [K, U].	1.1 Application of value management and implementing a value management programme. 1.2 Optimizing the benefits of joint venture projects and re-engineering the procurement process.
2. Understand value engineering procedure [K].	2.1 Elements of value engineering and selection. 2.2 Analysis, teamwork, procedures, information, speculation, evaluation, investigation and planning, implementation and summary.
3. Be able to prepare interim certificates and payments [K, S].	3.1 Valuation of preliminaries, provisional work, measured work and variations and extras. 3.2 Valuation of nominated sub-contractors and suppliers work, fluctuations, unfixed materials and retention. 3.3 Components of interim certificates and payments.
4. Be able to valuate materials for construction projects [K, S].	4.1 Material requisition, bill of materials and methods of materials. 4.2 Inflation.
5. Understand objectives and principle of value analysis in construction projects [U, K].	5.1 Objectives and principles of value analysis and participants in value analysis. 5.2 The Value Analysis Process.
Additional information about the unit	
Units aim(s)	

References and Further Readings

1 Hackett, M, Robinson, I & Statham, G (2007) *Procurement, Tendering & Contract Administration*, Oxford, The Aqua Group and Blackwell Publishing.
2 Ivor Seeley (1997), *Quantity Surveying Practice*, MacMillan.

Unit Title	Construction Claims and Dispute Resolution
Unit Code	CM506

Summary

Year	2
Unit	CM506
Status	core
Learning Hours	100hrs including Lectures and Group Exercises
Credits Value	10
Period of Study	8 weeks

Summary of Learning Outcomes

Learning outcomes are results of learning that students will have achieved on successfully completing a course. The following reference points were used in designing the learning outcomes;

- QAA Subject Benchmark Statements to ensure: that appropriate and effective teaching, support, assessment and learning resources are provided for students; that the learning opportunities provided are monitored; and that the provider considers how to improve them; and

- The professional competencies required by the ICES and the CIOB.

Learning outcomes are expressed under three broad headings of achievement in both threshold and typical standards:

U: Understanding (a general awareness of the activity)
K: Knowledge (a more detailed level of understanding of the activity)
S: Skills (to be able, without supervision, to perform relevant functions)

Learning outcomes: The learner will:	Assessment criteria: The Learner can:
1. Understand and knowledge of basis of Claims [U].	1.1 Types of claims. 1.2 Implied terms, Variation of contract, omission of work to give it to others, Extra work, Possession of Site, Site conditions.
2. Understand and knowledge in types of claims and science behind the contractor's claims [U, K].	2.1 Common law claims, ex gratia claims, and contractual claims. 2.2 Fluctuations claim, claims for extensions of time, claims for loss and/or expense, global claims
3. Understand and knowledge of claims under forms of contract [U, K].	3.1 Claims for variations. 3.2 Claims for extensions of time. 3.3 Claims for additional payment due to prolongation, acceleration and disruption claims. 3.4 Interim and final claims.
4. Be able to Identify and recognise relevant issues and preparation of claims arising out by possible problems [K, S].	4.1 Common occurrences, cause and effect, allocation of culpability and counter claims. 4.2 Analytical methods and evaluation techniques, delay, prolongation, acceleration, mitigation and disruption.
5. Understand and knowledge of contract documents and form of contacts [K, U].	5.1 Contract Documents. 5.2 Forms of contracts.
6. Able to prepare and defend effective claims [K, S].	6.1 Standard Forms and Applications. 6.2 Research in objectives and methods, focus Areas, trends and trails, data basing and process. 6.3 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 [U, K].	7.1 Negotiation and mediation. 7.3 Conciliation. 7.4 Adjudication. 7.5 DAB (Dispute Adjudication Board). 7.6 Arbitration.
Additional information about the unit	
Units aim(s)	

References and Further Reading

1. Chappell, David (David M.) *Building Contract Claims*. – 5th edition.

2. Eggleston, Brian, *CEng. Liquidated damages and extensions of time in construction contracts*. – 3rd edition.