

## **BACHELOR OF SCIENCE (HONS) IN CONSTRUCTION MANAGEMENT (TOP UP) AWARDED BY BIRMINGHAM CITY UNIVERSITY (BCU)**

### **PROGRAMME SPECIFICATION**

#### **PROGRAMME PHILOSOPHY AND AIMS**

The BSc (Hons) in Construction Management (Top Up) is designed to provide practicing professionals in Singapore with enhanced technical knowledge and understanding in order to progress their careers, balancing this with the ability to think critically, reason, analyse, research and evaluate, the skills associated with higher education. Thus the programme provides both the life skills and technical knowledge necessary to further pursue a professional career within the realm of Construction Management.

The programme prepares students for an exciting and challenging career in the construction industry. By working with industrial partners and through a rigorous and coherent curriculum focusing on problem-solving, it aims at developing students' intellectual and practical competence required by industry. After completing this course, the students should have a broad range of knowledge of the legal, technical, managerial, economic, social and environmental aspects of construction projects, and can confidently manage both building and civil engineering projects.

Drawing upon key industrial links, it supports students by applying their learning to problem-based scenarios. Students are helped to develop competencies and skills that are transferrable to the full range of international and national construction workplace environments.

#### **The programme aims to provide learners with:**

- A curriculum that encourages students to seek solutions through problem based learning
- Appreciation of the needs of the wider development community
- An appreciation of costing and pricing techniques in accordance with a standard method of measurement
- An understanding of operational management, resource management and the construction process
- Appreciation of construction technology and innovation
- The ability to synthesize complex information and communicate effectively
- Appreciation of construction law and procurement
- Knowledge and ability to work in teams and lead teams including the aptitude to work independently
- An appreciation of the wider context of strategic management and the impact of the political and economic climate
- A qualification accredited by the relevant professional bodies
- An appreciation of all the roles in the industry and the importance of being a reflective manager
- Appropriate level of understanding of organisational management in construction companies, business processes, accounting and keeping the company operating, developing negotiation and mediation skills

**Intended learning outcomes and the means by which they are achieved and demonstrated:**

**Learning Outcomes**

**1. Knowledge and Understanding**

KU1. Construction technology relating to a wide range of building and civil engineering projects with appropriate regard to health and safety and environmental responsibility;

KU2. Time, cost and quality implications associated with varying forms of construction and project procurement;

KU3. Document preparation and appraisal, managing interpersonal relationships, applied problem solving including quantitative and qualitative analysis, business acumen and project management;

KU4. The English legal system, the broad range of legislative, common and contract law and the influences of European law;

KU5. The influences of the general economy on development and the specific financial and economic aspects of construction;

KU6. Business management systems and techniques appropriate to the construction and property profession, team based working and group dynamics;

KU7. Information technology including use of word processing, spreadsheet, databases, CAD and industry specific software.

**2. Intellectual Skills**

IS1. Analyse, critically evaluate and produce a sophisticated synthesis of economic, technical and legal principles and concepts;

IS2. Use proficiently information and materials from a variety of sources;

IS3. Transfer learning study skills to new fields of the programme discipline;

IS4. Apply economic, technical, legal and other knowledge, theories and concepts to a diverse range of practical issues and problems;

IS5. Make critical judgements about the merits of differing approaches to problem solving;

IS6. Expose the strengths and weaknesses of economic, technical and legal solutions, make and present a reasoned choice between them and offer alternatives.

### 3. Practical Skills

PS1. Act independently in constructing own learning models, plan and undertake tasks including working to deadlines, and accept accountability for own learning decisions;

PS2. Reflect on and appraise learning needs and adopt appropriate learning strategies;

PS3. Identify accurately and proficiently the issues which require research;

PS4. Apply effectively appropriate methodologies to a major active learning project, using primary and secondary, paper and electronic sources;

PS5. Collect relevant information, assimilate knowledge, marshal a coherent and rational argument, and relate theory and practice;

PS6. Undertake, with guidance, speculation and exploration, seeking and making use of feedback;

PS7. Draw independent conclusions based on a rigorous, analytical and critical assessment of argument, opinion and data.

### 4. Transferable/Key Skills

TS1. Understand and use with expertise and precision, orally and in writing, the English language in relation to issues within construction and property;

TS2. Make effective oral and written presentations which are coherent and comprehensible to others;

TS3. Work with, and relate effectively to, others;

TS4. Manage time and prioritise workloads;

TS5. Access and make appropriate use of relevant numerical and statistical information;

TS6. Make effective use of relevant information technology, including a word- processing package, a spreadsheet package, a database package, a presentation software package, CAD, the World Wide Web, e-mail, and electronic information retrieval systems;

TS7. Understand career opportunities and begin to plan a career path;

TS8. Show confidence and self-awareness, reflect on own learning, be self-reliant and constructively self-critical

## **Learning teaching, and assessment methods used**

### **1. Knowledge and understanding**

Knowledge and understanding are acquired through formal lectures, seminars and other directed independent learning activities.

Knowledge is assessed, formatively and summatively, by a number of methods, including discussion, question and answer, web hosted forums, formal and informal tutorials, seminars, coursework, examinations (seen and unseen, open and closed book) and project work.

Assessment criteria are published at course and module level. Minimum standards of referencing are specified.

### **2. Intellectual skills**

A range of real and theoretical case studies and problem-based learning scenarios are used across many subject areas and provides the major focus at final level.

Assessment includes individual and group presentations (oral and written), seminars, coursework and examinations (seen and unseen, open and closed book).

### **3. Practical skills**

The acquisition of research skills is central to the learning strategy of the programme. Initiative and independence are fostered throughout, and develop incrementally as the course progresses.

Emphasis is placed on guided, self-directed and student-centred learning, with increasing independence of approach, thought and process.

Learners are encouraged to plan their own work schedules and are required to meet strict deadlines.

Diaries of work may be required in some modules, particularly project-based modules. Learners undertake an Honours Research Project in the final year.

### **4. Transferable/key skills**

Transferable/key skills are core to the learning strategy of the programme. They are pervasive, and are incorporated into modules and assessments as appropriate, e.g. team working skills are fostered via seminars and other group-work.

The use of information technology is implicit and supported throughout the course, and is compulsory for some aspects of assessment.

Assessment methods include seminar presentations, role-play, coursework, Honours Research

Project and examinations (seen and unseen, open and closed-book).

## PROGRAMME SYNOPSIS

### 1. Inter Professional Project

- Written group proposal
- Group presentation
- Produce an individual reflective report and action plan for future development.
- Interpretation of client brief
- Teamwork and interpersonal skills,
- Appreciation of different ways of working
- Report writing and presentation skills
- Critical self-reflection on personal and professional development needs

### 2. Construction Economics

- Whole life costing
- Value engineering / management
- Taxation and Grants
- Risk throughout the project looking at tools to assist with this such as BIM and the impact on project management □ Macro and micro economics in construction
- International global economy
- International practice
- Asset and facilities management

### 3. Contract Practice

- Roles and responsibilities under the contract
- Quality of materials and workmanship
- Changes to the work
- Time requirements
- Additional time / damages for late completion / programme requirements payments
- Interim payments
- Final accounts
- Insurance and warranties
- Termination of a contract
- Dispute resolution
- Litigation
- Adjudication

### 4. Bid Strategy

- Technology
- Management
- Programming
- Estimating
- Innovation
- Business

### 5. Project Management

- Integrated project delivery and collaborative practices
- Construction scheduling, programming, earned value analysis and cash flow
- Risk and value management
- Innovative practices such as BIM and its application
- Stakeholder engagement
- People management
- Project culture and leadership
- Project management: international perspective

### 6. Civil Engineering

- Soil and site investigation
- Methods for soil investigation
- Interpretation of Site report
- Ground works
- Main structural elements: beams and columns in steel, timber and reinforced concrete, concrete curing and striking formwork; steel connections, bracing, fireproofing, bracing, water, moisture movement.
- Structural behaviour and analysis
- External works: roads, drainage systems, SUDS, culverts, gravity and cantilever retaining walls.

### 7. Honours Research Project

- Research skills
- What is research, data collection/research techniques, research ethics, developing and delivering a research strategy,
- Writing interview questions and opportunity to conduct dummy interviews,
- Development of questionnaires/surveys and chance to test them,
- Opportunity to do site observations, make field notes, mapping skills.
- Individual research report/paper
- How to write an academic paper/technical report, referencing
- Methods of analysis,
- Specialist session/guest lectures on specific topic areas as required
- Individual research into agreed project