UNIVERSITY OF ULSTER

PROGRAMME SPECIFICATION

PROGRAMME TITLE:
BSc (Honours) Construction Engineering & Management (part-time)  (C530UJ)

PLEASE NOTE. This specification provides a concise summary of the main features of the programme and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he or she takes full advantage of the learning opportunities provided. More detailed information on the specific learning outcomes, content and the learning; teaching and assessment methods of each module can be found at http://www.engineering.ulster.ac.uk/ and in the programme handbook.

1. AWARDING INSTITUTION/BODY: UNIVERSITY OF ULSTER
2. TEACHING INSTITUTION: UNIVERSITY OF ULSTER
3. LOCATION: Jordanstown Campus
4. PROGRAMME ACCREDITED BY: Chartered Institute of Building
5. FINAL AWARD: BSc (Honours) Construction Engineering & Management
6. MODE OF ATTENDANCE: Part-time
7. SPECIALISMS: None
8. PROGRAMME CODE: C530UJ
9. QAA SUBJECT UNIT: Building and Surveying

10 EDUCATIONAL AIMS AND OBJECTIVES OF THE PROGRAMME

The general aim of the BSc Hons Construction Engineering & Management degree is to prepare graduates for practice as professional Construction Engineers and Managers and to provide a foundation to encourage and support further professional development.

The BSc Hons Construction Engineering & Management degree programme aims to:

• Provide an educational experience which will encourage the development of professional skills, judgement, attitudes and personal attributes which will be of benefit to the graduate in the construction industry, its associated professions and society in general.

• Instil an appropriate knowledge of the practices and processes involved in the development of a building project from inception to completion, including social, financial, technical and environmental factors.

• Provide students with a rigorous study of a broadly based programme of subjects related to the construction, alteration, maintenance, repair, provision, inspection and management of buildings.

• Expand the students’ communicative skills and intellectual powers.

• Establish a thorough understanding of the scientific, technological and economic principles of building, with particular reference to quality, safety and value for money.

• Enable the student to apply modern information technology to the construction process.

• Equip the student for a wide range of employment opportunities in construction.

• Provide an intellectual framework to further develop decision-making abilities and empower an imaginative approach to problem solving and entrepreneurship.

• Prepare the student to undertake research.
11. **MAIN LEARNING OUTCOMES**

The programme provides opportunities for students to achieve and demonstrate the following learning.

### 11K SUBJECT RELATED QUALITIES

The student demonstrates Knowledge and Understanding of:

- **K1** the key concepts, theories and principles used in building, including measurement, legal principles, economic theory and applied economics, design, construction, performance of buildings, resource management, and the application of management theories;
- **K2** the context in which building operates, including legal, social, economic, health and safety, cultural, technological, physical, environmental and global influences.
- **K3** the linkages and inter-relationships between the elements of the discipline of building and the relationships between the discipline and related disciplines operating in the built and natural environments;
- **K4** specialist knowledge in applied science, materials, construction, engineering, financial management and business management, human-building interaction, land surveying, resource management and allocation;
- **K5** the professions and industries allied to building, their operation and the linkages between them;
- **K6** professional ethics, their impact on the operation of the professions and their influence on the society, communities and the stakeholders with whom they have contact.
- **K7** construction related management practices.

**Learning and Teaching Methods:**

Knowledge and understanding of the subject are acquired mainly through lectures, tutorials, practical work carried out in the laboratory, directed reading, case studies, seminars, and IT based resources.

**Assessment Methods:**

Assessment of the above is principally through formal closed book examinations, class tests and coursework assignments consisting of reports on laboratory work, essays, individual and group exercises, a major individual project dissertation and oral/poster presentations.

### 11I INTELLECTUAL QUALITIES

The student is able to:

- **I1** critically evaluate arguments and evidence
- **I2** solve routine and unfamiliar problems, including collecting, analysing and interpreting data
- **I3** self-manage and learn independently, such that they can analyse their own personal strengths and weaknesses and formulate strategies for improvement;
- **I4** question standard practice, and apply professional judgement in making recommendations and solving problems for future best practice.
- **I5** plan, conduct and report on a programme of professional, technical or scientific research.

**Learning and Teaching Methods:**

These qualities are developed through exercise classes/tutorials, coursework assignments, individual and group studio work, simulation exercises and project.

**Assessment Methods:**

The above are assessed through formal examinations, class tests and more open-ended coursework assignments consisting of a range of problem simulation, poster and oral presentations/interviews and project dissertation.
**11P PROFESSIONAL /PRACTICAL SKILLS**

The student is able to:

P1  use manual and IT technology appropriate to construction;
P2  use statistical concepts at an appropriate level, such that they can interpret, analyse and manipulate data;
P3  research for related literature and information.
P4  control the technical production of construction activities and components.
P5  undertake experimental laboratory work using relevant test and measurement apparatus.
P6  follow and develop safe working practices; aware of the needs, roles, rights and responsibilities of others,
P7  apply appropriate construction project management techniques to specific problems.

**Learning and Teaching Methods:**

Professional and practical skills are gained through coursework assignments including laboratory work, computing, problem solving assignments and studio work undertaken individually or in small groups and a substantial final year research project.

**Assessment Methods:**

Assessment of the above skills is by practical tests including reports on laboratory work, computer assignments and tests and problem simulation, and project dissertation. Some aspects are also assessed by formal closed book examination.

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**11T TRANSFERABLE/KEY SKILLS**

The student is able to:

T1  locate, extract and analyse data from multiple sources, including drawn information;
T2  use appropriate quantitative, quantitative and other techniques, and use standard and relevant IT software;
T3  communicate effectively such that they can present quantitative and qualitative information, together with analysis, argument and commentary, in a form appropriate to the intended audience, including appropriate acknowledgement and referencing of sources;
T4  use communications and information technology effectively;
T5  effectively work with others within the context of a team;
T6  self-manage and learn independently such that they can analyse their own personal strengths and weaknesses and formulate strategies for improvement.
T7  develop skills which allow life long learning
T8  summarise legal and other documents;
T9  manage time and resources
T10 appreciate their role in society.

**Learning and Teaching Methods:**

The skills listed above are developed through coursework assignments including the preparation of reports, problem solving assignments/studio work undertaken individually or in small groups and a substantial final year research project.

**Assessment Methods:**

The above skills are assessed by reports on laboratory, problem simulation, a major final year project dissertation along with observation of management simulation exercises, oral and poster presentations.
# MODULE OUTCOME MAP

**Please Note:** The matrix displays only the main measurable outcomes. There may be other outcomes detailed in the module descriptions (e.g. attitudes and behaviours) which are not assessed.

<table>
<thead>
<tr>
<th>MODULES</th>
<th>TITLES</th>
<th>OUTCOMES</th>
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<tbody>
<tr>
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<td>CODE</td>
<td>K 1</td>
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<tr>
<td>Construction Technology A</td>
<td>BLD104J1</td>
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<tr>
<td>Construction Surveying &amp; CAD</td>
<td>BLD199J4</td>
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<tr>
<td>Introductory Mathematics 1</td>
<td>MAT123J4</td>
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<tr>
<td>Construction Economics and</td>
<td>BLD113J2</td>
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<td>Business Environment</td>
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<td>Building Science and Materials</td>
<td>BLD101J1</td>
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<tr>
<td>Building Structures</td>
<td>BLD125J1</td>
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<tr>
<td>Construction Technology B</td>
<td>BLD301J2</td>
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<tr>
<td>Construction Law &amp; Professional Practice</td>
<td>BLD309J2</td>
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<tr>
<td>Building Production Management</td>
<td>BLD304J1</td>
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<tr>
<td>Building Environmental</td>
<td>BLD306J1</td>
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<tr>
<td>Engineering</td>
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<tr>
<td>Building Design and Practice</td>
<td>BLD303J2</td>
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<tr>
<td>Measurement and Cost Studies</td>
<td>BLD320J2</td>
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<tr>
<td>Building Assessment</td>
<td>BLD518J1</td>
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<td>Construction Management</td>
<td>BLD521J1</td>
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<td>Project Appraisal and</td>
<td>BLD504J4</td>
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<td>Development</td>
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<tr>
<td>Building Performance &amp;</td>
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<td>Regulation</td>
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<td>Construction Business Finance</td>
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<tr>
<td>Research and Dissertation</td>
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<tr>
<td>Building Project Management</td>
<td>BLD519J1</td>
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</tbody>
</table>

Note: The matrix displays only the main measurable outcomes. There may be other outcomes detailed in the module descriptions (e.g. attitudes and behaviours). Which are not assessed.
### 11(ENTR) ENTREPRENEURSHIP AWARENESS LEARNING OUTCOMES

The programme provides opportunities for students to achieve and demonstrate the following learning.

#### 11(ENTR) ~ K SUBJECT RELATED QUALITIES

The student demonstrates Knowledge and Understanding of:

- **EK1** Entrepreneurship, the entrepreneur and the entrepreneurial process.
- **EK2** The central role of creativity and innovation in entrepreneurship and the challenges of protecting new ideas.
- **EK3** The steps required to research the potential for a new venture opportunity or innovation.
- **EK4** The key resources, including finance, available for new venture creation.
- **EK5** The components of a business/project plan and aspects of the planning process.

### Learning and Teaching Methods:

Knowledge and understanding of the subject are acquired mainly through lectures, tutorials, directed reading, and IT based resources.

### Assessment Methods:

Assessment of the above is principally by coursework assignments and computer-aided assessments.

### 11(ENTR) MODULE OUTCOME MAP

Please Note: The matrix displays only the main measurable outcomes. There may be other outcomes detailed in the module description (e.g., attitudes and behaviours) which are not assessed.

<table>
<thead>
<tr>
<th>MODULES</th>
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<tbody>
<tr>
<td>CODE</td>
<td>TITLE</td>
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<tr>
<td>BLD113J2</td>
<td>Construction Economics &amp; Business Environment</td>
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</tbody>
</table>
The BSc(Hons) part-time degree is of 5 years duration. Years 1, 2, 3 & 4 each are comprised of modules totalling 80 credit points studied over 2 semesters. Year 5 comprises modules totalling 40 credit points studied in the first semester. The final dissertation is started in year 4 and completed in year 5. The classification of the degree is based on the marks gained in the 5 modules in years 4 & 5.

<table>
<thead>
<tr>
<th>Module Code &amp; Title</th>
<th>Credit Level</th>
<th>Credit Points</th>
<th>Module Status</th>
<th>Awards</th>
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<tbody>
<tr>
<td>Year 1</td>
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<tr>
<td>BLD104J1 Construction Technology A</td>
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<td>C</td>
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<tr>
<td>MAT123J4 Introductory Mathematics</td>
<td>1</td>
<td>20</td>
<td>C</td>
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<tr>
<td>BLD113J2 Construction Economics and Business Environment</td>
<td>1</td>
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<tr>
<td>BLD199J4 Construction Surveying and CAD</td>
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<td>Year 2</td>
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<tr>
<td>BLD101J1 Building Science and Materials</td>
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<td>BLD125J1 Building Structures</td>
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<td>20</td>
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<td>BLD301J2 Construction Technology B</td>
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<td>C</td>
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<tr>
<td>BLD309J2 Construction Law and Practice</td>
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<td>Year 3</td>
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<tr>
<td>BLD304J1 Building production Management</td>
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<td>20</td>
<td>C</td>
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<tr>
<td>BLD306J1 Building Environmental Engineering</td>
<td>2</td>
<td>20</td>
<td>C</td>
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<tr>
<td>BLD303J2 Building Design and Practice</td>
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<td>BLD320J2 Measurement and Cost Studies</td>
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<td>Year 4</td>
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<td>BLD518J1 Building Assessment</td>
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<td>BLD521J1 Construction Management</td>
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<td>BLD504J4 Project Appraisal and Development</td>
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<td>BLD501J2 Building Performance and Regulation</td>
<td>3</td>
<td>20</td>
<td>O</td>
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<tr>
<td>BLD527J2 Construction Business Finance</td>
<td>3</td>
<td>20</td>
<td>O</td>
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<tr>
<td>BLD515J4 Research and Dissertation</td>
<td>3</td>
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<td>C</td>
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<tr>
<td>Year 5</td>
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<tr>
<td>BLD515J4 Research and Dissertation (continued from Yr4)</td>
<td>3</td>
<td>20</td>
<td>C</td>
<td>BSc (Hons) Construction</td>
</tr>
<tr>
<td>BLD519J1 Building Project Management</td>
<td>3</td>
<td>20</td>
<td>C</td>
<td>Engineering &amp; Management</td>
</tr>
</tbody>
</table>
13 SUPPORT FOR STUDENTS AND THEIR LEARNING

Students and their learning are supported in a number of ways:

- The programme was designed and is delivered to take the needs of part-time students into account. This includes timetabling, separate lecturing for at least 50% of the modules, and flexible access to academic staff.
- A comprehensive induction for new students regardless of entry level.
- Programme handbook and module booklets.
- Access for students to the Course Director and academic staff.
- Student representation on the course committee.
- Opportunity to address general programme concerns through the student/staff consultative committee.
- Personal studies advisors allocated to each student.
- Opportunity for feedback on academic progress at the end of each semester.
- Guidance and information on safety-related matters.
- Facilities and assistance offered by the Learning Resources Centre (library) and computer services (ISD).
- Student e-mail accounts and full access to the Internet
- Intranet with a wide range of software, tutorials and information resources (VIBEL – Virtual Built Environment Library)
- Department of Student Affairs provides services in the fields of accommodation, health, counselling & guidance, careers, childcare, finance & special needs.
- The Careers Service, in conjunction with course teams, provides careers advice.
- University has protocols for assessment of students with disabilities.
- Student membership and participation in Professional bodies is encouraged.
- Students Union, in conjunction with the International Office, runs an orientation course for overseas students.

14 CRITERIA FOR ADMISSION TO THE PROGRAMME

Applicants must satisfy the University’s general entry requirements.

Applicants should normally be over 21 years of age, have at least three years experience in, and currently be employed in the construction industry.

14.1 Published entry requirements for admission to the programme are detailed below:

**Year 1 Entry**

**GCE A Level:** BCC normally to include Mathematics and an appropriate scientific subject

**EDEXEL/BTEC** National Diploma in Construction.

**GNVQ at advanced level in the Built Environment** An overall Distinction to include Environmental Science plus either A level Mathematics at grade C or four additional units to include Diagnostic Mathematics, Applied Mathematics and Structural Mechanics.

**Irish Leaving Certificate.**

**Other Qualifications** Applicants with other equivalent qualifications may apply.

**YEAR 2 Entry**

**HNC or HND in Construction** Pass

Accreditation for prior learning (APCL & APEL) will be awarded where appropriate.
The following mechanisms are used:

**Mechanisms for review and evaluation of teaching, learning, assessment, the curriculum and outcome standards;**
- Formal student feedback is sought on the content and delivery of each module via a student/staff consultative committee.
- Upon completion the module team reviews each module. Statistical information, student feedback, content, delivery, assessment methods, resources and proposed enhancements are considered.
- Periodic validation involving external industrial and academic panel.
- The programme is accredited by the Chartered Institute of Building.
- Annual Subject Monitoring, including views of External Examiner and module evaluation.
- Staff teaching performance is monitored annually through student questionnaires. In addition, staff members participate in peer observation of their teaching.
- Staff appraisal is carried out on a 2 year cycle with attention given to the development needs of the individual staff member.

**Committees with responsibilities for monitoring and evaluating quality;**
- Regular student/staff consultative meetings provide the means of highlighting any difficulties, relating to the programme, experienced by the cohort.
- The course committee.
- Board of Examiners.
- School Board
- At school, faculty and University levels there are active Learning and Teaching, and Quality Assurance and Enhancement (QAEC) Committees responsible for co-ordinating and monitoring developments and initiatives relating to innovative methods for delivery, technology mediated learning, as well as general resource issues. In addition, QAEC is responsible for regulating faculty codes of practice relating to programme management and delivery.

**Mechanisms for gaining student feedback on the quality of their learning experience;**
- Student-Staff Consultative Committee
- Students are given opportunity to be represented at course committee, School and Faculty board
- Module evaluation questionnaires/module forum/module free response
- Placement reports

**Staff development includes;**
- Updating in the subject through research and scholarship
- The University has an active Staff Development Unit providing specific training/development for staff. Specifically, all new staff members (opportunity is also provided for existing staff) have to pursue a formal teaching qualification (Postgraduate Certificate) and are encouraged to apply for membership of the HEA.
- Consultancy.
Assessment rules.

General programme regulations are in accordance with the current University of Ulster “Charter, Statutes, Ordinances and Regulations” and updated annually in the Student Handbook for the programme.

In modules that are assessed by either coursework or written examination, the pass mark is 40%. In modules that are assessed by a combination of coursework and written examination, the pass mark for each assessment element is 40%.

Classification Of Final Result

Only level 3 modules contribute to the Honours classification. Each module is weighted in proportion to it credit point rating.

Honours classification is based on year 4 & 5 (five modules) and is dependant on the overall weighted mark as follows:

<table>
<thead>
<tr>
<th>Classification</th>
<th>% of Overall Weighted Mark</th>
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<tbody>
<tr>
<td>1st Class</td>
<td>70% and over</td>
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<tr>
<td>2nd Class 1st Division</td>
<td>60-69%</td>
</tr>
<tr>
<td>2nd Class 2nd Division</td>
<td>50-59%</td>
</tr>
<tr>
<td>3rd Class</td>
<td>40-49%</td>
</tr>
</tbody>
</table>

In addition 50% of the module credit points must be at least at the same level as the classification awarded.

External Examination

One External Examiner is appointed for the programme. His/her term of office is normally 4 years. The role of the External Examiner is to moderate and approve examination papers and other forms of assessment, ensure that academic standards are maintained and that individual students are treated fairly. The External Examiner is required to submit a report on the standard of the programme, assessment and student performance, comparability of these standards with those of similar programmes, and the administration of the assessment schemes and processes. Detailed duties are as specified in the current University of Ulster “Code of Practice for External Examiners”.
17. INDICATORS OF QUALITY RELATING TO LEARNING AND TEACHING

- Teaching staff within the faculty are encouraged to become accredited members of the Higher Education Academy. New academic members of staff are required to undertake the Postgraduate Certificate in University Teaching (PGCUT).
- As well as teaching, most staff are actively engaged in research that informs their teaching. In addition, most have substantial industrial experience prior to joining the University. A significant number are full members of appropriate professional bodies (e.g. CIOB, RICS etc.).
- In 1998 the HEFCE/Quality Assurance Agency awarded a score of 21.
- In the 2002 Research Assessment Exercise staff teaching on the programme contributed to Unit 33 “Built Environment” gaining a score of 5. The subject areas of “Metallurgy and Materials” and “General Engineering” both achieved *. Further improvements are anticipated in future exercises.
- Annual Subject Monitoring.
- Periodic Subject Validation.