College of Contract Management
United Kingdom

Advanced Diploma in Quantity Surveying

Syllabus

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1. Course Structure and Rules of Combination

1.1 Rationale

Advanced Certificate in Quantity Surveying

This Level 4 Advanced Certificate in Quantity Surveying has been designed for students who are interested in starting a career in the construction sector or are currently progressing into a quantity surveying or commercial management role. This qualification develops the learner's knowledge and skills in designing and developing projects, liaising with stakeholders and overseeing small to medium construction projects safely and efficiently.

Advanced Diploma in Quantity Surveying

The Level 5 Advanced Diploma in Quantity Surveying is designed for students who currently work in the construction sector and are currently working towards progressing into a quantity surveying or commercial management role. This qualification develops the learner's knowledge and skills furthering their ability to design and develop projects, liaise with stakeholders and oversee large or complex construction projects safely and efficiently. The Level 5 Advanced Diploma in Quantity Surveying 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.

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 Qualification Progression

This course provides the underpinning knowledge and understanding for the Advanced Diploma in Quantity Surveying. It enables students to study towards a university degree, as once they achieve the Level 5 Advanced Diploma they can progress to our partner universities and study for a Bachelor's Degree through a 2-year top-up course.

1.3 Course Rules of Combination

The course is comprised of two qualifications; the Level 5 Advanced Certificate in Quantity Surveyingand the Level 5 Advanced Diploma in Quantity Surveying.

The course can be completed in 2 years (approximately 24 months) and includes an assessment at the end of each module. Each module is worth 10 credits.

Year 1:

- Fundamentals of Engineering Drawings
- Construction and Civil Engineering Technology
- Managing Sustainable Construction
- Construction Project Scheduling
- Methods of Measuring and Estimation
- Tendering and Procurement Process

Year 2:

- Construction Contract Law
- Cost Planning and Control
- Pre-Contract Administration
- Post-Contract Administration
- Value Engineering
- Construction Claims and Dispute Resolution

To achieve the Level 4 Certificate, candidates are required to undertake:

- All six modules from Year 1

To achieve the Level 5 Diploma, candidates are required to undertake:

- All 12 modules - 6 modules from Year 1 & 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

1. All submission of assessments must include:
   a. a copy of the full brief given by the Examinations Officer or Course Administrator;
   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 Examination Officer or Course Administrator.
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 modules if the content of the assessment are deemed be plagiarised** as set out in the rules and regulations of the College.
4. 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.
5. Whenever a candidate submits work after the approved deadline without an authorised extension, a maximum "Pass" grade will be awarded.
6. The Assessor will comment on the quality of the work for learning purposes.
7. 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 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 tables below:

Level 4 Advanced Certificate in Quantity Surveying

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	
14	**Merit**
13	
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 modules to be awarded the Certificate.

Level 5 Advanced Diploma in Quantity Surveying — 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	
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 modules to be awarded the Diploma.

1.10 Mandatory Modules

Module Reference	Title	Credit Value	LH
QS401	Fundamentals of Engineering Drawings	20	200
QS402	Construction and Civil Engineering Technology	20	200
QS403	Managing Sustainable Construction	20	200
QS404	Construction Project Scheduling	20	200
QS405	Method of Measurement and Estimating	20	200
QS406	Tendering and Procurement Process	20	200
Year 2			
QS501	Construction Contract Law	20	200
QS502	Cost Planning and Control	20	200
QS503	Pre-Contract Administration	20	200
QS504	Post-Contract Administration	20	200
QS505	Value Engineering	20	200
QS506	Construction Claims and Dispute Resolution	20	200

QS401: Fundamentals of Engineering Drawings

Learning outcomes: The learner will	Assessment criteria: The learner can
1. Have a sound understanding in engineering language and fundamental drawings and design principle.	1.1 Identify 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.	2.1 Determine the purpose of construction drawing, drawing lines and shapes, views and dimensions. 2.2 Assess the representation of materials, doors, windows, and first and third angle projection. 2.3 Understand construction details in relation to functional elements of the design
3. Apply the features and functions of typical CAD systems for producing CAD drawings.	3.1 Understand 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. Understand BIM Tools and of the technical, process and collaborative aspects of the use of BIM on projects.	4.1 Understand the basics of BIM Tools. 4.2 Determine quantification using the BIM Process. 4.3 Apply BIM in costing applications. 4.4 Prepare a BIM execution plan and implement of a BIM management process. 4.5 Maintain an information model. 4.6 Implement contractual aspects of BIM such as separate protocol.

Recommended Reading

1. Bichard, A. and Styles, K. (2004) *Working Drawings Handbook.* 4th ed. Routeledge
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
4. *A Technical Review of BIM Based Cost Estimating in UK Quantity Surveying Practice, Standards and Tools*. http://www.itcon.org

QS402: 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 Understand risk assessment. 1.2 Demonstrate awareness of management plans 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. 1.5 Assess and manage actual or anticipated health, safety and environmental risks. 1.6 Evaluate appropriate environmental assessment methodologies.
2. Understand health, safety and environmental law and obligations in construction and the application of current Construction Design and Management (CDM) regulations.	2.1 Demonstrate knowledge and understanding of the principles and responsibilities imposed by law, codes of practice and other regulations. 2.2 Provide appropriate construction projects. 2.3 Identify HSE hazards in construction. 2.4 Carry out emergency management procedures in accident preventions and investigations. 2.5 Identify and apply the legislation, standards and best practice to prevent accidents. 2.6 Navigate Reporting of Injuries, Diseases and Dangerous Occurrences Regulations (RIDDOR). 2.7 Evaluate health and safety management systems. 2.8 Identify obligations of all parties involved in construction according to the HSE law.
3. Understand foundations and substructure and able to design and operate with suitable technology.	3.1 Identify types of foundation (e.g. reinforced strip, piles, raft foundations). 3.2 Understand basement construction. 3.3 Assess excavations and ground works. 3.4 Determine ground stabilization including grouting, consolidation, compaction, timbering and contaminated soil.
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 types of frames in multi storey buildings and civil engineering construction. 4.2 Use sustainable technologies in multi storey buildings and civil engineering construction. 4.3 Understand exterior envelope of multi storey buildings including precast concrete, rain screen, cladding masonry and curtain walling. 4.4 Competently use building and civil engineering materials, and selection. 4.5 Record building performance service life, installation and building materials performance.

5. Understand the technology in design process of the built environment.	5.1 Identify stages of design from inception to completion. 5.2 Identify architectural innovations. 5.3 Understand environmental legislations and environmental sustainability. 5.4 Investigate CDM Regulations. 5.5 Understand planning and Building Regulations. 5.6 Determine social, political, cultural and other impacts in construction design. 5.7 Identify various design process for different types of buildings. 5.8 List and meet disability requirements. 5.9 Act on operational and maintenance processes post contract.
6. Select and operate building services and systems in a multi stories building.	6.1 Report on heating and ventilation. 6.2 Maintain fire safety and building security requirements. 6.3 Identify 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

QS403: 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. Understand how the selection and use of materials and products can contribute to sustainable construction.	2.1 Understand the development and basis for the principle of sustainability. 2.2 Evaluate the use of sustainable materials and products for a given construction project. 2.3 Assess the lifecycle costs of materials and products for a given project. 2.4 Produce a sustainable procurement strategy for a given construction works. 2.5 Explain how the process of installing building services may affect the energy performance of the completed project. 2.6 Explain to the end user how to sustain the optimum performance of a construction project. 2.7 Demonstrate knowledge and understanding of why and how sustainability seeks to balance economic, environmental and social objectives on construction projects.
3. Understand how to manage the installation of low carbon technologies for construction projects, following industry best practice.	3.1 Explain the operation of low carbon technology installations following manufacturer's instructions. 3.2 Report on the responsibilities of the site manager for planning and scheduling the installation of low carbon technologies. 3.3 Determine 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 Assess the 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

QS404: Construction Project Scheduling

Learning outcomes: The learner will	Assessment criteria: The learner can
1. Understand the types of documents that are used for project planning.	1.1 Evaluate the types of documents used for project planning to ascertain their importance to the planning work. 1.2 Explain the processes for dealing with inaccurate and missing information.
2. Produce a method statement for the works.	2.1 Produce a method statement with reference to drawings, specifications and other documents relating to proposed construction.
3. Produce a coherent and complete programme for the works.	3.1 Produce a programme for the works. 3.2 Demonstrate knowledge and understanding of the principles of design and construction. 3.3 Understand the process of constructing the works.
4. Understand how site inspection findings influence the execution of construction works.	4.1 Explain how site inspection findings affect the feasibility of the proposed plans.
5. Determine resource requirements for construction works.	5.1 Assess the quantities and qualities of materials needed for the work. 5.2 Determine the plant and equipment needed for the work. 5.3 Manage and report on the labour needed for the work, including sub-contractors.
6. Produce projects in Primavera P6.	6.1 Understand overview and navigation. 6.2 Create new projects. 6.3 Import and export projects. 6.4 Create WBS (Work Breakdown Structure). 6.5 Add and manage activities to the WBS, creating relationships, CPM (Critical Path Method), total float, assigning constraints and scheduling. 6.6 Define resources and roles, analysing resource performance, and adding resources and costs to the schedule.

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. Harris, P. (2008) *Project Planning and Scheduling using Primavera P6.* Eastwood Harris Pty Ltd.
4. Oracle. (n/a) *Primavera Project Management P6, Reference Manual.* Version 7.0
5. State of California Department of Transportation. (2011) *Project Scheduling with Primavera P6 Training Manual.*

QS405: 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 Understand the organisation of the estimating function. 1.2 Document the procurement path. 1.3 Evaluate forms of contract. 1.4 Manage tender documentation. 1.5 Implement a variety of estimating methods.
2. Understand the importance of measurement in construction and able to use the method of measurement for the estimating process.	2.1 Apply quantity surveying techniques and the quantification of construction works. 2.2 Use the Civil Engineering Standard Method of Measurement (CESMM4). 2.3 Use the Method of Measurement for Highway Works (MMHW). 2.4 Understand RICS New Rules of Measurement (NRM) 2.5 Assess specifications.
3. Produce an estimate for a construction tender and for a given construction project in a standard industry format.	3.1 Carry out the costing of construction works by resource Costs — Labour, Plant & Material. 3.2 Prime costs, provisional sums and day works. 3.3 Assess preliminaries. 3.4 Support building up rates from first principles. 3.5 Implement unit rate pricing. 3.6 Asses risks, opportunities and fluctuations. 3.7 Support completing the estimate and final tender review. 3.8 Assess cashflow forecasts.
4. Understand the estimation processes for a construction tender.	4.1 Identify the purpose of key contract documents in producing an estimate for a construction tender. 4.2 Use of the standard method of measurement used for the tendering process. 4.3 Produce an estimate for a given construction project in a standard industry format.

Text Book

1. Brook, M. (2004) *Estimating and Tendering for Construction Work.* 3rd ed. Butterworth-Heinemann.

Recommended Reading

1. Ostrowski, S. (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. Routeledge.
4. Thomas Telford Publishing for permission to quote for the ICE Conditions of Contract 7th ed.

QS406: 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. 1.4 Monitor codes of practice and procedures commonly used.
2. Understand how construction work is procured.	2.1 Determine how client needs influence choice of procurement method. 2.2 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). 2.3 Comprehend risk allocation and contractual relationship created through different procurement routes. 2.4 Discuss how tendering processes are used to establish contract price.
3. Understand tender documentation and the bid process in construction projects.	3.1 Analyse the tendering process and tender Action. 3.2 Clarify the competitive bidding under risk and budgetary control. 3.3 Describe the sequence of successful tender submissions.
4. Evaluate tenders to award successful contractor.	4.1 Explain the evaluation and comparison of bids process including contractors' queries, late tenders, errors, omissions and adjustment to tenders. 4.2 Illustrate the negotiation processes such as single and two stage tendering, involved in procurement, the use of codes of practice and e-tendering. 4.3 Resolve 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. Hughes, W., Hillebrandt, P., Greenwood, D. and Kwawu, W. (2006) *Procurement in the Construction Industry.* Routeledge.
3. Hackett, M., ed. and Statham, G., ed. (2016) *The Aqua Group Guide to Procurement, Tendering and Contact Administration.* 2nd ed. Wiley-Blackwell.

QS501: Construction Contract Law

Learning outcomes: The learner will	Assessment criteria: The learner can
1. Become familiar with construction contracts and responsibilities of contracting parties.	1.1 Grasp the importance of a written contract, clarity and certainty, and procedures. 1.2 Comprehend terms of a construction contract, risk allocations and approaches. 1.3 Register the role of participants.
2. Understand the principles of contract law and their application.	2.1 Understand basic contract law and legislation. 2.2 Identify the nature of contracts and types of contracts. 2.3 Assess executed and executory contracts, courts system in England and Wales, valid contract, tort, and letter of intent. 2.4 Produce contract documentation.
3. Demonstrate a basic knowledge of nature and significance of law and legislation as applied to the construction process.	3.1 Comprehend JCT, NEC, FIDIC and other forms of contracts. 3.2 Understand and use Bespoke contracts. 3.3 Assess classification of express terms, conditions and warranties and innominate terms. 3.4 Modify clauses in standard forms of contract and sub-contract. 3.5 Comprehend implied terms and acceptance. 3.6 Demonstrate an understanding of contract conditions and allocation of risks.
4. Demonstrate knowledge in employment legislation, health and safety law and its applicability to construction projects.	4.1 Understand employer's liability for injuries to their employees, health and safety regulations, and employment legislation. 4.2 Assess regulations, rights and duties of the parties to the contract.
5. Apply appropriate principles of construction management, law and ethics.	5.1 Comprehend general contractual provisions such as insurances, retention, taxation and bonds. 5.2 Assess damages for late completion. 5.3 Understand delay on programme or in progress. 5.4 Identify purposes of extension provisions and apportionment of extensions.

Recommended Reading

1. Godwin, W. (2013) *International Construction Contracts: A Handbook.* John Wiley & Sons.
2. Uff, J. (2005) *Construction Law.* 9th ed. Sweet & Maxwell.

QS502: Cost Planning and Control

Learning outcomes: The learner will	Assessment criteria: The learner can
1. Understand the basics of company accounts, including turnover and profit/loss.	1.1 Identify the Contractor's business needs, creation of clients, profit making, provision of good product, level of turnover and business finance.
2. Understand internal accounting controls in construction companies.	2.1 Manage costs and profits, managing cash flows, construction accounting systems, general ledger and method of accounting. 2.2 Identify assets and liabilities.
3. Gain a comprehensive understanding of the development of a cost plan.	3.1 Determine method of estimating for cost planning. 3.2 Assess sources of cost information. 3.3 Make adjustments to cost data for factors including location, specification, time and market forces. 3.4 Identify standard forms of cost planning and cost control. 3.5 Implement pre-contract cost planning process and cost control. 3.6 Demonstrate an understanding of efficiency of labour and plant and increasing productivity. 3.7 Discern materials and cost of transport. 3.8 Figure out calculation of unit rates. 3.9 Produce cost plans.
4. Comprehend cost control in building design and construction.	4.1 Identify the importance of control over expenditure, traditional costing procedure; cost control during inception, feasibility and outline proposal. 4.2 Assess cost control during scheme design and during detail design. 4.3 Understand initial cost appraisal for design and construction. 4.4 Understand factors affecting design economics over the life of a building. 4.5 Apply value engineering processes. 4.6 Report on cost monitoring and overruns.
5. Understand the cost of construction firms, Prime costs and provisional sums.	5.1 Register short-run costs, fixed costs and variable costs. 5.2 Identify provisional sums for defined and undefined works and works by statutory authorities.
6. Gain skills in developing reports for construction cost control and planning and cost analyses.	6.1 Understand principles of cost control, implementation of design cost control, principal factors in cost planning, cost planning techniques and cost modelling. 6.2 Assess tender cost analysis. 6.3 Report on cost analyses, cost indices, cost limits and post-contract cost control. 6.4 Identify differences between cost control and cost management.

Recommended Reading

1. Kirkham, R. (2014) *Ferry and Brandon's Cost Planning of Buildings.* 9th ed. Wiley Blackwell.
2. Flanagan, R. and Tate, B. (1997) *Cost Control in Building Design.* Wiley Blackwell.
3. Seely, I.H. (1989) *Advanced Building Measurements.* Macmillan
4. Ashworth, A. (2008) *Pre-Contract Studies: Development Economics, Tendering, and Estimating.* 3rd ed. Blackwell.

QS503: Pre-Contract Administration

Learning outcomes: The learner will	Assessment criteria: The learner can
1. Examine and report on tenders.	1.1 Interpret arithmetical and pricing errors, tenders based on bills of approximate quantities, drawings and specifications and 'ad hoc' schedule of rates. 1.2 Report on tenders and dealing with errors.
2. Perform tender documentation and bid process.	2.1 Complete pre-tender activities. 2.2 Manage inviting and processing tenders. 2.3 Produce and compile tender documentation (TN — letter of invitation, forms of tender, health and safety documentation, design documentation and contractual details). 2.4 Produce pricing documents. 2.5 Review on contract documents and preparing of enquiry documents. 2.6 Produce tender evaluation and the selection of the successful contractor.
3. Demonstrate a basic knowledge and understanding in pre-contract documentation.	3.1 Identify types of contract documents. 3.2 Manage information and communications systems.
4. Understand the impact of legislation on construction works.	4.1 Gain awareness of the influence of planning regulations on construction activities. 4.2 Assess the requirements of building regulations for construction works. 4.3 Comprehend how the legal rights of external parties may impact on construction works. 4.4 Identify the contractual responsibilities of individual parties, including the quantity surveyor in a construction project.
5. Demonstrate a knowledge of the different types of construction insurance, warranties and bonds.	5.1 Master construction bonds. 5.2 Determine Construction insurances. 5.3 Assess collateral warranty and practical considerations of warranties. 5.4 Identify guarantees. 5.5 Report on building codes. 5.6 Assess defects. 5.7 Identify breach of Contracts and remedies.

References and Further Reading

1. Powell, G. (2016) *Construction Contract Preparation and Management: From Concept to Completion.* 2nd ed. Palgrave Macmillan.
2. Ramus, J.W., Birchal, S. and Griffiths, P. (1998) *Contract Practice for Surveyors.* Butterworth-Heinemann.
3. Kwakye, A.A. (1994) *Understanding Tendering & Estimating*. Gower Publishing Company.
4. Smith, A. J. (1995) *Estimating, Tendering & Bidding for Construction.* Macmillan.

QS504: Post-Contract Administration

Learning outcomes: The learner will	Assessment criteria: The learner can
1. Deal with variations.	1.1 Comprehend variations accounts and valuing variations. 1.2 Identify additional expenses arising from variations and Use of erroneous rates. 1.3 Change control procedures. 1.4 Quantify preliminaries, overheads, profit and professional and other fees within variations. 1.5 Issue instructions relating to variations, prime cost sums and making good defects.
2. Administrate construction processes, meetings and reporting procedures.	2.1 Initiate construction kick-off meeting. 2.2 Administer construction progress meetings and progress reports. 2.3 Understand defect reporting procedures. 2.4 Issue necessary notices according to the contractual requirements. 2.5 Determine contractual provisions such as early possession and practical completion and their impact on the roles of the parties to the contract.
3. Understand of what constitutes Settlement Agreements and auditing of final accounts.	3.1 Identify constituents of final accounts. 3.2 Action adjustments of prime cost sums, provisional sums, approximate quantities claims, fluctuations in costs of labour and materials, etc. 3.3 Create a summary of the account. 3.4 Manage the final certificate and effect of the final certificate.
4. Prepare certificates and payments.	4.1 Take part in the valuation of preliminaries, provisional work, measured work and variations and extras. 4.2 Take part in the valuation of nominated sub-contractors and suppliers work, fluctuations, unfixed materials and retention. 4.3 Produce interim payments. 4.4 Produce interim certificates and final completion Certificate. 4.5 Understand sectional completion and retention. 4.6 Identify components of interim certificates and payments.
5. Prepare Cash-flow forecasts.	5.1 Prepare cash-flow calculations and forecast. 5.2 Use cost management systems (CMS).

References and Further Reading

1. Kwakye, A.A. (1997) *Construction Project Administration in Practice*. Wesley Longman.
2. Powell, G. (2016) *Construction Contract Preparation and Management: From Concept to Completion.* 2nd ed. Palgrave Macmillan.
3. Ashworth, A. and Hogg, K. (2007) *Willis's Practice and Procedure for the Quantity Surveyor.* 12th ed. Blackwell.
4. Ramus, J.W., Birchal, S. and Griffiths, P. (1998) *Contract Practice for Surveyors.* Butterworth-Heinemann.

QS505: Value Engineering

Learning outcomes: The learner will	Assessment criteria: The learner can
1. Implement value management for construction projects.	1.1 Comprehend the application 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 Identify the elements of value engineering and selection. 2.2 Report on analysis, teamwork, procedures, information, speculation, evaluation, investigation and planning, implementation and summary.
3. Evaluate materials for construction projects.	3.1 Evaluate material requisition, bill of materials and methods of materials. 3.2 Assess unfixed materials on/off site. 3.3 Deduce reasons for inflation.
4. Understand whole life costing for construction works.	4.1 Apply the principles of whole life costing to construction projects. 4.2 Determine the influence of whole life costing on value engineering of construction projects.
5. Comprehend and carry out risk management.	5.1 Implement risk management as applied to construction projects. 5.2 Prepare risk register for proposed construction projects. 5.3 Perceive the likely impacts of risks on proposed projects.
6. Understand objectives and principle of value analysis in construction projects.	6.1 Assess objectives and principles of value analysis and participants in value analysis. 6.2 Manage 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.

QS506: Construction Claims and Dispute Resolution

Learning outcomes: The learner will	Assessment criteria: The learner can
1. Understand and have knowledge of basis of Claims.	1.1 Determine 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. Determine 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 Manage fluctuations claim, claims for extensions of time, claims for loss and/or expense, global claims.
3. Understand and have knowledge of claims under forms of contract.	3.1 Identify claims for variations. 3.2 Apprehend claims for extensions of time. 3.3 Register claims for additional payment due to prolongation, acceleration and disruption claims. 3.4 Assess and understand interim and final claims.
4. Identify and recognise relevant issues and preparation of claims arising out by possible problems.	4.1 Identify common occurrences, cause and effect, allocation of culpability and counter claims. 4.2 Use analytical methods and evaluation techniques, delay, prolongation, acceleration, mitigation and disruption.
5. Prepare and defend effective claims.	5.1 Comprehend standard Forms and Applications. 5.2 Research in objectives and methods, focus areas, trends and trails, data basing and process. 5.3 Manage head of claims, development of claims, procedures or processes of claims. 5.4 Review and analysis of claim and presentation. 5.5 Assess risk factors which may lead to the formulation of a contractual or extra- contractual claim.
6. Understand team working, conduct rules, ethics and professional practice.	6.1 Monitor personal professional role and society's expectations of professional practice. 6.2 Manage rules of conduct and regulations, including the general principles of law and the legal system, as applicable in the country of practice. 6.3 Demonstrate knowledge of the principles, behaviours and dynamics of working in a team. 6.4 Identify the principles and practice of client care in the area of practice.
7. Apply dispute avoidance and alternative dispute resolution processes.	7.1 Assess communication and negotiation including effective oral, written, graphic and presentation skills. 7.2 Determine mediation. 7.3 Report on conciliation. 7.4 Comprehend adjudication. 7.5 Recognise DAB (Dispute Adjudication Board). 7.6 Interpret arbitration.

References and Further Reading

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