

THE EDUCATION FRAMEWORK

FOR MASTERS' DEGREE PROGRAMMES

2019
EDITION

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SECTION 1

General Information about the CIOB

1.1 About the CIOB

The Chartered Institute of Building (CIOB) represents the most diverse set of professionals in the construction industry on behalf of the public. Having a wide and inclusive view of the construction management discipline, the CIOB sets the pace globally for high standards of professionalism in the built environment. This is accomplished through the sponsorship of leading research and through the accreditation of academic awards demonstrating the highest academic and vocational standards.

1.2 About the Education Framework

The Education Framework sets out the CIOB published standards for higher education awards in construction management in the UK and across the world. The framework is for teaching institutions when reviewing existing programme content, for CIOB accreditation purposes or as a reference document when designing a new programme. The Education Framework is based on external references such as the UK Quality Assurance Agency benchmarks and National Occupational Standards. QAA benchmarks can be accessed at www.qaa.ac.uk.

1.3 About CIOB Accreditation

CIOB Accreditation is a seal of approval for the teaching institute and for the programme signifying that the highest standards of quality are met in the teaching institute and the learning outcomes of the programme. The CIOB accredits a wide range of courses from sub degree programmes to degree and post graduate awards in the built environment in the UK and across the world. For further information on the accreditation process please contact the Accreditation Officer at educationadmin@ciob.org.uk or visit our web page at: www.ciob.org/Your-Career/ciob-accredits-degree-qualifications.

1.4 CIOB Routes to Membership

Graduates of accredited Masters' Degree programmes are granted full exemption and may proceed to Chartered Membership through the Professional Development

Programme or by demonstrating competence through their work experience. All candidates for Chartered Membership are required to pass the Professional Review. For further information on the Professional Development Programme please visit our website at the link below: www.ciob.org/become-a-member/professional-development-programme

SECTION 2

General Information about Masters' Degree Programmes

2.1 The Definition of Construction Management

The CIOB embraces a range of Masters' Degree programmes from those which have a broad coverage to those with a specialised focus. For all Masters' Degree programmes in the built environment, the typical generic learning outcomes are shown in Section 3.1, the skills are shown in Section 3.2 and the requirements of the dissertation/work-based project are shown in Section 3.3. The CIOB does not see these requirements as prescriptive and welcomes the opportunity to accredit programmes with their own structure and content.

2.2 Specialist Masters' Degree Programmes

The wide range of activities undertaken by construction professionals means that the CIOB accreditation process must accommodate programmes designed to address those wide range of activities. It is inappropriate to define all of these professional activities within The Education Framework but for guidance a range of additional learning outcomes for a Corporate & Commercial Management programme is shown in Section 4.1 Project Management, 4.2 Design/Architectural/Engineering Management, 4.3 and Facilities Management/Building Surveying, 4.4. The CIOB welcomes the opportunity to accredit other programmes designed to address other specialisms.

2.3 Entry to Masters' Degree Programmes

It is recognised that Masters' Degree programmes would have a range of entry requirements, including those appropriate for entrants without a first/bachelors Honours degree in a built environment subject. For these entrants a range of additional learning outcomes may be appropriate and for general guidance these are shown in Section 3.4.

SECTION 3 The CIOB Education Framework Requirements

3.1 Core Learning Outcomes

The generic learning outcomes apply to all Masters' Degree programmes in the built environment. Quality Assurance Agency benchmarks and National Occupational Standards are implicit in the outcomes. The UK Quality Assurance Framework for Higher Education can be accessed at: www.qaa.ac.uk/quality-code/qualifications-and-credit-frameworks#

Learning Outcome	Indicative Range of Subjects
To be able to examine the nature of the built environment and the construction industry and appraise the collaboration of professional disciplines in a national and international environment.	The built environment as a response to social and economic need and its relationship to the natural environment. The evolving structure of the construction and property industries. Composition of the construction market.
To be able to critically analyse the effective management of the construction process and the environmental, economic and social impacts within a global context	The RIBA current plan of work stages and the role of the construction manager at each stage. The impact that best practice construction management can have on the environment, economy and corporate social responsibility.
To be able to examine the legal (local and global) context of the construction and property industries.	Professional responsibilities. Legal regulation of development. Statutory controls, contract and tort including health and safety.
To be able to appraise construction and property organisations and the roles and responsibilities within and between them.	Project/role definition, team selection, target setting. Operational/production control, feedback, and analysis.
To be able to analyse organisational and management processes.	Management and organisational theory, human resource management, inclusivity and diversity. Finance, economics, marketing. Benchmarking, identifying the need for change, strategic development, change management.
To be able to analyse, critically appraise and perform complex project decision-making and associated risk management in construction management.	Evaluating and managing risk - the use of models. Conceptual frameworks for rational decision-making in the construction / property industry. Integrating risk assessment into the decision-making process.
To be able to justify the relevance of construction management in the achievement of sustainable construction and low/zero carbon environments.	Origins, concept, definitions, and developments of sustainability at national and international levels. Functions, operation and critical evaluation of environmental assessment tools – BREEAM, LEED, Estidama, SKA rating.

To be able to demonstrate and appraise professional ethics and corporate social values and apply these to situations and choices.

The nature of professionalism and evaluation of issues confronting practicing professionals.
Professional integrity and the interaction of personal and corporate responsibility/values.
Commercialism, liability, change, risk.
Application of skills to obtain, analyse, interpret, evaluate and disseminate ethical, professional and corporate social responsibility issues.

To be able to examine critical and current issues in construction management as informed by research and practice and their application to new situations.

Informed by epistemological issues and leading edge research and practice across all aspects of construction management, including health and safety, and sustainability.

3.2 Skills Outcomes

The skills outcomes apply to all Masters' Degree programmes in the built environment.

Skills Outcome	Indicative Range of Subjects
To exhibit critical thinking and creativity.	Managing creative processes in self and others, organising thoughts, analysis, synthesis and critical appraisal. Capability to identify assumptions, evaluate statements in terms of evidence, detect false logic or reasoning, identify implicit value, define terms adequately and generalise appropriately.
To demonstrate complex problem solving and decision-making.	Establishing criteria using appropriate decision techniques. Identifying, formulating and solving strategic problems, ability to create, identify and evaluate options, ability to implement and review decisions.
To demonstrate effective communication skills.	Oral, written and presentation.
To demonstrate competency in the use of computer applications.	Textual/numerical documents, e-business, e-communication methods, web based data management, project management systems and collaborative working platforms.
To demonstrate leadership and performance management skills including those within a multidisciplinary context.	Leadership, delegation, teamwork, negotiation, decision-making, problem solving, foster and promote working relationships, develop methods of conflict avoidance and resolution. The analytical approach to non-routine problems, application of judgement to provide solutions, integrated teamwork and benefits.

3.3 Dissertation/Work-Based Project

The skills outcomes apply to Masters' Degree programmes in the built environment that include a dissertation/project element.

Skills Outcome	Indicative Range of Subjects
To demonstrate advanced research skills within contemporary construction management issues.	Definition of research question(s) from literature review and the application of research methods to produce a coherent argument in support of a hypothesis/question. To prepare and present a research project
To demonstrate the ability to select and apply appropriate ethical research methodologies.	Assessment and review of research methods, selection criteria, ethical approval, application and analysis techniques.
To analyse, synthesise and evaluate key issues affecting the built environment and develop innovative solutions.	Informed by epistemological and ontological issues and leading edge research and practice.
To acquire and analyse construction management data and information.	Application of skills to obtain, analyse, interpret, evaluate and disseminate construction management data and information linked to a question/hypothesis and formulate conclusions.
To demonstrate numeracy and quantitative skills.	Application of mathematical and statistical skills, interpretation, presentation, dissemination and evaluation.

3.3.1 For work based projects – additional skills

The skills outcomes apply to all Masters' Degree programmes in the built environment.

Skills Outcome	Indicative Range of Subjects
To demonstrate the ability to analyse industry practice.	Through the selection and application of appropriate ethical research methodologies, and through a process of critical reflection, analyse the selected practice problem.
To reflect on learning experience related to industry practice.	To cover the topics contained within the indicative core learning outcomes.

3.4 Non-Cognate Entrants (Additional Learning Outcomes)

Please note: the CIOB defines non-cognate as a qualification with no relevance to any aspect of the built environment discipline. The generic learning outcomes in 3.1, 3.2 and 3.3 apply to all Masters' Degree programmes in the built environment.

In the Part B Master's Application you will be required to demonstrate the additional support provided for non-cognate entrants with regards to this technical and contextual knowledge to underpin study at this level, for example pre-session reading or a foundation module that covers key subject areas like construction technology etc.

SECTION 4 Guidelines for Masters' Degree Programmes in Specialist Subjects

The additional learning outcomes below are for guidance only and can be used in programme design and competency mapping. The CIOB Accreditation Panel will consider for accreditation further specialist Masters' Degree programmes that may differ to the suggested learning outcomes in this section of The Education Framework e.g. Facilities Management, Building Control, BIM.

4.1 Additional Guidelines for Masters' Degrees in Quantity Surveying and Commercial Management

Learning Outcome	Indicative Range of Subjects
To be able to critically assess the technical aspects of corporate and commercial management.	Complex issues of legal and financial management both for an organisation and a project. Financial planning, objective setting, business growth, bidding strategy, market intelligence, strategic development and management of change. Preparing tender documents, setting and managing a project budget
To be able to appraise and apply the legal aspects of corporate and commercial procedures within a complex global construction context.	Company and partnership law in joint ventures, PPP and other special purpose vehicles. Critical appraisal of contract and client relationships. Contract set up, operation, completion, determination, settlement of accounts, claims, dispute resolution and case law.
To be able to design and evaluate a property development strategy.	Owner, user, community, environmental considerations. Development, acquisition, disposal, the capital and property asset market; design evaluation, value engineering, risk management, planning gain, sources of finance, property life cycle
To be able to perform advanced strategic corporate management skills.	This outcome could be achieved in the context of a real or simulated project, based on a case study of an organisation. It could include the technical and financial aspects of corporate strategy. Market intelligence, resource and business planning, strategic procurement decisions, feedback and analysis. Contingency planning and corporate sustainability.
To be able to perform advanced commercial management skills.	This outcome could be achieved in the context of a real or simulated project, based on a case study of a development. It could include critical appraisal of procurement options and contract strategies, project financial management, cost planning, tendering and estimating strategies, and final account reconciliation. Cost Management to inform stakeholder negotiations, time, cost, value, plan, programme, resource, production, health and safety, quality, human resources, environment and sustainability.

4.2 Additional Learning Outcomes for Masters' Degrees in Project Management

The role of the project manager has been defined in the CIOB Code of Practice for Project management for Construction and Development, 5th Ed., Wiley-Blackwell 2014. The principles of the CIOB Code of Practice for Project Management are implicit in The Education Framework outcomes below.

Learning Outcome	Indicative Range of Subjects
To be able to critically assess the technical aspects of project management.	Complex issues of project management both for an organisation and a project in a project programme and portfolio context. Complex issues of operational management, human resources management and time/cost optimisation. Whole life considerations including sustainability, building commissioning, handover, building in use and end of life management.
To be able to appraise and apply the legal aspects of project management procedures within a complex built environment context.	Company and partnership law in joint ventures, public/private financing and other special purpose vehicles. Critical appraisal of contract and client relationships. Contract set up, operation, completion, determination, settlement of accounts, claims, dispute resolution and case law.
To be able to perform advanced project management skills.	This outcome could be achieved in the context of a real or simulated project, based on a case study of a development. It could include project role definition, feasibility studies and appraisals, strategic procurement and collaborative working decisions, team selection, target setting, operational/production control, decision-making, problem solving, feedback, analysis, subsequent action. Project management to inform stakeholder negotiations, time/cost value, plan/programme, resource, production, health, welfare and safety, quality, human resources, environment and sustainability.
To be able to perform high level planning and programming skills.	This outcome could be achieved in the context of a complex project/multiple project scenario to include project scope and definition, assembly of data, use of method statements and use of appropriate software to produce effective project programmes,

4.3 Additional Learning Outcomes for a Masters' Degree in Design Management, Architectural Technology or Architectural Engineering

Learning Outcome	Indicative Range of Subjects
To be able to critically assess the technical aspects of design and management in construction.	Complex issues of design and management within the environment and the role of BIM. The management of design processes to include client brief analysis, evolution of design, the development of drawings and other production information to achieve buildability, client satisfaction, value, end user satisfaction and sustainability.

<p>To be able to critically appraise contractual procedures and construction law within the context of design management, architectural technology or architectural engineering.</p>	<p>Critical appraisal of client contracts, procurement, assurance, contract set up/operation/completion/determination, claims and disputes. Statutory and regulatory considerations in a design context including health, welfare and safety, and sustainability.</p>
<p>To be able to perform high level planning and programming skills.</p>	<p>For a complex project scenario, define the scope and the management aspects of drawings, production information and resources. The use of manual and information technology techniques within the design process.</p>
<p>To be able to perform advanced design management skills.</p>	<p>This outcome could be achieved in the context of a real or simulated project, based on a complex design management scenario and address pre-contract and post contract design management issues. It could include a critical appraisal of: the project, team selection, operational/production control, feedback, and analysis. Design management to inform client negotiation, quality, plan/programme, human and other resources, health, welfare and safety, design economics, cost planning and sustainability.</p>

4.4 Additional Learning Outcomes for a Masters' Degree in Building Surveying

Learning Outcome	Indicative Range of Subjects
<p>To be able to critically evaluate technical aspects in the design, management and effective operation of built assets.</p>	<p>Complex issues of design, management and effective operation management considered from the organisation, building user and project perspectives. It is anticipated that reference is made to building condition surveys, , space planning and computer aided facilities management systems to balance time, cost and value challenges. The management of facilities design and operational processes including briefing and design development, utilising models, drawings and production information to address buildability, affordability and maintenance issues. Whole life considerations: sustainability, building commissioning, handover, management, care and repair of the building during use, refurbishment and any potential future re-use/replacement of the asset/facility.</p>

To be able to appraise and apply premises, construction and employment law to the safe and effective management of complex built assets.

Critical appraisal of client and contract supplier relationships.

Company law, joint ventures, partnering, and other appropriate special purpose vehicles.

Contract operation, completion, determination and settlement of accounts, claims, dispute resolution and case law applicable.

Statutory and regulatory considerations of design and operational use of facilities; fully embracing health and safety management, and environmental sustainability considerations.

Human resource management, including: industrial relations, equal opportunity / employment law, and health and safety legislation.

To be able to perform high level planning and programming skills.

Use of manual and information technology techniques to support effective asset management processes for achieving best value delivery of strategic and operational services.

To be able to perform advanced facilities management skills.

This outcome could be achieved in the context of a real or simulated project, based on a case study of a development or existing facility. It could include project/role definitions, feasibility studies and appraisals, market research and locational factors, strategic procurement decisions, team selection, target setting, operational/production control, decision-making, problem solving, feedback, analysis and action. Factors will include: stakeholder negotiations, time/cost value, plan/programme, resource, production, health and safety, quality, human resources, maintenance planning, environmental sustainability.



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