

PROGRAMME SPECIFICATION

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UG Programme Directory

PG Programme Directory

Award titles

Programme Title(s)

BSc (Anrh) Arolwg Adeiladu (Prentisiaeth Gradd)
BSc (Hons) Building Surveying (Degree Apprenticeship)

BSc Peirianeg Sifil (Prentisiaeth Gradd)
BSc (Hons) Civil Engineering (Degree Apprenticeship)

BSc (Anrh) Rheoli Adeiladu (Prentisiaeth Gradd)
BSc (Hons) Construction Management (Degree Apprenticeship)

BSc (Anrh) Mesur Meintiau (Prentisiaeth Gradd)
BSc (Hons) Quantity Surveying (Degree Apprenticeship)

Programme to be included in Graduation Ceremonies

Yes

Delivery period

September 2024-September 2028

Intake points

September

Regulatory details

Regulatory details
Awarding body
Wrexham University
Programme delivered by
Wrexham University Coleg Cambria
Location of delivery
Wrexham University: Plas Coch Campus
Coleg Cambria: Bersham Rd Wrexham LL13 7UH Mold Rd Wrexham

LL11 2AW
Faculty/Department
Engineering: Built Environment, Faculty of Art, Computing and Engineering Coleg Cambria
Exit awards available
<p>BSc (Ord) Building Surveying Diploma of Higher Education in Building Surveying Certificate of Higher Education in Building Surveying</p> <p>BSc (Ord) Civil Engineering Diploma of Higher Education in Civil Engineering Certificate of Higher Education in Civil Engineering</p> <p>BSc (Ord) Construction Management Diploma of Higher Education in Construction Management Certificate of Higher Education in Construction Management</p> <p>BSc (Ord) Quantity Surveying Diploma of Higher Education in Quantity Surveying Certificate of Higher Education in Quantity Surveying</p>
Professional, Statutory or Regulatory Body (PSRB) accreditation
<p>This information is correct at the time of validation, please refer to the PSRB register for current accreditation status.</p> <p>Building Surveying / Construction Management / Quantity Surveying The PSRB in these contexts is intended to be the Chartered Institute of Building [CIOB]. The CIOB currently accredits BSc (Hons) Construction Management and HNC Construction Technology titles, though this expires with the September 2023 intake. It is intended that the proposed BSc (Hons) Building Surveying and BSc (Hons) Quantity Surveying programmes will be included as additional titles when an application is made for re-accreditation of existing titles upon successful completion of the re-validation process.</p> <p>Successful completion of either an accredited BSc (Hons) Building Surveying, BSc (Hons) Construction Management or BSc (Hons) Quantity Surveying programme will provide a route to full membership of the CIOB (MCIOB).</p> <p>Civil Engineering Upon successful validation, the BEng (Hons) Civil Engineering Degree Apprenticeship will be submitted to the Joint Board of Moderators [JBM] for approval. Upon approval by the JBM, successful completion of the BEng (Hons) Civil Engineering Degree Apprenticeship programme will meet the required educational base for Incorporated Engineer (I Eng) registration with the Institution of Civil Engineers, the Institution of Structural Engineers, the Chartered Institution of Highways and Transportation, the Institute of Highway Engineers and the Permanent Way Institution.</p>
Please add details of any conditions that may affect accreditation (e.g. is it dependent on choices made by a student?) e.g. completion of placement.
There are no conditions expected beyond those PSRB requirements already accommodated in the design of the programme titles described.
HECoS codes
<p>100216 BSc (Hons) Building Surveying 100148 BEng (Hons) Civil Engineering 100151 BSc (Hons) Construction Management 100217 BSc (Hons) Quantity Surveying</p>
UCAS code

K230 BSc (Hons) Building Surveying H200 BEng (Hons) Civil Engineering K222 BSc (Hons) Construction Management K240 BSc (Hons) Quantity Surveying
Relevant External Reference Points
QAA Subject Benchmark Statement: Land, Construction, Real Estate and Surveying, October 2019 (under review) QAA Subject Benchmark Statement: Engineering, March 2023 QAA Characteristics Statement for Higher Education in Apprenticeships QAA Guidance on Education for Sustainable Development. Draft Welsh Construction Degree Apprenticeship framework of the CITB
List the programmes that offer the Foundation Year route
No
Mode of study
BSc (Hons) Building Surveying (Degree Apprenticeship): Part time BEng (Hons) Civil Engineering (Degree Apprenticeship): Part time BSc (Hons) Construction Management (Degree Apprenticeship): Part time BSc (Hons) Quantity Surveying (Degree Apprenticeship): Part time
Normal length of study for each mode of study
BSc (Hons) Building Surveying (Degree Apprenticeship): 4 years part-time BEng (Hons) Civil Engineering (Degree Apprenticeship): 4 years part-time BSc (Hons) Construction Management (Degree Apprenticeship): 4 years part-time BSc (Hons) Quantity Surveying (Degree Apprenticeship): 4 years part-time
Language of study
All programmes will be delivered through the medium of English; students are entitled to submit assessments in the medium of Welsh if this is preferred.
Transitional arrangements for re-validated provision if applicable
n/a
Repeat year students
n/a
The following University Award Regulations apply to this programme
General Regulations Regulations for Bachelor Degrees, Diplomas, Certificates and Foundation Degrees Language Admissions Policy

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Date of validation event:	20 th March 2024
Date of approval by Academic Board:	3 rd July 2024
Approved Validation Period:	September 2024- September 2028
Transitional arrangements approved (if revalidation)	<i>Enter details from section 3 following validation event confirming what arrangements are</i>
Date and type of revision:	25 January 2025 Addition of day/block release appendix

1. Criteria for admission to the programme

Standard entry criteria

Entry requirements are in accordance with the University's admissions policy, please click on the following link for more information. [Admissions policies](#)

The University's general entry requirements are;

Qualification	Entry requirements
Bachelor Honours	48 – 72 Tariff points

These figures are intended as a general guide. Each application is considered individually.

International entry qualifications are outlined on the UK National Information Centre for global qualifications and skills (UK ENIC) as equivalent to the relevant UK entry qualification.

In addition to the academic entry requirements, all applicants whose first language is not English or Welsh must demonstrate English language proficiency.

European students are able to provide this evidence in a number of ways (please see [academic-entry-requirements](#) for details), including IELTS.

International students are required to provide an English Language Certificate which meets the requirements of the University (*please see [English-language-requirements](#) for details*).

Non-standard entry criteria

Applications from candidates who do not satisfy the standard entry criteria identified in the preceding section are welcome. Such applicants will be expected to demonstrate through interview that they have the potential to succeed on the programme. Candidates are required to be employed within the construction and civil engineering sector and have sufficient appropriate experience, though diagnostic assessment prior to admission will be considered in order to measure academic capability, particularly in mathematics and English or Welsh.

2. Record of Prior (Experiential) learning

Applicants may enter the programme at various levels with Recognition of Prior Learning (RPL) or Recognition of Prior Experiential learning (RPEL) in accordance with University General Regulations, but subject to guidance and regulatory control in respect to the operation of Degree Apprenticeships in Wales.

Where existing knowledge, skills and behaviours suggest that the apprentice might satisfy requirements towards Recognition of Prior Certificated Learning (RPL) or Recognition of Prior Experiential Learning (RPEL), the employer will be directly involved in assessing evidence within the established RPL and RPEL procedures of the University.

3. DBS Requirements

n/a

4. Suitability for Practice Procedure

n/a

5. Aims of the programme

All Degree Apprenticeship programmes that are the subject of this Specification are intended to provide a qualification that is recognised within the construction and civil engineering sector and its associated professions as a comprehensive, informed and valuable qualification to have achieved in the contexts of those disciplines described by the titles identified.

For the Wrexham University student, all programmes are intended to provide a challenging, rewarding and valuable experience in the development of knowledge, skills and behaviours in the context of those disciplines identified, as they relate to the processes and technologies that exist within the contemporary construction and civil engineering sector.

6. Distinctive features of the programme

Degree apprenticeships in Wales are work-based learning programmes that provide opportunities for individuals working in Wales to develop relevant industry knowledge and job competencies while in paid employment, gaining the experience of doing a particular job(s). Developed as a three-way learning partnership between the employer, the apprentice and the academic programme team, the programmes will enable apprentices to develop skills which will be in high demand in the future, meeting regional skills gaps.

The design of the proposed curriculum has been developed to satisfy the requirements of the most recent Welsh Government, professional body and Engineering Council educational frameworks, and QAA Benchmark Statements that relate to the design and implementation of those Built Environment titles described.

Such contexts range from the procedural to the technological, and so collective module content combines to facilitate a breadth of experience and depth of knowledge that will equip the Wrexham University graduate with the means to succeed in both technical and professional roles within the sector.

Practice within each of those subject disciplines described requires a good understanding of those other professional, technical and operational contributors to the development, construction and use of buildings and infrastructure, and so such perspectives have been important considerations in the design and detailing of module content.

It is expected that graduates of the programmes identified will be responsible for managing people and processes as well as the quality, cost and timeliness of outputs, and so all of these themes run through the curriculum to ensure considerate and informed graduates upon successful completion of their programme.

A further distinctive feature of all programmes is that in their delivery, unlike some subject areas, most if not all aspects of module content are informed by application in practice as well as theoretically in an academic sense. Because of this contextual significance, degree apprentices are encouraged to be both innovative in developing ideas, and mindful as to their application within well-defined legislative and 'good practice' constraints that already exist within the contemporary construction and civil engineering sector.

Having established the significance of the industrial context in the development of module content, it is important that programmes exploit to the full, opportunities for engagement with industry. This will be facilitated through site visits, study tours, guest and timetabled lectures from specialists, and further direct experience of those contemporary procedural and technological developments that are shaping the industrial future through credit-bearing work-based learning, placements and continuing professional development.

Academically and experientially therefore, the Wrexham University graduate of Building Surveying, Civil Engineering, Construction Management and Quantity Surveying will benefit from a programme that threads formal professional body requirements, the application of processes and technologies in the modern industrial context, and the personal and academic qualities expected of built environment graduates, into competency conducive to such a vibrant and challenging industrial sector.

7. Credit Accumulation and exit awards

Exit Awards

Successful completion of 360 credits at Level 6 entitles the student to a Bachelor's degree with Honours as follows:

BSc (Hons) Building Surveying

BSc (Hons) Construction Management
BEng (Hons) Civil Engineering
BSc (Hons) Quantity Surveying

Successful completion of 300 credits at Level 6 entitles the student to an Ordinary Bachelor's degree as follows:

BSc Building Surveying
BEng Civil Engineering
BSc Construction Management
BSc Quantity Surveying

Successful completion of 240 credits at Level 5 entitles the student to a Diploma of Higher Education as follows:

Dip. HE Building Surveying
Dip. HE Civil Engineering
Dip. HE Construction Management
Dip. HE Quantity Surveying

Successful completion of 120 credits at Level 4 entitles the student to the exit award of Certificate of Higher Education as follows

Cert. HE Building Surveying
Cert. HE Civil Engineering
Cert. HE Construction Management
Cert. HE Quantity Surveying

8. Programme Structure Diagram, including delivery schedule

Table 1 identifies four proposed Built Environment programmes vertically, mapped against the modules that each comprises horizontally.

Commonality between modules is incorporated to the extent to which PSRB accrediting bodies require their own discreet content, though where modules are complementary to more than one title they have been mapped as such. Cumulative credit totals for each of the proposed qualifications are shown vertically through Levels 4, 5 and 6.

Level & Ref.	Module	Core / Option	credits	DA	DA	DA	DA
				BSc (Hons) Build. Surv.	BEng (Hons) Civ. Eng.	BSc (Hons) Const. Man.	BSc (Hons) Quant. Surv.
AUR491	Architectural Design Technology 1	C/O	10			+1	+1
AUR492	Building Surveying 1	C/O	10	10			
AUR493	Construction Management 1	C/O	10			10	
AUR494	Quantity Surveying 1	C/O	10	+1	+1		10
AUR495	Civil Engineering Design	C/O	10		10		
AUR496	Digital Technologies in Drawing and Modelling	C	10	30	+1	30	30

AUR4A4	Digital Technologies in Surveying	C	20	50	40	60	50
AUR497	Legal Principles, Compliance and Liability	C	20	70		80	70
AUR499	Science and Materials	C	20	90	60	100	90
AUR4A1	Construction Technology	C	20	110		110	110
AUR4A2	Geotechnics	C	20		80		
AUR4A3	Structural Mechanics	C	10		90		
ENG495	Analytical Eng. Techniques	C	20		110		
AUR4A5	WBL1	C	10	120	120	120	120
AUR599	Building Surveying 2	C	20	140			
AUR5A1	Construction Management 2	C	20			140	
AUR5A2	Quantity Surveying 2	C	20				140
AUR5A3	Modern Methods of Const.	C	20	160		160	160
AUR5A5	Building Services	C	20	180		180	180
AUR5B3	Procurement and Contract Practice	C	20	200	140	200	200
AUR5A4	Commercial Management	C	20	220		220	220
AUR5A6	Civil Engineering Mathematics	C	20		160		
AUR5A7	Water Resource Management	C	20		180		
AUR5A8	Infrastructure and the Environment	O	20		200		
ENG5B2	Wind and Hydro Energy Engineering	O	20		200		
ENG5A5	Mechanics, Structures & FEA	C	20		220		
AUR5A9	WBL2	C	20	240	240	240	240
AUR697	Project Management	C	20	260	260	260	260
AUR699	Advanced Materials	C	10		270		
AUR6A1	Flood Risk Management	C	10		280		
AUR6A2	Design for Climate Resilience	C	20	280	300	280	280
AUR698	Individual Research Project	C	20	300	320	300	300
AUR6A4	Professional Practice 3	C	20	320		320	320
AUR6A3	Major Project (WBL DA)	C	40	360	360	360	360

The Degree Apprenticeships programmes will be jointly delivered between Wrexham University and Coleg Cambria. The first two years of the programme will be delivered at Coleg Cambria, except for the WBL modules, which Wrexham University will deliver at all levels. Year 3 and 4 will be delivered at Wrexham University.

BSc (Hons) Building Surveying Degree Apprenticeship delivery

Level	Module Code	Module Title	Credit Value	Core/Option	Delivery (i.e. semester 1,2)	Year of Study	Delivery Team
Level 4	AUR496	Digital Technologies in Drawing and Modelling	10	Core	Sem 1	Y1	CC
Level 4	AUR499	Science and Materials	20	Core	Sem 1	Y1	CC
Level 4	AUR492	Building Surveying 1	10	Core	Sem 1	Y1	CC
Level 4	AUR497	Legal Principles, Compliance and Liability	20	Core	Sem 2	Y1	CC
Level 4	AUR4A1	Construction Technology	20	Core	Sem 2	Y1	CC
Level 4	AUR498	Work Based Learning 1	10	Core	Sem 1 & 2	Y1	WU
Choose ONE out of 4 optional modules listed below							
Level 4	AUR493	Construction Management 1	10	Option	Sem 1	Y1	CC
Level 4	AUR494	Quantity Surveying 1	10	Option	Sem 1	Y1	CC
Level 4	AUR495	Civil Engineering Design	10	Option	Sem 1	Y1	CC
Level 4	AUR491	Architectural Design Technology	10	Option	Sem1	Y1	CC
Level 4	AUR4A4	Digital Technologies in Surveying	20	Core	Sem 1	Y2	CC
Level 5	AUR599	Building Surveying 2	20	Core	Sem 1 & 2	Y2	CC
Level 5	AUR5A3	Modern Methods of Construction	20	Core	Sem 1 & 2	Y2	CC
Level 5	AUR5A4	Commercial Management	20	Core	Sem 1 & 2	Y2	CC
Level 5	AUR5A9	Work Based Learning 2	20	Core	Sem 1 & 2	Y2	WU
Level 5	AUR5A5	Building Services	20	Core	Sem 1 & 2	Y3	WU
Level 5	AUR5B3	Procurement and Contract Practice	20	Core	Sem 1 & 2	Y3	WU
Level 6	AUR697	Project Management	20	Core	Sem 1	Y3	WU
Level 6	AUR6A2	Design for Climate Resilience	20	Core	Sem 1	Y3	WU
Level 6	AUR698	Individual Research Project	20	Core	Sem 1	Y4	WU
Level 6	AUR6A4	Professional Practice 3	20	Core	Sem 1 & 2	Y4	WU
Level 6	AUR6A3	Major Project	40	Core	Sem 1 & 2	Y4	WU

BEng (Hons) Civil Engineering Degree Apprenticeship delivery

Level	Module Code	Module Title	Credit Value	Core/Option	Delivery (i.e. semester 1,2)	Year of Study	Delivery Team
Level 4	AUR499	Science and Materials	20	Core	Sem 1	Y1	CC
Level 4	AUR495	Civil Engineering Design	10	Core	Sem 1	Y1	CC
Level 4	AUR4A2	Geotechnics	20	Core	Sem 2	Y1	CC
Level 4	ENG495	Analytical Engineering Techniques	20	Core	Sem 1 & 2	Y1	CC
Level 4	AUR4A3	Structural Mechanics	10	Core	Sem 2	Y1	CC
Choose ONE out of 2 optional modules listed below							
Level 4	AUR496	Digital Technologies in Drawing and Modelling	10	Option	Sem 1	Y1	CC
Level 4	AUR494	Quantity Surveying 1	10	Option	Sem1	Y1	CC
Level 4	AUR498	Work Based Learning 1	10	Core	Sem 1 & 2	Y1	WU
Level 4	AUR4A4	Digital Technologies in Surveying	20	Core	Sem 1	Y2	CC
Level 5	AUR5A6	Civil Engineering Mathematics	20	Core	Sem 1	Y2	CC
Level 5	AUR5A7	Water Resource Management	20	Core	Sem 1	Y2	CC
Level 5	AUR5A9	Work Based Learning 2	20	Core	Sem 1 & 2	Y2	WU
Choose ONE out of 2 optional modules listed below							
Level 5	AUR5A8	Infrastructure and the Environment	20	Option	Sem 2	Y2	CC
Level 5	ENG5B2	Wind and Hydro Energy Engineering	20	Option	Sem 2	Y2	CC
Level 5	ENG5A5	Mechanics, Structures & FEA	20	Core	Sem 1 & 2	Y3	WU
Level 5	AUR5B3	Procurement and Contract Practice	20	Core	Sem 1 & 2	Y3	WU
Level 6	AUR697	Project Management	20	Core	Sem 1	Y3	WU
Level 6	AUR698	Individual Research Project	20	Core	Sem 2	Y3	WU
Level 6	AUR6A2	Design for Climate Resilience	20	Core	Sem 1	Y4	WU
Level 6	AUR699	Advanced Materials	10	Core	Sem 1	Y4	WU
Level 6	AUR6A1	Flood Risk Management	10	Core	Sem 2	Y4	WU
Level 6	AUR6A3	Major Project	40	Core	Sem 1 & 2	Y4	WU

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BSc (Hons) Construction Management Degree Apprenticeship delivery

Level	Module Code	Module Title	Credit Value	Core/Option	Delivery (i.e. semester 1,2)	Year of Study	Delivery Team
Level 4	AUR496	Digital Technologies in Drawing and Modelling	10	Core	Sem 1	Y1	CC
Level 4	AUR493	Construction Management 1	10	Core	Sem 1	Y1	CC
Level 4	AUR499	Science and Materials	20	Core	Sem 1	Y1	CC
Level 4	AUR497	Legal Principles, Compliance and Liability	20	Core	Sem 2	Y1	CC
Level 4	AUR4A1	Construction Technology	20	Core	Sem 2	Y1	CC
Level 4	AUR498	Work Based Learning 1	10	Core	Sem 1 & 2	Y1	WU
Choose ONE out of 4 optional modules listed below							
Level 4	AUR492	Building Surveying 1	10	Option	Sem 1	Y1	CC
Level 4	AUR491	Architectural Design Technology 1	10	Option	Sem 1	Y1	CC
Level 4	AUR494	Quantity Surveying 1	10	Option	Sem 1	Y1	CC
Level 4	AUR495	Civil Engineering Design	10	Option	Sem 1	Y1	CC
Level 4	AUR4A4	Digital Technologies in Surveying	20	Core	Sem 1	Y2	CC
Level 5	AUR5A1	Construction Management 2	20	Core	Sem 1 & 2	Y2	CC
Level 5	AUR5A3	Modern Methods of Construction	20	Core	Sem 1 & 2	Y2	CC
Level 5	AUR5A4	Commercial Management	20	Core	Sem 1 & 2	Y2	CC
Level 5	AUR5A9	Work Based Learning 2	20	Core	Sem 1 & 2	Y2	WU
Level 5	AUR5A5	Building Services	20	Core	Sem 1 & 2	Y3	WU
Level 5	AUR5B3	Procurement and Contract Practice	20	Core	Sem 1 & 2	Y3	WU
Level 6	AUR697	Project Management	20	Core	Sem 1	Y3	WU
Level 6	AUR6A2	Design for Climate Resilience	20	Core	Sem 1	Y3	WU
Level 6	AUR698	Individual Research Project	20	Core	Sem 1	Y4	WU
Level 6	AUR6A4	Professional Practice 3	20	Core	Sem 1 & 2	Y4	WU
Level 6	AUR6A3	Major Project	40	Core	Sem 1 & 2	Y4	WU

BSc (Hons) Quantity Surveying Degree Apprenticeship delivery

Level	Module Code	Module Title	Credit Value	Core/Option	Delivery (i.e. semester 1,2)	Year of Study	Delivery Team
Level 4	AUR496	Digital Technologies in Drawing and Modelling	10	Core	Sem 1	Y1	CC
Level 4	AUR499	Science and Materials	20	Core	Sem 1	Y1	CC
Level 4	AUR494	Quantity Surveying 1	10	Core	Sem 1	Y1	CC
Level 4	AUR497	Legal Principles, Compliance and Liability	20	Core	Sem 2	Y1	CC
Level 4	AUR4A1	Construction Technology	20	Core	Sem 2	Y1	CC
Level 4	AUR498	Work Based Learning 1	10	Core	Sem 1 & 2	Y1	WU
Choose ONE out of 4 optional modules listed below							
Level 4	AUR493	Construction Management 1	10	Option	Sem 1	Y1	CC
Level 4	AUR491	Architectural Design Technology 1	10	Option	Sem 1	Y1	CC
Level 4	AUR492	Building Surveying 1	10	Option	Sem 1	Y1	CC
Level 4	AUR495	Civil Engineering Design	10	Option	Sem 1	Y1	CC
Level 4	AUR4A4	Digital Technologies in Surveying	20	Core	Sem 1	Y2	CC
Level 5	AUR5A2	Quantity Surveying 2	20	Core	Sem 1 & 2	Y2	CC
Level 5	AUR5A4	Commercial Management	20	Core	Sem 1 & 2	Y2	CC
Level 5	AUR5A3	Modern Methods of Construction	20	Core	Sem 1 & 2	Y2	CC
Level 5	AUR5A9	Work Based Learning 2	20	Core	Sem 1 & 2	Y2	WU
Level 5	AUR5A5	Building Services	20	Core	Sem 1 & 2	Y3	WU
Level 5	AUR5B3	Procurement and Contract Practice	20	Core	Sem 1 & 2	Y3	WU
Level 6	AUR697	Project Management	20	Core	Sem 1	Y3	WU
Level 6	AUR6A2	Design for Climate Resilience	20	Core	Sem 1	Y3	WU
Level 6	AUR698	Individual Research Project	20	Core	Sem 1	Y4	WU
Level 6	AUR6A4	Professional Practice 3	20	Core	Sem 1 & 2	Y4	WU
Level 6	AUR6A3	Major Project	40	Core	Sem 1 & 2	Y4	WU

9. Intended learning outcomes of the programme

9.1 BSc (Hons) Building Surveying

Knowledge and Understanding				
	Level 4	Level 5	Level 6	Level 6 (Hons)
A1	Understand the management of construction processes as they relate to the project from inception to recycling Understanding corporate organisations, industry, clients and society	Apply knowledge of the construction, maintenance and adaptation process to the management of projects and the selection of procurement methodology	Analyse and solve problems relating to the construction process.	
A2	Understand the role and responsibilities of people involved in the construction process.	Explain how human resource/people management methods affect the construction process. For example: <ul style="list-style-type: none"> • Employee Relations Frameworks • recruitment and selection of personnel • time management • Considerate Constructors • people, motivation and behaviour • performance management and appraisal • teams and integrated teams • leadership and leadership styles • inclusion and equality • training and development 	Evaluate Organisational HRM policies to ensure fair treatment of all personnel. Evaluate different leadership styles at: <ul style="list-style-type: none"> • Project level • Organisational level • National level 	Review HRM approaches to ensure effective harmonious working environments.
A3	Appreciate the importance of understanding the person. Understand how the construction process impacts on individual welfare, wellbeing and inclusion.	Apply person understanding to the development of a variety of processes, including: <ul style="list-style-type: none"> • stress management • negotiation • individual and team conflict resolution 	Evaluate the application of individual person understanding to change management in construction organisations.	
A4	Understand the importance of time, cost and resource management to complete projects effectively. Be aware of external benchmarks such as CIOB Good Practice in Management of Time in Complex Projects and Codes of Practice.	Demonstrate the ability to use a range of digital planning tools, to apply them to construction processes including: <ul style="list-style-type: none"> • project planning • critical path analysis • resource levelling 	Evaluate and apply different project management techniques to complex projects: <ul style="list-style-type: none"> • progress and completion • management and decision processes • Project Evaluation and Review Technique (PERT) • risk analysis • Building Information Modelling (BIM) 	
A5	Define performance management for process improvement, including definition and use of Key Performance	Apply Key Performance Indicators (KPIs) to a construction project.	Evaluate and apply different performance management techniques to complex projects. For example:	

Knowledge and Understanding				
	Level 4	Level 5	Level 6	Level 6 (Hons)
	Indicators (KPIs)		<ul style="list-style-type: none"> • procurement and contract performance • process improvement • incentivisation • best practices and feedback and reflection • business and market development, product development and research/ innovation management 	
A6	Appreciate the role of the Construction Manager (e.g. Bale, 2010) in an international context, including: <ul style="list-style-type: none"> • management, development, conservation and improvement of the built environment • role of the professional manager in construction 		Recommend improvements to practice to further enhance the image and efficiency of the construction industry.	
	Demonstrate an understanding of professional Codes of Conduct and ethics, including CIOB's Rules and Regulations of Professional Competence and Conduct	Discuss the issues relating to the application of ethical behaviour and Codes of Conduct.		
	Understand the CIC Essential Principles for achieving an accessible and inclusive environment.	Apply CIC Essential Principles for achieving an accessible and inclusive environment.		
	Recognise the need for online security of personal and project-specific information.	Understand the methods used to provide online security of personal and project specific information.		
	Awareness of the intellectual property rights associated with built assets.	Understand the application of intellectual property rights to a built asset.		
A7	Demonstrate an awareness of the meaning and relevance of the nine 'Protected characteristics' defined in the Equality Act 2010. These include age,	Give examples and prepare plans for the application of ethical and inclusive practice in the built environment workplace, demonstrating consideration	Analyse the role and value of openness and transparency versus confidentiality and commercial sensitivity, i.e. Whistleblowing	

Knowledge and Understanding				
	Level 4	Level 5	Level 6	Level 6 (Hons)
	disability, gender reassignment marriage and civil partnership, pregnancy and maternity, race, religion and belief, sex and sexual orientation.	of people as clients, customers and consumers of built environment 'products' and services.	Examine company, industry or government policies for inclusivity and their value to the construction industry.	
A8	Describe the principles of fair trade and fair economy.	Apply professional standards of reporting and accountancy. Demonstrate understanding of the need for honesty and accuracy in reporting.	Review and recommend national and international procedures to comply with professional obligations, e.g. bribery, money laundering.	
A9	Identify responsibilities in relation to Governance and Corporate Social Responsibility within public and private bodies and to individuals, including modern slavery such as CIOB's Modern Slavery Toolkit: http://stronger2gether.org/construction/	Apply ethical frameworks as an aid to decision making.	Compare the Governance and Corporate Social Responsibility of organisations and the wider society. Evaluate company decisions from individual and professional ethical perspectives.	
A10	Identify personal strengths, understanding of self and areas for development.	Prepare a self-development plan with provision for review and reflection.	Implement a review of and reflection on self-development and self-awareness.	
A11	Understand the legal environment and terminology of health and safety as it applies to the design and management of construction projects. Understand the importance and management of construction health, safety and wellbeing.	Prepare a risk assessment, Understand the roles of the main parties in the CDM Regulations, with particular emphasis on the Principal Contractor.	Critically evaluate health and safety legislation from a corporate perspective.	
A12	Understand the importance of and provide an overview of the duties of all persons involved in construction projects with regard to health, safety and wellbeing.	Appraise a range of case studies and statistical data regarding accidents and review impact as well as causes and effects.	Reflect on personal responsibility for health, safety and wellbeing at all levels within an organisation and the consequences of action and inaction.	
A13	Demonstrate an understanding of the various health and safety management tools and techniques, and recent	In the context of design and construction, identify and manage both potential and actual health, safety and wellbeing hazards and risks.	Critically evaluate health and safety management procedures on a variety of projects.	

Knowledge and Understanding				
	Level 4	Level 5	Level 6	Level 6 (Hons)
	developments in health, safety and wellbeing management and training.			
A14	Understand the issues associated with the management of wellbeing and safety culture in construction.	Identify the barriers associated with establishing and maintaining an organisation's health, safety and wellbeing culture and practices.	Analyse how the Construction Industry should enhance competence, behaviour and commitment to health, safety and wellbeing in both the design and management of construction projects.	
A15	Demonstrate an understanding of: <ul style="list-style-type: none"> • social sustainability and quality of life • economic sustainability • environmental sustainability For example – Brundtland Report, environmental impact, low and zero carbon, energy generation. 	Explain the scale of the Built Environment's impact on the environment.	Analyse the main sustainability impacts that a building has over the duration of its life cycle, from design through construction, use, refurbishment and adaptation to demolition and disposal.	
A16	In relation to sustainable development demonstrate an understanding of: <ul style="list-style-type: none"> • issues • terminology • policy • legislation • design 	Describe the key legislative drivers which seek to minimise the impact of construction industry activity and the built environment.	Examine the Construction Industry's challenges, opportunities and responsibilities with regards to the three themes of sustainability: <ul style="list-style-type: none"> • social sustainability and quality of life • economic sustainability • environmental sustainability 	
A17	Recognise the impact on a building's carbon emissions of providing a comfortable and healthy internal environment through the provision of: <ul style="list-style-type: none"> • heating and cooling • air tightness and quality • lighting quality 	Explain key principles of 'low energy', 'passive' design and 'healthy' buildings.	Undertake cost-benefit and feasibility analysis of carbon issues in relation to building design and operational management.	
			Make comparisons between predicted and actual sustainability performance of buildings	
A18	Understand key principles of environmental impact and energy/carbon assessment methodologies.	Apply appropriate environmental impact and/or carbon/energy assessment techniques.	Carry out an impact assessment of the provision of a comfortable and healthy internal environment on a building's carbon emissions.	
			Critically appraise carbon/energy assessment techniques.	

Knowledge and Understanding				
	Level 4	Level 5	Level 6	Level 6 (Hons)
A19	Demonstrate an understanding of the sources of waste in the built environment including: <ul style="list-style-type: none">• material waste and re-cycling• labour resourcing.	Develop and apply policies to establish responsible sourcing and eliminate waste within the lifecycle of a construction project.	Evaluate techniques available to reduce all waste and enhance recycling including lean construction, resource efficiency and the adoption of the circular economy for sustainability.	
A20	Identify and explain how construction sites and operations impact on the environment.	Identity and apply appropriate methods to mitigate negative sustainability impacts during the construction process.		
A21	Evaluate the importance of sustainability with regards to Clients' Corporate Social Responsibility, vision, image and Key Performance Indicators.			
A22	In relation to the national and international construction industry, understand and appreciate its: <ul style="list-style-type: none">• historical development• scale, structure and output• future opportunities	Identify the appropriate stakeholders involved in the construction process and their relevant roles and responsibilities	Review threats and opportunities for the future development of the construction industry.	
		Recognise the collaborative linkages and interdisciplinary relationships between the functions of construction and the other disciplines of the built environment		
A23	Describe the role of the construction industry in the economic and social wellbeing of a country and the provision of an inclusive society.	Understand and appreciate the social, inclusive and political issues which impact on planning, design and development of the built environment.	Appraise and evaluate the influence of current issues including, sustainability, health & safety internationalisation and inclusion on the social and economic aspects of construction activity worldwide.	
A24	Understand and describe the principles of: <ul style="list-style-type: none">• the legal system related to construction activity• the law of contract and tort• statutory control of construction activity including planning regulations• insurance	Describe and characterise the legal obligations and procedures in relation to the design, construction and operation stages associated with: <ul style="list-style-type: none">• contracts and their administration• planning• employment• environment• design	Analyse the impact that legal obligations have on the construction management process.	
			Appraise and evaluate alternative dispute resolution processes.	

Knowledge and Understanding				
	Level 4	Level 5	Level 6	Level 6 (Hons)
A25	Understand and describe the principles of: <ul style="list-style-type: none">• macro and micro economics• supply and demand• market structure and operation	Compare, appraise and select different procurement processes for construction activity.	Examine the opportunities and problems for a construction company operating in the global market place.	
		Understand and appreciate the global market for construction from a commercial perspective.		
A26	Understand and describe the principles of: <ul style="list-style-type: none">• finance for construction organisation and activities• cash flow	Apply financial information as it relates to the management of construction projects: <ul style="list-style-type: none">• cash flow, cost and finance from inception to demolition• tender evaluation• value management /engineering• whole life costing• decision making	Implement procedures and practices associated with the settlement of final accounts, claims and dispute resolution.	Appraise and evaluate the financial management of corporate enterprises and professional practices.
A27	In relation to the development process, understand and appreciate: <ul style="list-style-type: none">• stages in the process• role of construction professionals within the process• responsibility for ensuring designs are inclusive use of digital technologies and information management	Compare, appraise and select different construction materials, products and processes from both an initial cost and whole life cost perspective.	Demonstrate an appreciation of property and infrastructure development in relation to financial and legal aspects including development viability and appraisal.	
		Compare and appraise the use of digital technologies and information management.	Evaluate the importance and challenges of working in a collaborative environment and the integration of design, costing and scheduling.	
A28	Undertake the measurement of land and construction work both on plan, through the use of digital information modelling or onsite	Produce examples of price and cost estimation for construction activities from feasibility through to final accounts.	Critical appraisal of electronic measurement and estimating systems	
	Understand the principles of price and cost estimation for construction activities.	Produce detailed measurement using a range of standard methods of measurement.		

Knowledge and Understanding				
	Level 4	Level 5	Level 6	Level 6 (Hons)
A29	Describe and illustrate the functional and performance requirements of simple buildings.	Describe and illustrate the functional and performance requirements of framed and complex buildings.	Evaluate and challenge the use of proposed technologies against the need for contemporary and innovative solutions to achieve integration, buildability, speed, cost, health and safety, inclusion and quality criteria applied to case study buildings.	
		Understand, describe, select and illustrate alternative options available for the onsite or offsite construction of primary and secondary building elements of framed and complex buildings including those with basements.		
	Understand, describe, select and illustrate alternative options available for the construction of primary and secondary building elements of simple buildings and the necessary site set-up.	Undertake design option appraisal to ensure adherence to current building legislation including the conservation of energy, carbon emissions, inclusion, accessibility, security and structural performance control.	Examine the potential and use of sustainable technologies applied to case study buildings.	
A30	Understand and appreciate the function and design of building services for a simple building to ensure human comfort.	Recognise and appreciate the function and design of complex building services including those where the whole building operates as a building services system.	Examine and select suitable solutions, including renewable technologies for building services in the context of a development project.	
A31	Demonstrate a knowledge of common defects and refurbishment technologies to restore a building for contemporary use.	Discuss the refurbishment and adaptation options applicable to the upgrading of or changing the use of a building.	Investigate and propose methods to future proof buildings.	
A32	Understand site investigation techniques. Awareness of issues surrounding contaminated land and brownfield sites.	Apply principles of site investigation to assess the suitability of sites for construction projects	Analyse the effectiveness of site investigation techniques in preventing unforeseen problems in the construction phase of a project.	
A33	Explain the basic principles of land surveying.	Demonstrate competence in geomatics.		
A34	Describe the properties of building materials and understand their performance characteristics with regard to the natural environment and their impact upon it, including hazardous materials.	Analyse the performance of materials in use, based upon their scientific properties and the environment and conditions in which they are used.	Evaluate the viability of ethically sourcing construction materials and possible effects this may have on the construction process.	

Knowledge and Understanding				
	Level 4	Level 5	Level 6	Level 6 (Hons)
A35	Demonstrate knowledge of performance maintenance technology and maintenance management, e.g. BMS	Apply and evaluate various maintenance technologies and maintenance management systems as appropriate to various building types, for example; domestic, commercial, industrial, public.		
A36	N/A	N/A	Research a contemporary construction built environment issue.	
			Demonstrate an ability to select and apply appropriate ethical research methods.	
			Analyse, synthesise and evaluate a key issue affecting the built environment.	

Intellectual Skills				
	Level 4	Level 5	Level 6	Level 6 (Hons)
B1	Summarise information from a variety of sources	Analyse information from a variety of sources	Critically analyse information from a variety of sources	Synthesise information from a variety of sources
B2	Recognise appropriate theories, methodologies, concepts and principles from a range of subjects	Use appropriate theories, methodologies, concepts and principles from a range of subjects	Test appropriate theories, methodologies, concepts and principles from a range of subjects	Use and evaluate appropriate theories, methodologies, concepts and principles from a range of subjects
B3	collect several lines of evidence to develop arguments	Collect and analyse several lines of evidence to develop balanced arguments	collect, analyse and integrate several lines of evidence to develop balanced arguments demonstrating critical thinking	Collect, analyse, integrate and evaluate several lines of evidence to develop balanced arguments demonstrating critical thinking and synthesis
B4	plan an experiment, investigation, survey or other means to test a hypothesis or proposition	plan and design an experiment, investigation, survey or other means to test a hypothesis or proposition	Plan, design and implement an experiment, investigation, survey or other means to test a hypothesis or proposition	Plan, design, implement and evaluate an experiment, investigation, survey or other means to test a hypothesis or proposition
B5	Indicate knowledge and understanding to address multidisciplinary problems within a local and global context	Demonstrate knowledge and understanding to address multidisciplinary problems within a local and global context	Apply knowledge and understanding to address multidisciplinary problems within a local and global context	Apply knowledge and understanding to address multidisciplinary problems within a local and global context and evaluate outcomes
B6	Indicate an ability to be creative and innovative	Demonstrate creativity and innovation	Demonstrate creativity and innovation and reflect upon outcomes	Demonstrate creativity and innovation and evaluate outcomes

Intellectual Skills				
	Level 4	Level 5	Level 6	Level 6 (Hons)
B7	Indicate an awareness of the provisional nature of the facts and principles associated with a field of study with those based on opinion and not supported by sound evidence	Demonstrate awareness of the provisional nature of the facts and principles associated with a field of study with those based on opinion and not supported by sound evidence	Demonstrate awareness of the provisional nature of the facts and principles associated with a field of study with those based on opinion and not supported by sound evidence, and reflect upon associated implications	Demonstrate awareness of the provisional nature of the facts and principles associated with a field of study with those based on opinion and not supported by sound evidence, and evaluate implications
B8	Suggest considered decisions in complex and unpredictable contexts	Make well considered decisions in complex and unpredictable contexts	Make well considered decisions in complex and unpredictable contexts and reflect upon outcomes	Make well considered decisions in complex and unpredictable contexts and evaluate outcomes
B9	Indicate an understanding of the importance of academic and professional integrity.	Demonstrate the importance of academic and professional integrity.	Demonstrate the importance of academic and professional integrity.	Demonstrate the importance of academic and professional integrity.

Subject Skills				
	Level 4	Level 5	Level 6	Level 6 (Hons)
C1	Recognise the performance requirements of buildings and facilities	Demonstrate an appreciation of the performance requirements of buildings and facilities	Critically appraise the performance requirements of buildings and facilities	Evaluate the performance requirements of buildings and facilities and make recommendations to enhance future performance
C2	Identify the technical factors affecting the design and construction of buildings	Describe the technical factors affecting the design and construction of buildings	Analyse the technical factors affecting the design and construction of buildings	Evaluate the technical factors affecting the design and construction of buildings
C3	Recognise that differing design options may be employed in the construction of buildings	Analyse the differing design options employed in the construction of buildings	Analyse the design options that may be employed in the construction of buildings	Select and justify design options that may be employed in the construction of buildings
C4	Demonstrate an awareness of the mainstream technology for constructing domestic, industrial and commercial buildings	Describe the mainstream technology for constructing domestic, industrial and commercial buildings	Critically appraise the mainstream technology for constructing domestic, industrial and commercial buildings	Evaluate and recommend the mainstream technology for constructing domestic, industrial and commercial buildings
C5	Identify the broad categories of building components and materials together with the pathological processes resulting in their degradation and failure	Describe the broad categories of building components and materials together with the pathological processes	Analyse the broad categories of building components and materials together with the pathological processes	Select and justify the broad categories of building components and materials together with the pathological processes

Subject Skills				
	Level 4	Level 5	Level 6	Level 6 (Hons)
C6	Recognise the broad approaches available to manage, repair and maintain buildings and facilities	Describe the broad approaches available to manage, repair and maintain buildings and facilities	Select the broad approaches available to manage, repair and maintain buildings and facilities	Analyse and evaluate the broad approaches available to manage, repair and maintain buildings and facilities
C7	Indicate an awareness of the legal and regulatory frameworks and systems impacting on the design, construction and occupancy of buildings and facilities	Demonstrate awareness of the legal and regulatory frameworks and systems impacting on the design, construction and occupancy of buildings and facilities	Analyse the legal and regulatory frameworks and systems impacting on the design, construction and occupancy of buildings and facilities	Select and justify the legal and regulatory frameworks and systems impacting on the design, construction and occupancy of buildings and facilities
C8	Recognise the socioeconomic factors influencing property development, construction and use	Describe the socioeconomic factors influencing property development, construction and use	Critically appraise the socioeconomic factors influencing property development, construction and use	Analyse and evaluate the socioeconomic factors influencing property development, construction and use
C9	Have an awareness of the environmental impact of buildings and facilities	Describe the environmental impact of buildings and facilities	Recommend mitigations to reduce the environmental impact of buildings and facilities	Analyse and evaluate the environmental impact of buildings and facilities
C10	Appreciate the nature of organisations that own and operate buildings	Articulate the nature of organisations that own and operate buildings	Critically appraise the nature of organisations that own and operate buildings	Analyse and evaluate the nature of organisations that own and operate buildings
C11	Be aware of the professional roles and responsibilities of key players in the property development cycle	Describe the professional roles and responsibilities of key players in the property development cycle	Analyse the professional roles and responsibilities of key players in the property development cycle	Analyse the professional roles and responsibilities of key players in the property development cycle
C12	Have an awareness of the main costs associated with the construction and use of buildings and facilities	Describe the main costs associated with the construction and use of buildings and facilities	Justify the main costs associated with the construction and use of buildings and facilities	Analyse the main costs associated with the construction and use of buildings and facilities
C13	Be aware of the professional and ethical frameworks associated with the development and use of buildings and facilities	Articulate the professional and ethical frameworks associated with the development and use of buildings and facilities	Select and justify the professional and ethical frameworks associated with the development and use of buildings and facilities	Analyse and evaluate of the professional and ethical frameworks associated with the development and use of buildings and facilities
C14	Have an understanding of the principles and processes that deliver an inclusive environment	Demonstrate an understanding of the principles and processes that deliver an inclusive environment recognising	Critically appraise the principles and processes that deliver an inclusive environment recognising the	Analyse and evaluate of the principles and processes that deliver an inclusive environment recognising the

Subject Skills				
	Level 4	Level 5	Level 6	Level 6 (Hons)
	recognising the diversity of user needs by putting people (of all ages and abilities) at the heart of the building surveying process.	the diversity of user needs by putting people (of all ages and abilities) at the heart of the building surveying process.	diversity of user needs by putting people (of all ages and abilities) at the heart of the building surveying process.	diversity of user needs by putting people (of all ages and abilities) at the heart of the building surveying process.

Practical, Professional and Employability Skills				
	Level 4	Level 5	Level 6	Level 6 (Hons)
D1	plan, conduct and present an independent investigation with significant guidance			
D2	relate investigations to some prior work and reference it appropriately			
D3	where appropriate, use laboratory and field equipment safely			
D4	apply a range of methods to solve problems			
D5	use appropriate technologies to address problems			
D6	where appropriate, describe and record in the field and laboratory			
D7	interpret practical results with guidance			
D8	present results of investigations in a number of formats			
D9	apply survey measurements and evaluation techniques as appropriate to the course			
D10	recognise and record visual information when on site or from graphical sources			
D11	apply professional judgement in drawing skills and knowledge together and applying them to real world problems			
D12	recognise when information is incomplete			
D13	appreciate risk			
D14	process and interpret data and information			
D15	critically appraise spatial data			
D16	solve basic numerical problems using appropriate techniques			
D17	undertake simple statistical analysis			
D18	select and apply appropriate methods of collecting, analysing, and synthesising data			
D19	appreciate the importance of intellectual property and its role within the innovation process.			
D20	communicate to a variety of audiences in appropriate written, graphical, electronic and verbal forms			
D21	make contributions to group discussions			
D22	watch, listen and respond to others			
D23	negotiate and mediate with others			
D24	use social media for communication			
D25	use the internet for communication and information retrieval			
D26	handle electronic information with guidance, applying appropriate techniques, digital tools and applications to support key subjects			
D27	have an awareness of the safe, ethical and legal use of digital media			
D28	demonstrate the application of information technology and digital tools and techniques to support key subjects.			

Practical, Professional and Employability Skills				
	Level 4	Level 5	Level 6	Level 6 (Hons)
D29	make a constructive contribution to teamwork			
D30	identify individual goals			
D31	recognise and respect the views of others			
D32	recognise equality, diversity and inclusion in all its forms			
D33	reflect on team performance.			
D34	recognise and be able to comment on the moral and ethical issues associated with the subject			
D35	appreciate the need for professional codes of conduct			
D36	accept responsibility for their own learning			
D37	identify targets for personal, career and academic development			
D38	be adaptable and have a flexible approach to study and work			
D39	develop skills necessary for self-managed, independent and lifelong learning			
D40	recognise personal strengths and weaknesses.			
D41 (WbL)	Present information effectively to audiences			
	Demonstrate effective meeting skills			
	Demonstrate effective interpersonal skills and informal communication			
D42 (WbL)	Identify and determine solutions to problems			
D43 (WbL)	Investigate problems, causes and effects within the job role			
	Identify and gather all necessary information required to carry out tasks within the job role			
	Process information effectively to meet work objectives			
D44 (WbL)	Identify actions to remedy incorrect or insufficient information			
	Identify the various procurement procedures within your organisation			
	Demonstrate the ability to identify and manage risk			
	Demonstrate effective budget control and identify budget constraints			
D45 (WbL)	Demonstrate effective time management			
	Demonstrate effective team working			
	Demonstrate the ability to deal with conflict in teams			
D46 (WbL)	Set and review work objectives			
	Plan activities and work methods			
	Monitor and control work activities			
D47 (WbL)	Identify job responsibilities and practices under health, safety and welfare legislation			
	Identify and describe the implementation of risk control measures			
D48 (WbL)	Investigate the quality of a product, service or process			
	Undertake an investigation for the organisation			
D49 (WbL)	Identify and evaluate the company's policies and practices in sustainable building			
	Identify ways of protecting the workplace and surrounding environments			

Practical, Professional and Employability Skills				
	Level 4	Level 5	Level 6	Level 6 (Hons)
D50 (WbL)	Identify the impact/consequences of making decisions			
	Demonstrate an understanding of construction and relevant civil law			

9.2 BSc (Eng) Civil Engineering

Knowledge and Understanding				
	Level 4	Level 5	Level 6	Level 6 (Hons)
A1	Develop an understanding of mathematics and statistics relevant to civil engineering problems.	Apply mathematical concepts or principles to analyse broadly- defined civil engineering problems.	Apply mathematical principles and analytical techniques to integrated civil engineering problems.	Apply mathematical and engineering principles to analyse broadly- defined problems, reaching substantiated conclusions.
A2	Identify and explain natural science and engineering principles relevant to Civil Engineering.	Using engineering and scientific principles, demonstrate analysis of broadly defined problems.	Apply knowledge and experience of science and engineering principles to investigate and solve civil engineering problems, reaching substantiated conclusions.	Demonstrate a wide knowledge and a comprehensive understanding of civil engineering principles to solve broadly defined problems, reaching substantiated conclusions.
A3	Develop an awareness of current technologies, technical literature, and other sources of information relevant to Civil Engineering.	Apply current technologies and technical literature relevant to Civil Engineering and develop an awareness of the sustainability implications with respect to United Nations Sustainable Development Goals.	Select and apply current technologies and technical literature relevant to Civil Engineering and consider the impact of the United Nations Sustainable Development Goals.	Display a critical awareness of current issues and prospects at the forefront of the discipline, recognizing the limitations of technologies employed and the implications on the Climate Emergency and Decarbonisation.
A4	Use appropriate computational and analytical techniques/tools to solve engineering problems.	Select appropriate computational and analytical techniques/tools to solve civil engineering problems.	Select and apply appropriate computational and analytical techniques/tools to solve broadly-defined civil engineering problems.	Select and evaluate appropriate computational and analytical techniques/tools to solve broadly-defined civil engineering problems.
A5	Develop an awareness of conceptual options and design solutions through generating ideas and sketching.	Produce sustainable design solutions/options that meet user, business, and client. This will include consideration of technical, social, cultural, environmental and health and safety aspects.	Produce sustainable design solutions/options that meet user, business and client. This will include consideration of technical, economic, social, cultural, environmental and health and safety aspects. Demonstrate engineering judgement.	Produce sustainable design solutions/options that meet user, business and client. This will include consideration of technical, economic, social, cultural, environmental and health and safety aspects. Demonstrate engineering judgement.

Intellectual Skills				
	Level 4	Level 5	Level 6	Level 6 (Hons)
B1	Work with information that may be incomplete or uncertain, identifying constraints.	Work with information that may be incomplete or uncertain, identifying constraints and offering solutions.	Identify and analyse problems and use methods to recognise causes and achieve satisfactory solutions.	Critically evaluate problem solving and justify and reflect on solutions.
B2	Demonstrate knowledge of appropriate resources, materials, equipment, engineering technologies and processes for tasks or projects.	Plan and use appropriate resources, materials, equipment, engineering technologies and processes to complete tasks or projects.	Select and apply appropriate resources, materials, equipment, engineering technologies and processes to meet the project brief and achieve safe, resilient, and sustainable engineering solutions. Demonstrate the ability to challenge norms.	Critically assess the resources and techniques used to meet project brief and achieve resilient and sustainable engineering solutions. Challenge norms and recommend new techniques or use of resources to client/stakeholders.
B3	Apply a systematic approach to the solution of broadly defined problems.	Apply an integrated or systems approach to the solution of broadly defined problems.	Apply an integrated or systems approach to the solution of broadly defined problems.	Apply an integrated or systems approach to the solution of broadly defined problems.
B4	Demonstrate the ability to apply qualitative and quantitative methods to understand the performance of materials, systems and components.	Demonstrate the ability to apply qualitative and quantitative methods to understand the performance of materials, systems, and components to offer carbon critical design and construction solutions.	Demonstrate the ability to apply qualitative and quantitative methods to understand the performance of materials, systems and components to offer carbon critical design and construction solutions.	Demonstrate the ability to apply qualitative and quantitative methods to offer carbon critical design and construction solutions and give consideration to deconstruction and adaptability.

Subject Skills				
	Level 4	Level 5	Level 6	Level 6 (Hons)
C1	Conduct a given experiment, investigation, study, or other means to test engineering principles and properties of materials, a hypothesis or proposition.	Devise an experiment, investigation, study, or other means to test engineering principles and properties of materials, a hypothesis or proposition.	Plan, design, test and evaluate an experiment, investigation, study, or other means to test a hypothesis or proposition.	Conduct and analyse experiments, investigation, study, or other means to test a hypothesis or proposition and analyse results, drawing comprehensive conclusions.
C2	Develop an understanding of engineering project management principles.	Apply knowledge of project management principles and commercial risk.	Apply knowledge of engineering project management principles, commercial, risk and environmental management.	Apply knowledge of engineering project management principles, commercial, risk and environmental management.

Subject Skills				
	Level 4	Level 5	Level 6	Level 6 (Hons)
C3	Demonstrate knowledge of relevant legislation and contractual requirements specifically safety, health, well-being and environmental legislation such as Climate Change Act and Well-being of Future Generations (Wales) Act 2015.	Apply knowledge of relevant legislation and contractual requirements specifically safety, health, well-being and environmental legislation such as Climate Change Act and Well-being of Future Generations (Wales) Act 2015. Understand the role of regulating bodies such as Natural Resources Wales / Environment Agency.	Apply knowledge of relevant legislation and contractual requirements specifically safety, health, well-being and environmental legislation to a civil engineering project and consider the requirements of regulating bodies on the design, construction and operation of projects.	Apply knowledge of relevant legislation and contractual requirements specifically safety, health, well-being and environmental legislation to a civil engineering project and consider the requirements of regulating bodies on the design, construction and operation of projects.
C4	Undertake laboratory/fieldwork, gather, assimilate, and apply relevant knowledge and information for environmental and planning issues to include survey work and ground investigation.	Undertake workshop/laboratory/fieldwork, gather, assimilate, and apply relevant knowledge and information for environmental and planning issues to include flood risk assessment, sustainable urban drainage, wind and hydro energy generation and Infrastructure design.	Evaluate relevant knowledge and information to contribute to climate resilience solutions for civil engineering projects.	Evaluate relevant knowledge and information to contribute to climate resilience solutions for civil engineering projects.
C5	Identify risks/ uncertainty and environmental and societal impact associated with a project.	Identify and evaluate risks/uncertainty and environmental and societal impact associated with a project.	Use a management process to identify, evaluate and mitigate risk and to evaluate societal and environmental impacts (Life Cycle Analysis) for a project or activity.	Use a management process to identify, evaluate and mitigate risk and to evaluate societal and environmental impacts (Life Cycle Analysis) for a project or activity.
C6	Use technical literature, design codes and standards and other sources of information to address broadly defined problems.	Select and use technical literature, design codes and industry standards and other sources of information to address broadly defined problems.	Select and evaluate technical literature, design codes and industry standards and other sources of information and tools such as carbon databases to address broadly defined problems.	Select and evaluate technical literature, design codes and industry standards and other sources of information and tools such as carbon databases to support decision making.
C7	Appreciate control cost and budgets for engineering projects.	Apply knowledge of control cost and budgets for engineering projects and	Demonstrate how to manage, prepare, and control cost and budgets for	Demonstrate how to manage, prepare, and control cost and / budgets for

Subject Skills				
	Level 4	Level 5	Level 6	Level 6 (Hons)
	Be aware of commercial frameworks and contracts within own area of responsibility.	identify commercial frameworks and contracts within own area of responsibility.	engineering projects. Evidence knowledge of commercial frameworks and contracts within own area of responsibility.	engineering projects. Evidence knowledge of commercial frameworks and contracts within own area of responsibility.

Practical, Professional and Employability Skills				
	Level 4	Level 5	Level 6	Level 6 (Hons)
D1	Identify basic information and suitable sources, and bring information together in a way that ensures work is accurate and concise, in English and/or Welsh.	Use appropriate procedures to explore and develop information in English and/or Welsh. Communicate with technical and non- technical audiences.	Communicate effectively in writing, verbally and through visual representations in English and/or Welsh with technical and non-technical audiences.	Communicate effectively in writing, verbally and through visual representations in English and/or Welsh with technical and non-technical audiences.
D2	Demonstrate teamworking skills and have an awareness of equality, diversity, and inclusion benefits and ethical choices, informed by professional codes of conduct.	Demonstrate teamworking skills and have an awareness of equality, diversity, and inclusion benefits and ethical choices, informed by professional codes of conduct.	Demonstrate teamworking skills and management and have an awareness of equality, diversity, and inclusion benefits and ethical choices, informed by professional codes of conduct.	Demonstrate teamworking skills and management and have an awareness of equality, diversity, and inclusion benefits and ethical choices, informed by professional codes of conduct.
D3	Plan and record self- learning and development. Participate in relevant Professional Body activities including CPD.	Recognise own academic strengths and areas for improvement, reflect on performance. Participate in relevant Professional Body activities including CPD.	Recognise own academic strengths and areas for improvement, reflect on performance and self- management and management of others. Participate in relevant Professional Body activities including CPD.	Evaluate and reflect on own performance and self-management and management of others. Participate in relevant Professional Body activities including CPD.
D4	Adopt a holistic and proportionate approach to security of people and data.	Adopt a holistic and proportionate approach to security of people and data.	Adopt a holistic and proportionate approach to the management of security risk and the protection of Intellectual Property.	Adopt a holistic and proportionate approach to the management of security risk.
D5	Recognise the need for quality management systems and continuous improvements in the context of broadly defined problems.	Recognise the need for quality management systems and continuous improvements in the context of broadly defined problems.	Utilise quality management systems and continuous improvements in the context of broadly defined problems.	Utilise quality management systems and continuous improvements in the context of broadly defined problems.

Practical, Professional and Employability Skills				
	Level 4	Level 5	Level 6	Level 6 (Hons)
D6	Understanding of the importance of academic and professional integrity.	Demonstrate the importance of academic and professional integrity.	Demonstrate the importance of academic and professional integrity.	Demonstrate the importance of academic and professional integrity.

9.3 BSc (Hons) Construction Management

Knowledge and Understanding				
	Level 4	Level 5	Level 6	Level 6 (Hons)
A1	Understand the management of construction processes as they relate to the project from inception to recycling Understanding corporate organisations, industry, clients and society	Apply knowledge of the construction, maintenance and adaptation process to the management of projects and the selection of procurement methodology	Analyse and solve problems relating to the construction process.	
A2	Understand the role and responsibilities of people involved in the construction process.	Explain how human resource/people management methods affect the construction process. For example: <ul style="list-style-type: none"> • Employee Relations Frameworks • recruitment and selection of personnel • time management • Considerate Constructors • people, motivation and behaviour • performance management and appraisal • teams and integrated teams • leadership and leadership styles • inclusion and equality • training and development 	Evaluate Organisational HRM policies to ensure fair treatment of all personnel.	
			Evaluate different leadership styles at: <ul style="list-style-type: none"> • Project level • Organisational level • National level 	
			Review HRM approaches to ensure effective harmonious working environments.	
A3	Appreciate the importance of understanding the person.	Apply person understanding to the	Evaluate the application of individual person understanding to change management in construction organisations.	

Knowledge and Understanding				
	Level 4	Level 5	Level 6	Level 6 (Hons)
	Understand how the construction process impacts on individual welfare, wellbeing and inclusion.	development of a variety of processes, including: <ul style="list-style-type: none"> • stress management • negotiation • individual and team conflict resolution 		
A4	Understand the importance of time, cost and resource management to complete projects effectively. Be aware of external benchmarks such as CIOB Good Practice in Management of Time in Complex Projects and Codes of Practice.	Demonstrate the ability to use a range of digital planning tools, to apply them to construction processes including: <ul style="list-style-type: none"> • project planning • critical path analysis • resource levelling 	Evaluate and apply different project management techniques to complex projects: <ul style="list-style-type: none"> • progress and completion • management and decision processes • Project Evaluation and Review Technique (PERT) • risk analysis • Building Information Modelling (BIM) 	
A5	Define performance management for process improvement, including definition and use of Key Performance Indicators (KPIs)	Apply Key Performance Indicators (KPIs) to a construction project.	Evaluate and apply different performance management techniques to complex projects. For example: <ul style="list-style-type: none"> • procurement and contract performance • process improvement • incentivisation • best practices and feedback and reflection • business and market development, product development and research/ innovation management 	
A6	Appreciate the role of the Construction Manager (e.g. Bale, 2010) in an international context, including: <ul style="list-style-type: none"> • management, development, conservation and improvement of the built environment • role of the professional manager in construction 		Recommend improvements to practice to further enhance the image and efficiency of the construction industry.	

Knowledge and Understanding				
	Level 4	Level 5	Level 6	Level 6 (Hons)
	Demonstrate an understanding of professional Codes of Conduct and ethics, including CIOB's Rules and Regulations of Professional Competence and Conduct	Discuss the issues relating to the application of ethical behaviour and Codes of Conduct.		
	Understand the CIC Essential Principles for achieving an accessible and inclusive environment.	Apply CIC Essential Principles for achieving an accessible and inclusive environment.		
	Recognise the need for online security of personal and project-specific information.	Understand the methods used to provide online security of personal and project specific information.		
	Awareness of the intellectual property rights associated with built assets.	Understand the application of intellectual property rights to a built asset.		
A7	Demonstrate an awareness of the meaning and relevance of the nine 'Protected characteristics' defined in the Equality Act 2010. These include age, disability, gender reassignment marriage and civil partnership, pregnancy and maternity, race, religion and belief, sex and sexual orientation.	Give examples and prepare plans for the application of ethical and inclusive practice in the built environment workplace, demonstrating consideration of people as clients, customers and consumers of built environment 'products' and services.	Analyse the role and value of openness and transparency versus confidentiality and commercial sensitivity, i.e. Whistleblowing	
			Examine company, industry or government policies for inclusivity and their value to the construction industry.	
A8	Describe the principles of fair trade and fair economy.	Apply professional standards of reporting and accountancy.	Review and recommend national and international procedures to comply with professional obligations, e.g. bribery, money laundering.	
		Demonstrate understanding of the need for honesty and accuracy in reporting.		

Knowledge and Understanding				
	Level 4	Level 5	Level 6	Level 6 (Hons)
A9	Identify responsibilities in relation to Governance and Corporate Social Responsibility within public and private bodies and to individuals, including modern slavery such as CIOB's Modern Slavery Toolkit: http://stronger2gether.org/construction/	Apply ethical frameworks as an aid to decision making.	Compare the Governance and Corporate Social Responsibility of organisations and the wider society.	Evaluate company decisions from individual and professional ethical perspectives.
A10	Identify personal strengths, understanding of self and areas for development.	Prepare a self-development plan with provision for review and reflection.	Implement a review of and reflection on self-development and self-awareness.	
A11	Understand the legal environment and terminology of health and safety as it applies to the design and management of construction projects. Understand the importance and management of construction health, safety and wellbeing.	Prepare a risk assessment, Understand the roles of the main parties in the CDM Regulations, with particular emphasis on the Principal Contractor.	Critically evaluate health and safety legislation from a corporate perspective.	
A12	Understand the importance of and provide an overview of the duties of all persons involved in construction projects with regard to health, safety and wellbeing.	Appraise a range of case studies and statistical data regarding accidents and review impact as well as causes and effects.	Reflect on personal responsibility for health, safety and wellbeing at all levels within an organisation and the consequences of action and inaction.	
A13	Demonstrate an understanding of the various health and safety management tools and techniques, and recent developments in health, safety and wellbeing management and training.	In the context of design and construction, identify and manage both potential and actual health, safety and wellbeing hazards and risks.	Critically evaluate health and safety management procedures on a variety of projects.	

Knowledge and Understanding				
	Level 4	Level 5	Level 6	Level 6 (Hons)
A14	Understand the issues associated with the management of wellbeing and safety culture in construction.	Identify the barriers associated with establishing and maintaining an organisation's health, safety and wellbeing culture and practices.	Analyse how the Construction Industry should enhance competence, behaviour and commitment to health, safety and wellbeing in both the design and management of construction projects.	
A15	Demonstrate an understanding of: <ul style="list-style-type: none"> • social sustainability and quality of life • economic sustainability • environmental sustainability For example – Brundtland Report, environmental impact, low and zero carbon, energy generation.	Explain the scale of the Built Environment's impact on the environment.	Analyse the main sustainability impacts that a building has over the duration of its life cycle, from design through construction, use, refurbishment and adaptation to demolition and disposal.	
A16	In relation to sustainable development demonstrate an understanding of: <ul style="list-style-type: none"> • issues • terminology • policy • legislation • design 	Describe the key legislative drivers which seek to minimise the impact of construction industry activity and the built environment.	Examine the Construction Industry's challenges, opportunities and responsibilities with regards to the three themes of sustainability: <ul style="list-style-type: none"> • social sustainability and quality of life • economic sustainability • environmental sustainability 	
A17	Recognise the impact on a building's carbon emissions of providing a comfortable and healthy internal environment through the provision of: <ul style="list-style-type: none"> • heating and cooling • air tightness and quality • lighting quality 	Explain key principles of 'low energy', 'passive' design and 'healthy' buildings.	Undertake cost-benefit and feasibility analysis of carbon issues in relation to building design and operational management.	
			Make comparisons between predicted and actual sustainability performance of buildings	
A18	Understand key principles of environmental impact and energy/carbon assessment methodologies.	Apply appropriate environmental impact and/or carbon/energy assessment techniques.	Carry out an impact assessment of the provision of a comfortable and healthy internal environment on a building's carbon emissions.	
			Critically appraise carbon/energy assessment techniques.	

Knowledge and Understanding				
	Level 4	Level 5	Level 6	Level 6 (Hons)
A19	Demonstrate an understanding of the sources of waste in the built environment including: <ul style="list-style-type: none">• material waste and re-cycling• labour resourcing.	Develop and apply policies to establish responsible sourcing and eliminate waste within the lifecycle of a construction project.	Evaluate techniques available to reduce all waste and enhance recycling including lean construction, resource efficiency and the adoption of the circular economy for sustainability.	
A20	Identify and explain how construction sites and operations impact on the environment.	Identity and apply appropriate methods to mitigate negative sustainability impacts during the construction process.		
A21	Evaluate the importance of sustainability with regards to Clients' Corporate Social Responsibility, vision, image and Key Performance Indicators.			
A22	In relation to the national and international construction industry, understand and appreciate its: <ul style="list-style-type: none">• historical development• scale, structure and output• future opportunities	Identify the appropriate stakeholders involved in the construction process and their relevant roles and responsibilities	Review threats and opportunities for the future development of the construction industry.	
		Recognise the collaborative linkages and interdisciplinary relationships between the functions of construction and the other disciplines of the built environment		
A23	Describe the role of the construction industry in the economic and social wellbeing of a country and the provision of an inclusive society.	Understand and appreciate the social, inclusive and political issues which impact on planning, design and development of the built environment.	Appraise and evaluate the influence of current issues including, sustainability, health & safety internationalisation and inclusion on the social and economic aspects of construction activity worldwide.	
A24	Understand and describe the principles of:	Describe and characterise the legal obligations and procedures in relation to the design, construction	Analyse the impact that legal obligations have on the construction management process.	

Knowledge and Understanding				
	Level 4	Level 5	Level 6	Level 6 (Hons)
	<ul style="list-style-type: none"> the legal system related to construction activity the law of contract and tort statutory control of construction activity including planning regulations insurance 	and operation stages associated with: <ul style="list-style-type: none"> contracts and their administration planning employment environment design 	Appraise and evaluate alternative dispute resolution processes.	
A25	Understand and describe the principles of: <ul style="list-style-type: none"> macro and micro economics supply and demand market structure and operation 	Compare, appraise and select different procurement processes for construction activity. Understand and appreciate the global market for construction from a commercial perspective.	Examine the opportunities and problems for a construction company operating in the global market place.	
A26	Understand and describe the principles of: <ul style="list-style-type: none"> finance for construction organisation and activities cash flow 	Apply financial information as it relates to the management of construction projects: <ul style="list-style-type: none"> cash flow, cost and finance from inception to demolition tender evaluation value management /engineering whole life costing decision making 	Implement procedures and practices associated with the settlement of final accounts, claims and dispute resolution. Appraise and evaluate the financial management of corporate enterprises and professional practices.	
A27	In relation to the development process, understand and appreciate: <ul style="list-style-type: none"> stages in the process 	Compare, appraise and select different construction materials, products and processes from both an initial cost and whole life cost perspective.	Demonstrate an appreciation of property and infrastructure development in relation to financial and legal aspects including development viability and appraisal.	

Knowledge and Understanding				
	Level 4	Level 5	Level 6	Level 6 (Hons)
	<ul style="list-style-type: none"> role of construction professionals within the process responsibility for ensuring designs are inclusive use of digital technologies and information management 	Compare and appraise the use of digital technologies and information management.	Evaluate the importance and challenges of working in a collaborative environment and the integration of design, costing and scheduling.	
A28	Undertake the measurement of land and construction work both on plan, through the use of digital information modelling or onsite	Produce examples of price and cost estimation for construction activities from feasibility through to final accounts.	Critical appraisal of electronic measurement and estimating systems	
	Understand the principles of price and cost estimation for construction activities.	Produce detailed measurement using a range of standard methods of measurement.		
A29	Describe and illustrate the functional and performance requirements of simple buildings.	Describe and illustrate the functional and performance requirements of framed and complex buildings.	Evaluate and challenge the use of proposed technologies against the need for contemporary and innovative solutions to achieve integration, buildability, speed, cost, health and safety, inclusion and quality criteria applied to case study buildings.	
		Understand, describe, select and illustrate alternative options available for the onsite or offsite construction of primary and secondary building elements of framed and complex buildings including those with basements.		
	Understand, describe, select and illustrate alternative options available for the construction of primary and secondary building elements of simple buildings and the necessary site set-up.	Undertake design option appraisal to ensure adherence to current building legislation including the conservation of energy, carbon emissions, inclusion, accessibility, security and structural performance control.	Examine the potential and use of sustainable technologies applied to case study buildings.	
A30	Understand and appreciate the function and design of building	Recognise and appreciate the function and design of complex building services including those	Examine and select suitable solutions, including renewable technologies for building services in the context of a development project.	

Knowledge and Understanding				
	Level 4	Level 5	Level 6	Level 6 (Hons)
	services for a simple building to ensure human comfort.	where the whole building operates as a building services system.		
A31	Demonstrate a knowledge of common defects and refurbishment technologies to restore a building for contemporary use.	Discuss the refurbishment and adaptation options applicable to the upgrading of or changing the use of a building.	Investigate and propose methods to future proof buildings.	
A32	Understand site investigation techniques. Awareness of issues surrounding contaminated land and brownfield sites.	Apply principles of site investigation to assess the suitability of sites for construction projects	Analyse the effectiveness of site investigation techniques in preventing unforeseen problems in the construction phase of a project.	
A33	Explain the basic principles of land surveying.	Demonstrate competence in geomatics.		
A34	Describe the properties of building materials and understand their performance characteristics with regard to the natural environment and their impact upon it, including hazardous materials.	Analyse the performance of materials in use, based upon their scientific properties and the environment and conditions in which they are used.	Evaluate the viability of ethically sourcing construction materials and possible effects this may have on the construction process.	
A35	Demonstrate knowledge of performance maintenance technology and maintenance management, e.g. BMS	Apply and evaluate various maintenance technologies and maintenance management systems as appropriate to various building types, for example; domestic, commercial, industrial, public.		
A36	N/A	N/A	Research a contemporary construction built environment issue.	
			Demonstrate an ability to select and apply appropriate ethical research methods.	
			Analyse, synthesise and evaluate a key issue affecting the built environment.	

Intellectual Skills				
	Level 4	Level 5	Level 6	Level 6 (Hons)
B1	Summarise information from a variety of sources	Analyse information from a variety of sources	Critically analyse information from a variety of sources	Synthesise information from a variety of sources
B2	Recognise appropriate theories, methodologies, concepts and principles from a range of subjects	Use appropriate theories, methodologies, concepts and principles from a range of subjects	Test appropriate theories, methodologies, concepts and principles from a range of subjects	Use and evaluate appropriate theories, methodologies, concepts and principles from a range of subjects
B3	collect several lines of evidence to develop arguments	Collect and analyse several lines of evidence to develop balanced arguments	collect, analyse and integrate several lines of evidence to develop balanced arguments demonstrating critical thinking	Collect, analyse, integrate and evaluate several lines of evidence to develop balanced arguments demonstrating critical thinking and synthesis
B4	plan an experiment, investigation, survey or other means to test a hypothesis or proposition	plan and design an experiment, investigation, survey or other means to test a hypothesis or proposition	Plan, design and implement an experiment, investigation, survey or other means to test a hypothesis or proposition	Plan, design, implement and evaluate an experiment, investigation, survey or other means to test a hypothesis or proposition
B5	Indicate knowledge and understanding to address multidisciplinary problems within a local and global context	Demonstrate knowledge and understanding to address multidisciplinary problems within a local and global context	Apply knowledge and understanding to address multidisciplinary problems within a local and global context	Apply knowledge and understanding to address multidisciplinary problems within a local and global context and evaluate outcomes
B6	Indicate an ability to be creative and innovative	Demonstrate creativity and innovation	Demonstrate creativity and innovation and reflect upon outcomes	Demonstrate creativity and innovation and evaluate outcomes
B7	Indicate an awareness of the provisional nature of the facts and principles associated with a field of study with those based on opinion and not supported by sound evidence	Demonstrate awareness of the provisional nature of the facts and principles associated with a field of study with those based on opinion and not supported by sound evidence	Demonstrate awareness of the provisional nature of the facts and principles associated with a field of study with those based on opinion and not supported by sound evidence, and reflect upon associated implications	Demonstrate awareness of the provisional nature of the facts and principles associated with a field of study with those based on opinion and not supported by sound evidence, and evaluate implications
B8	Suggest considered decisions in complex and unpredictable contexts	Make well considered decisions in complex and unpredictable contexts	Make well considered decisions in complex and unpredictable contexts and reflect upon outcomes	Make well considered decisions in complex and unpredictable contexts and evaluate outcomes
B9	Indicate an understanding of the importance of academic and professional integrity.	Demonstrate the importance of academic and professional integrity.	Demonstrate the importance of academic and professional integrity.	Demonstrate the importance of academic and professional integrity.

Subject Skills				
	Level 4	Level 5	Level 6	Level 6 (Hons)
C1	Indicate an understanding of the key concepts, theories and principles used in construction and the management of construction	Demonstrate an understanding of the key concepts, theories and principles used in construction and the management of construction	Differentiate the key concepts, theories and principles used in construction and the management of construction	Differentiate between and evaluate key concepts, theories and principles used in construction and the management of construction
C2	Identify the appropriate stakeholders involved in the construction process and their relevant roles and responsibilities	Describe the appropriate stakeholders involved in the construction process and their relevant roles and responsibilities	Differentiate between appropriate stakeholders involved in the construction process and their relevant roles and responsibilities	Differentiate and compare appropriate stakeholders involved in the construction process in terms of their relevant roles and responsibilities
C3	Indicate an understanding of the context in which the process of construction operates, including the legal, business, social, economic, health and safety, cultural, equality and inclusion, technological, physical, environmental and global influences, including the relationship to digital technologies	Demonstrate an understanding of the context in which the process of construction operates, including the legal, business, social, economic, health and safety, cultural, equality and inclusion, technological, physical, environmental and global influences, including the relationship to digital technologies	Demonstrate an understanding of and reflect upon the context in which the process of construction operates, including the legal, business, social, economic, health and safety, cultural, equality and inclusion, technological, physical, environmental and global influences, including the relationship to digital technologies	Evaluate the context in which the process of construction operates, including the legal, business, social, economic, health and safety, cultural, equality and inclusion, technological, physical, environmental and global influences, including the relationship to digital technologies
C4	Recognise the collaborative linkages and interdisciplinary relationships between the functions of construction and the other disciplines of the built environment	Demonstrate an understanding of the collaborative linkages and interdisciplinary relationships between the functions of construction and the other disciplines of the built environment	Demonstrate an understanding of and reflect upon the collaborative linkages and interdisciplinary relationships between the functions of construction and the other disciplines of the built environment	Evaluate the collaborative linkages and interdisciplinary relationships between the functions of construction and the other disciplines of the built environment
C5	Recognise the various construction technologies and specialisms relevant to the construction of assets for lifetime performance	Demonstrate an understanding of the various construction technologies and specialisms relevant to the construction of assets for lifetime performance	Differentiate between the various construction technologies and specialisms relevant to the construction of assets for lifetime performance	Evaluate the various construction technologies and specialisms relevant to the construction of assets for lifetime performance
C6	Recognise the appropriate generic and bespoke software that supports construction and digital construction	Use appropriate generic and bespoke software that supports construction and digital construction	Use appropriate generic and bespoke software that supports construction and digital	Develop competency in the use of appropriate generic and bespoke software that supports construction and digital construction

Subject Skills				
	Level 4	Level 5	Level 6	Level 6 (Hons)
			construction, and self-develop skills through practice	
C7	Recognise the regulatory systems within which construction operates, including building and planning regulations	Demonstrate understanding of the regulatory systems within which construction operates, including building and planning regulations	Differentiate the regulatory systems within which construction operates, including building and planning regulations	Synthesise the requirements of regulatory systems within which construction operates, including building and planning regulations
C8	Appreciate the importance of sustainability within the context of the built environment, including the quality of life theme	Demonstrate the importance of sustainability within the context of the built environment, including the quality of life theme	Demonstrate and reflect upon the importance of sustainability within the context of the built environment, including the quality of life theme	Synthesise sustainability within the context of the built environment, including the quality of life theme
C9	Recognise the importance of professional ethics, their impact on the operation of the profession and their influence on society, conflict avoidance/dispute resolution, communities and the stakeholders with whom they have contact	Demonstrate an understanding of the importance of professional ethics, their impact on the operation of the profession and their influence on society, conflict avoidance/dispute resolution, communities and the stakeholders with whom they have contact	Practice and reflect upon professional ethics, their impact on the operation of the profession and their influence on society, conflict avoidance/dispute resolution, communities and the stakeholders with whom they have contact	Practice and evaluate professional ethics, their impact on the operation of the profession and their influence on society, conflict avoidance/dispute resolution, communities and the stakeholders with whom they have contact
C10	Indicate understanding of the principles and processes that deliver an inclusive environment recognising the diversity of user needs by putting people (of all ages and abilities) at the heart of the construction management process.	Demonstrate an understanding of the principles and processes that deliver an inclusive environment recognising the diversity of user needs by putting people (of all ages and abilities) at the heart of the construction management process.	Demonstrate and reflect upon the principles and processes that deliver an inclusive environment recognising the diversity of user needs by putting people (of all ages and abilities) at the heart of the construction management process.	Demonstrate and evaluate the principles and processes that deliver an inclusive environment recognising the diversity of user needs by putting people (of all ages and abilities) at the heart of the construction management process.

Practical, Professional and Employability Skills				
	Level 4	Level 5	Level 6	Level 6 (Hons)
D1	plan, conduct and present an independent investigation with significant guidance			
D2	relate investigations to some prior work and reference it appropriately			
D3	where appropriate, use laboratory and field equipment safely			
D4	apply a range of methods to solve problems			
D5	use appropriate technologies to address problems			
D6	where appropriate, describe and record in the field and laboratory			

Practical, Professional and Employability Skills				
	Level 4	Level 5	Level 6	Level 6 (Hons)
D7			interpret practical results with guidance	
D8			present results of investigations in a number of formats	
D9			apply survey measurements and evaluation techniques as appropriate to the course	
D10			recognise and record visual information when on site or from graphical sources	
D11			apply professional judgement in drawing skills and knowledge together and applying them to real world problems	
D12			recognise when information is incomplete	
D13			appreciate risk	
D14			process and interpret data and information	
D15			critically appraise spatial data	
D16			solve basic numerical problems using appropriate techniques	
D17			undertake simple statistical analysis	
D18			select and apply appropriate methods of collecting, analysing, and synthesising data	
D19			appreciate the importance of intellectual property and its role within the innovation process.	
D20			communicate to a variety of audiences in appropriate written, graphical, electronic and verbal forms	
D21			make contributions to group discussions	
D22			watch, listen and respond to others	
D23			negotiate and mediate with others	
D24			use social media for communication	
D25			use the internet for communication and information retrieval	
D26			handle electronic information with guidance, applying appropriate techniques, digital tools and applications to support key subjects	
D27			have an awareness of the safe, ethical and legal use of digital media	
D28			demonstrate the application of information technology and digital tools and techniques to support key subjects.	
D29			make a constructive contribution to teamwork	
D30			identify individual goals	
D31			recognise and respect the views of others	
D32			recognise equality, diversity and inclusion in all its forms	
D33			reflect on team performance.	
D34			recognise and be able to comment on the moral and ethical issues associated with the subject	
D35			appreciate the need for professional codes of conduct	
D36			accept responsibility for their own learning	
D37			identify targets for personal, career and academic development	
D38			be adaptable and have a flexible approach to study and work	
D39			develop skills necessary for self-managed, independent and lifelong learning	
D40			recognise personal strengths and weaknesses.	
D41			Present information effectively to audiences	

Practical, Professional and Employability Skills				
	Level 4	Level 5	Level 6	Level 6 (Hons)
(WbL)	Demonstrate effective meeting skills			
	Demonstrate effective interpersonal skills and informal communication			
D42	Identify and determine solutions to problems			
(WbL)	Investigate problems, causes and effects within the job role			
D43	Identify and gather all necessary information required to carry out tasks within the job role			
(WbL)	Process information effectively to meet work objectives			
	Identify actions to remedy incorrect or insufficient information			
D44	Identify the various procurement procedures within your organisation			
(WbL)	Demonstrate the ability to identify and manage risk			
	Demonstrate effective budget control and identify budget constraints			
	Demonstrate effective time management			
D45	Demonstrate effective team working			
(WbL)	Demonstrate the ability to deal with conflict in teams			
D46	Set and review work objectives			
(WbL)	Plan activities and work methods			
	Monitor and control work activities			
D47	Identify job responsibilities and practices under health, safety and welfare legislation			
(WbL)	Identify and describe the implementation of risk control measures			
D48	Investigate the quality of a product, service or process			
(WbL)	Undertake an investigation for the organisation			
D49	Identify and evaluate the company's policies and practices in sustainable building			
(WbL)	Identify ways of protecting the workplace and surrounding environments			
D50	Identify the impact/consequences of making decisions			
(WbL)	Demonstrate an understanding of construction and relevant civil law			

9.4 BSc (Hons) Quantity Surveying

Knowledge and Understanding				
	Level 4	Level 5	Level 6	Level 6 (Hons)
A1	Understand the management of construction processes as they relate to the project from inception to recycling	Apply knowledge of the construction, maintenance and adaptation process to the management of projects and the selection of procurement methodology		Analyse and solve problems relating to the construction process.
	Understanding corporate organisations, industry, clients and society			

Knowledge and Understanding				
	Level 4	Level 5	Level 6	Level 6 (Hons)
A2	Understand the role and responsibilities of people involved in the construction process.	<p>Explain how human resource/people management methods affect the construction process. For example:</p> <ul style="list-style-type: none"> • Employee Relations Frameworks • recruitment and selection of personnel • time management • Considerate Constructors • people, motivation and behaviour • performance management and appraisal • teams and integrated teams • leadership and leadership styles • inclusion and equality • training and development 	Evaluate Organisational HRM policies to ensure fair treatment of all personnel.	
			Evaluate different leadership styles at project, organisational and national level.	
			Review HRM approaches to ensure effective harmonious working environments.	
A3	Appreciate the importance of understanding the person.	<p>Apply person understanding to the development of a variety of processes, including:</p> <ul style="list-style-type: none"> • stress management • negotiation • individual and team conflict resolution 	Evaluate the application of individual person understanding to change management in construction organisations.	
	Understand how the construction process impacts on individual welfare, wellbeing and inclusion.			
A4	Understand the importance of time, cost and resource management to complete projects effectively.	<p>Demonstrate the ability to use a range of digital planning tools, to apply them to construction processes including:</p> <ul style="list-style-type: none"> • project planning • critical path analysis • resource levelling 	<p>Evaluate and apply different project management techniques to complex projects:</p> <ul style="list-style-type: none"> • progress and completion • management and decision processes • Project Evaluation and Review Technique (PERT) • risk analysis • Building Information Modelling (BIM) 	
	Be aware of external benchmarks such as CIOB Good Practice in Management of Time in Complex Projects and Codes of Practice.			
A5	Define performance management for process improvement, including definition and use of Key Performance Indicators (KPIs)	Apply Key Performance Indicators (KPIs) to a construction project.	<p>Evaluate and apply different performance management techniques to complex projects. For example:</p> <ul style="list-style-type: none"> • procurement and contract performance • process improvement • incentivisation • best practices and feedback and reflection • business and market development, product development and research/ innovation management 	

Knowledge and Understanding				
	Level 4	Level 5	Level 6	Level 6 (Hons)
A6	Appreciate the role of the Construction Manager (e.g. Bale, 2010) in an international context, including: <ul style="list-style-type: none">• management, development, conservation and improvement of the built environment• role of the professional manager in construction		Recommend improvements to practice to further enhance the image and efficiency of the construction industry.	
	Demonstrate an understanding of professional Codes of Conduct and ethics, including CIOB's Rules and Regulations of Professional Competence and Conduct	Discuss the issues relating to the application of ethical behaviour and Codes of Conduct.		
	Understand the CIC Essential Principles for achieving an accessible and inclusive environment.	Apply CIC Essential Principles for achieving an accessible and inclusive environment.		
	Recognise the need for online security of personal and project-specific information.	Understand the methods used to provide online security of personal and project specific information.		
	Awareness of the intellectual property rights associated with built assets.	Understand the application of intellectual property rights to a built asset.		
A7	Demonstrate an awareness of the meaning and relevance of the nine 'Protected characteristics' defined in the Equality Act 2010. These include age, disability, gender	Give examples and prepare plans for the application of ethical and inclusive practice in the built environment workplace, demonstrating consideration of people as	Analyse the role and value of openness and transparency versus confidentiality and commercial sensitivity, i.e. Whistleblowing	

Knowledge and Understanding				
	Level 4	Level 5	Level 6	Level 6 (Hons)
	reassignment marriage and civil partnership, pregnancy and maternity, race, religion and belief, sex and sexual orientation.	clients, customers and consumers of built environment 'products' and services.	Examine company, industry or government policies for inclusivity and their value to the construction industry.	
A8	Describe the principles of fair trade and fair economy.	Apply professional standards of reporting and accountancy. Demonstrate understanding of the need for honesty and accuracy in reporting.	Review and recommend national and international procedures to comply with professional obligations, e.g. bribery, money laundering.	
A9	Identify responsibilities in relation to Governance and Corporate Social Responsibility within public and private bodies and to individuals, including modern slavery such as CIOB's Modern Slavery Toolkit: http://stronger2gether.org/construction/	Apply ethical frameworks as an aid to decision making.	Compare the Governance and Corporate Social Responsibility of organisations and the wider society. Evaluate company decisions from individual and professional ethical perspectives.	
A10	Identify personal strengths, understanding of self and areas for development.	Prepare a self-development plan with provision for review and reflection.	Implement a review of and reflection on self-development and self-awareness.	
A11	Understand the legal environment and terminology of health and safety as it applies to the design and management of construction projects. Understand the importance and management of construction health, safety and wellbeing.	Prepare a risk assessment, Understand the roles of the main parties in the CDM Regulations, with particular emphasis on the Principal Contractor.	Critically evaluate health and safety legislation from a corporate perspective.	
A12	Understand the importance of and provide an overview of the duties of all persons involved in construction projects with regard to health, safety	Appraise a range of case studies and statistical data regarding accidents and review impact as well as causes and effects.	Reflect on personal responsibility for health, safety and wellbeing at all levels within an organisation and the consequences of action and inaction.	

Knowledge and Understanding				
	Level 4	Level 5	Level 6	Level 6 (Hons)
	and wellbeing.			
A13	Demonstrate an understanding of the various health and safety management tools and techniques, and recent developments in health, safety and wellbeing management and training.	In the context of design and construction, identify and manage both potential and actual health, safety and wellbeing hazards and risks.	Critically evaluate health and safety management procedures on a variety of projects.	
A14	Understand the issues associated with the management of wellbeing and safety culture in construction.	Identify the barriers associated with establishing and maintaining an organisation's health, safety and wellbeing culture and practices.	Analyse how the Construction Industry should enhance competence, behaviour and commitment to health, safety and wellbeing in both the design and management of construction projects.	
A15	Demonstrate an understanding of: <ul style="list-style-type: none"> • social sustainability and quality of life • economic sustainability • environmental sustainability For example – Brundtland Report, environmental impact, low and zero carbon, energy generation.	Explain the scale of the Built Environment's impact on the environment.	Analyse the main sustainability impacts that a building has over the duration of its life cycle, from design through construction, use, refurbishment and adaptation to demolition and disposal.	
A16	In relation to sustainable development demonstrate an understanding of: <ul style="list-style-type: none"> • issues • terminology • policy • legislation • design 	Describe the key legislative drivers which seek to minimise the impact of construction industry activity and the built environment.	Examine the Construction Industry's challenges, opportunities and responsibilities with regards to the three themes of sustainability: <ul style="list-style-type: none"> • social sustainability and quality of life • economic sustainability • environmental sustainability 	
A17	Recognise the impact on a building's carbon emissions of providing a comfortable and	Explain key principles of 'low energy', 'passive' design and 'healthy' buildings.	Undertake cost-benefit and feasibility analysis of carbon issues in relation to building design and operational management.	

Knowledge and Understanding				
	Level 4	Level 5	Level 6	Level 6 (Hons)
	healthy internal environment through the provision of: <ul style="list-style-type: none">• heating and cooling• air tightness and quality• lighting quality		Make comparisons between predicted and actual sustainability performance of buildings	
A18	Understand key principles of environmental impact and energy/carbon assessment methodologies.	Apply appropriate environmental impact and/or carbon/energy assessment techniques.	Carry out an impact assessment of the provision of a comfortable and healthy internal environment on a building's carbon emissions.	
			Critically appraise carbon/energy assessment techniques.	
A19	Demonstrate an understanding of the sources of waste in the built environment including: <ul style="list-style-type: none">• material waste and re-cycling• labour resourcing.	Develop and apply policies to establish responsible sourcing and eliminate waste within the lifecycle of a construction project.	Evaluate techniques available to reduce all waste and enhance recycling including lean construction, resource efficiency and the adoption of the circular economy for sustainability.	
A20	Identify and explain how construction sites and operations impact on the environment.	Identity and apply appropriate methods to mitigate negative sustainability impacts during the construction process.		
A21	Evaluate the importance of sustainability with regards to Clients' Corporate Social Responsibility, vision, image and Key Performance Indicators.			
A22	In relation to the national and international construction industry, understand and appreciate its: <ul style="list-style-type: none">• historical development• scale, structure and output• future opportunities	Identify the appropriate stakeholders involved in the construction process and their relevant roles and responsibilities	Review threats and opportunities for the future development of the construction industry.	
		Recognise the collaborative linkages and interdisciplinary relationships between the functions of construction and the other disciplines of the built environment		
A23	Describe the role of the construction industry in the economic and social wellbeing of a country and the provision of an inclusive society.	Understand and appreciate the social, inclusive and political issues which impact on planning, design and development of the built environment.	Appraise and evaluate the influence of current issues including, sustainability, health & safety internationalisation and inclusion on the social and economic aspects of construction activity worldwide.	

Knowledge and Understanding				
	Level 4	Level 5	Level 6	Level 6 (Hons)
A24	Understand and describe the principles of: <ul style="list-style-type: none"> the legal system related to construction activity the law of contract and tort statutory control of construction activity including planning regulations insurance 	Describe and characterise the legal obligations and procedures in relation to the design, construction and operation stages associated with: <ul style="list-style-type: none"> contracts and their administration planning employment environment design 	Analyse the impact that legal obligations have on the construction management process.	
			Appraise and evaluate alternative dispute resolution processes.	
A25	Understand and describe the principles of: <ul style="list-style-type: none"> macro and micro economics supply and demand market structure and operation 	Compare, appraise and select different procurement processes for construction activity.	Examine the opportunities and problems for a construction company operating in the global market place.	
		Understand and appreciate the global market for construction from a commercial perspective.		
A26	Understand and describe the principles of: <ul style="list-style-type: none"> finance for construction organisation and activities cash flow 	Apply financial information as it relates to the management of construction projects: <ul style="list-style-type: none"> cash flow, cost and finance from inception to demolition tender evaluation value management /engineering whole life costing decision making 	Implement procedures and practices associated with the settlement of final accounts, claims and dispute resolution.	
			Appraise and evaluate the financial management of corporate enterprises and professional practices.	
A27	In relation to the development process, understand and appreciate: <ul style="list-style-type: none"> stages in the process 	Compare, appraise and select different construction materials, products and processes from both an initial cost and whole life cost perspective.	Demonstrate an appreciation of property and infrastructure development in relation to financial and legal aspects including development viability and appraisal.	

Knowledge and Understanding				
	Level 4	Level 5	Level 6	Level 6 (Hons)
	<ul style="list-style-type: none">• role of construction professionals within the process• responsibility for ensuring designs are inclusive use of digital technologies and information management	Compare and appraise the use of digital technologies and information management.	Evaluate the importance and challenges of working in a collaborative environment and the integration of design, costing and scheduling.	
A28	Undertake the measurement of land and construction work both on plan, through the use of digital information modelling or onsite	Produce examples of price and cost estimation for construction activities from feasibility through to final accounts.	Critical appraisal of electronic measurement and estimating systems	
	Understand the principles of price and cost estimation for construction activities.	Produce detailed measurement using a range of standard methods of measurement.		
A29	Describe and illustrate the functional and performance requirements of simple buildings.	Describe and illustrate the functional and performance requirements of framed and complex buildings.	Evaluate and challenge the use of proposed technologies against the need for contemporary and innovative solutions to achieve integration, buildability, speed, cost, health and safety, inclusion and quality criteria applied to case study buildings.	
		Understand, describe, select and illustrate alternative options available for the onsite or offsite construction of primary and secondary building elements of framed and complex buildings including those with basements.		
		Understand, describe, select and illustrate alternative options available for the construction of primary and secondary building elements of simple buildings and the necessary site set-up.	Undertake design option appraisal to ensure adherence to current building legislation including the conservation of energy, carbon emissions, inclusion, accessibility, security and structural performance control.	Examine the potential and use of sustainable technologies applied to case study buildings.
A30	Understand and appreciate the function and design of building services for a simple building to ensure human comfort.	Recognise and appreciate the function and design of complex building services including those where the whole building operates as a building services system.	Examine and select suitable solutions, including renewable technologies for building services in the context of a development project.	

Knowledge and Understanding				
	Level 4	Level 5	Level 6	Level 6 (Hons)
A31	Demonstrate a knowledge of common defects and refurbishment technologies to restore a building for contemporary use.	Discuss the refurbishment and adaptation options applicable to the upgrading of or changing the use of a building.	Investigate and propose methods to future proof buildings.	
A32	Understand site investigation techniques. Awareness of issues surrounding contaminated land and brownfield sites.	Apply principles of site investigation to assess the suitability of sites for construction projects	Analyse the effectiveness of site investigation techniques in preventing unforeseen problems in the construction phase of a project.	
A33	Explain the basic principles of land surveying.	Demonstrate competence in geomatics.		
A34	Describe the properties of building materials and understand their performance characteristics with regard to the natural environment and their impact upon it, including hazardous materials.	Analyse the performance of materials in use, based upon their scientific properties and the environment and conditions in which they are used.	Evaluate the viability of ethically sourcing construction materials and possible effects this may have on the construction process.	
A35	Demonstrate knowledge of performance maintenance technology and maintenance management, e.g. BMS	Apply and evaluate various maintenance technologies and maintenance management systems as appropriate to various building types, for example; domestic, commercial, industrial, public.		
A36			Research a contemporary construction built environment issue.	
			Demonstrate an ability to select and apply appropriate ethical research methods.	
			Analyse, synthesise and evaluate a key issue affecting the built environment.	

Intellectual Skills				
	Level 4	Level 5	Level 6	Level 6 (Hons)
B1	Summarise information from a variety of sources	Analyse information from a variety of sources	Critically analyse information from a variety of sources	Synthesise information from a variety of sources

Intellectual Skills				
	Level 4	Level 5	Level 6	Level 6 (Hons)
B2	Recognise appropriate theories, methodologies, concepts and principles from a range of subjects	Use appropriate theories, methodologies, concepts and principles from a range of subjects	Test appropriate theories, methodologies, concepts and principles from a range of subjects	Use and evaluate appropriate theories, methodologies, concepts and principles from a range of subjects
B3	collect several lines of evidence to develop arguments	Collect and analyse several lines of evidence to develop balanced arguments	collect, analyse and integrate several lines of evidence to develop balanced arguments demonstrating critical thinking	Collect, analyse, integrate and evaluate several lines of evidence to develop balanced arguments demonstrating critical thinking and synthesis
B4	plan an experiment, investigation, survey or other means to test a hypothesis or proposition	plan and design an experiment, investigation, survey or other means to test a hypothesis or proposition	Plan, design and implement an experiment, investigation, survey or other means to test a hypothesis or proposition	Plan, design, implement and evaluate an experiment, investigation, survey or other means to test a hypothesis or proposition
B5	Indicate knowledge and understanding to address multidisciplinary problems within a local and global context	Demonstrate knowledge and understanding to address multidisciplinary problems within a local and global context	Apply knowledge and understanding to address multidisciplinary problems within a local and global context	Apply knowledge and understanding to address multidisciplinary problems within a local and global context and evaluate outcomes
B6	Indicate an ability to be creative and innovative	Demonstrate creativity and innovation	Demonstrate creativity and innovation and reflect upon outcomes	Demonstrate creativity and innovation and evaluate outcomes
B7	Indicate an awareness of the provisional nature of the facts and principles associated with a field of study with those based on opinion and not supported by sound evidence	Demonstrate awareness of the provisional nature of the facts and principles associated with a field of study with those based on opinion and not supported by sound evidence	Demonstrate awareness of the provisional nature of the facts and principles associated with a field of study with those based on opinion and not supported by sound evidence, and reflect upon associated implications	Demonstrate awareness of the provisional nature of the facts and principles associated with a field of study with those based on opinion and not supported by sound evidence, and evaluate implications
B8	Suggest considered decisions in complex and unpredictable contexts	Make well considered decisions in complex and unpredictable contexts	Make well considered decisions in complex and unpredictable contexts and reflect upon outcomes	Make well considered decisions in complex and unpredictable contexts and evaluate outcomes
B9	Indicate an understanding of the importance of academic and professional integrity.	Demonstrate the importance of academic and professional integrity.	Demonstrate the importance of academic and professional integrity.	Demonstrate the importance of academic and professional integrity.

Subject Skills				
	Level 4	Level 5	Level 6	Level 6 (Hons)
C1	Indicate an awareness of the mainstream technology and the resources it uses for constructing domestic, industrial and commercial buildings and infrastructure	Demonstrate an awareness of the mainstream technology and the resources it uses for constructing domestic, industrial and commercial buildings and infrastructure	Differentiate mainstream technologies and the resources used for constructing domestic, industrial and commercial buildings and infrastructure	Evaluate the mainstream technology and the resources it uses for constructing domestic, industrial and commercial buildings and infrastructure
C2	Indicate an awareness of the impact development has on the environment and initiatives to minimise energy, reduce carbon emissions, protect and increase biodiversity, flood protection and increase health and well-being	Demonstrate an awareness of the impact development has on the environment and initiatives to minimise energy, reduce carbon emissions, protect and increase biodiversity, flood protection and increase health and well-being	Analyse the impact development has on the environment and initiatives to minimise energy, reduce carbon emissions, protect and increase biodiversity, flood protection and increase health and well-being	Evaluate the impact development has on the environment and initiatives to minimise energy, reduce carbon emissions, protect and increase biodiversity, flood protection and increase health and well-being
C3	Indicate an ability to measure and quantify to support the design process, production of project information and the commercial management of projects	Demonstrate an ability to measure and quantify to support the design process, production of project information and the commercial management of projects	Measure and quantify to support the design process, production of project information and the commercial management of projects and reflect upon outcomes	Measure and quantify to support the design process, production of project information and the commercial management of projects and evaluate outcomes
C4	Recognise time, cost quality and value drivers affecting the design and construction and occupancy of buildings	Describe time, cost quality and value drivers affecting the design and construction and occupancy of buildings	Analyse time, cost quality and value drivers affecting the design and construction and occupancy of buildings	Evaluate time, cost quality and value drivers affecting the design and construction and occupancy of buildings
C5	Recognise legal and regulatory frameworks and systems impacting on the design and construction of buildings, and the principles of procurement and contract administration	Demonstrate an understanding of legal and regulatory frameworks and systems impacting on the design and construction of buildings, and the principles of procurement and contract administration	Analyse legal and regulatory frameworks and systems impacting on the design and construction of buildings, and the principles of procurement and contract administration	Evaluate legal and regulatory frameworks and systems impacting on the design and construction of buildings, and the principles of procurement and contract administration
C6	Indicate an awareness of digital technologies that support the construction process and the management of costs	Describe digital technologies that support the construction process and the management of costs	Utilise digital technologies that support the construction process and the management of costs	Utilise and evaluate digital technologies that support the construction process and the management of costs
C7	Recognise the roles of other professionals and parties associated with construction,	Describe the roles of other professionals and parties associated with construction, property and	Differentiate the roles of other professionals and parties associated with construction,	Evaluate the roles of other professionals and parties associated with construction, property and

Subject Skills				
	Level 4	Level 5	Level 6	Level 6 (Hons)
	property and surveying throughout a building's life cycle and be aware of the benefits of collaborative practice	surveying throughout a building's life cycle and be aware of the benefits of collaborative practice	property and surveying throughout a building's life cycle and be aware of the benefits of collaborative practice	surveying throughout a building's life cycle and be aware of the benefits of collaborative practice
C8	Recognise the importance of professional ethics, their impact on the operation of the profession and their influence on society, conflict avoidance/dispute resolution, communities and the stakeholders with whom they have contact	Explain the importance of professional ethics, their impact on the operation of the profession and their influence on society, conflict avoidance/dispute resolution, communities and the stakeholders with whom they have contact	Analyse professional ethics, their impact on the operation of the profession and their influence on society, conflict avoidance/dispute resolution, communities and the stakeholders with whom they have contact	Evaluate professional ethics, their impact on the operation of the profession and their influence on society, conflict avoidance/dispute resolution, communities and the stakeholders with whom they have contact
C9	Recognise principles and processes that deliver an inclusive environment recognising the diversity of user needs by putting people (of all ages and abilities) at the heart of the commercial management and quantity surveying process.	Explain principles and processes that deliver an inclusive environment recognising the diversity of user needs by putting people (of all ages and abilities) at the heart of the commercial management and quantity surveying process.	Analyse principles and processes that deliver an inclusive environment recognising the diversity of user needs by putting people (of all ages and abilities) at the heart of the commercial management and quantity surveying process.	Evaluate principles and processes that deliver an inclusive environment recognising the diversity of user needs by putting people (of all ages and abilities) at the heart of the commercial management and quantity surveying process.

Practical, Professional and Employability Skills				
	Level 4	Level 5	Level 6	Level 6 (Hons)
D1	plan, conduct and present an independent investigation with significant guidance			
D2	relate investigations to some prior work and reference it appropriately			
D3	where appropriate, use laboratory and field equipment safely			
D4	apply a range of methods to solve problems			
D5	use appropriate technologies to address problems			
D6	where appropriate, describe and record in the field and laboratory			
D7	interpret practical results with guidance			
D8	present results of investigations in a number of formats			
D9	apply survey measurements and evaluation techniques as appropriate to the course			
D10	recognise and record visual information when on site or from graphical sources			
D11	apply professional judgement in drawing skills and knowledge together and applying them to real world problems			

Practical, Professional and Employability Skills				
	Level 4	Level 5	Level 6	Level 6 (Hons)
D12			recognise when information is incomplete	
D13			appreciate risk	
D14			process and interpret data and information	
D15			critically appraise spatial data	
D16			solve basic numerical problems using appropriate techniques	
D17			undertake simple statistical analysis	
D18			select and apply appropriate methods of collecting, analysing, and synthesising data	
D19			appreciate the importance of intellectual property and its role within the innovation process.	
D20			communicate to a variety of audiences in appropriate written, graphical, electronic and verbal forms	
D21			make contributions to group discussions	
D22			watch, listen and respond to others	
D23			negotiate and mediate with others	
D24			use social media for communication	
D25			use the internet for communication and information retrieval	
D26			handle electronic information with guidance, applying appropriate techniques, digital tools and applications to support key subjects	
D27			have an awareness of the safe, ethical and legal use of digital media	
D28			demonstrate the application of information technology and digital tools and techniques to support key subjects.	
D29			make a constructive contribution to teamwork	
D30			identify individual goals	
D31			recognise and respect the views of others	
D32			recognise equality, diversity and inclusion in all its forms	
D33			reflect on team performance.	
D34			recognise and be able to comment on the moral and ethical issues associated with the subject	
D35			appreciate the need for professional codes of conduct	
D36			accept responsibility for their own learning	
D37			identify targets for personal, career and academic development	
D38			be adaptable and have a flexible approach to study and work	
D39			develop skills necessary for self-managed, independent and lifelong learning	
D40			recognise personal strengths and weaknesses.	
D41 (WbL)			Present information effectively to audiences	
			Demonstrate effective meeting skills	
			Demonstrate effective interpersonal skills and informal communication	
D42 (WbL)			Identify and determine solutions to problems	
			Investigate problems, causes and effects within the job role	
D43			Identify and gather all necessary information required to carry out tasks within the job role	

Practical, Professional and Employability Skills				
	Level 4	Level 5	Level 6	Level 6 (Hons)
(WbL)		Process information effectively to meet work objectives		
		Identify actions to remedy incorrect or insufficient information		
D44		Identify the various procurement procedures within your organisation		
(WbL)		Demonstrate the ability to identify and manage risk		
		Demonstrate effective budget control and identify budget constraints		
		Demonstrate effective time management		
D45		Demonstrate effective team working		
(WbL)		Demonstrate the ability to deal with conflict in teams		
D46		Set and review work objectives		
(WbL)		Plan activities and work methods		
		Monitor and control work activities		
D47		Identify job responsibilities and practices under health, safety and welfare legislation		
(WbL)		Identify and describe the implementation of risk control measures		
D48		Investigate the quality of a product, service or process		
(WbL)		Undertake an investigation for the organisation		
D49		Identify and evaluate the company's policies and practices in sustainable building		
(WbL)		Identify ways of protecting the workplace and surrounding environments		
D50		Identify the impact/consequences of making decisions		
(WbL)		Demonstrate an understanding of construction and relevant civil law		

workplace as the primary source of learning, and the Learning and Teaching Strategy will therefore be overtly workplace-centred in facilitating opportunities for apprentices to successfully complete the specified Learning Outcomes that are associated with the programme.

The learning and teaching experience will benefit from a variety of approaches that ensure content is considered against a broad contextual background commensurate with the diverse nature of industrial practice. Candidates will develop academic skills and associated competencies in an environment that encourages original thought and personal development through the interpretation and analysis of technical content.

In exploiting opportunities to encourage the interest and engagement of degree apprentices, delivery will be such that a variety of recognised methods will be employed using the University's Active Learning Framework (ALF), both instructive and exploratory, towards appropriate coverage and depth in the consideration of module content. Wherever possible, scenario-based opportunities will be utilised to explore both general principles and specific issues in context, and traditional didactic methods will be limited to those areas of the curriculum that necessitate such an instructive approach. In this respect, delivery will be overtly apprentice-centred, and all who participate should be given the opportunity to feel comfortable and confident in contributing to the learning process, within an environment of mutual respect and learning.

In terms of resourcing the programmes, cohorts will be provided with all that is necessary to ensure that knowledge and understanding is developed in the use of facilities and equipment that best-reflect current industrial practice. Such resources include technological equipment, computational software and electronic databases that might be expected to be utilised in the design, construction and use of buildings and infrastructure in contemporary development processes. 'Base-rooms' are already established in the University which are utilised to their fullest extent in order to give identity to the programmes of study, and to provide degree apprentices with shared spaces that encourage a collegiate approach to study.

In resourcing academic aspects of the provision, digital platforms such as Moodle, Digimap and the Construction Information Service will enable apprentices to access programme documentation, lecture content and research material in order that they are fully served by such resources in the preparation and submission of assessments.

In embracing opportunities presented by the use of Artificial Intelligence, degree apprentices will be encouraged to utilise such tools overtly in the development of knowledge and understanding, but will be expected to corroborate how such technologies have been used towards the production of original assessment submissions.

Every opportunity will be taken to maximise industrial engagement within programmes through contributions from guest speakers, visits to live construction and civil engineering projects and through attendance at seminars, conferences and exhibitions that are often promoted within the sector. Travel in the UK and abroad is also encouraged if at all practicable in pursuit of similar objectives.

Because of the prevailing industrial contexts, learning opportunities will be informed by the Key Skills for Employment which underpin related clauses within those professional body, Welsh Government and QAA Benchmark specifications that relate directly to the disciplines of the titles proposed. All Degree Apprenticeship students will be required to be permanently employed on a full-time basis within their industrial context, and to be provided with a facility to attend on a 'day-release' basis, or such other agreed mode of attendance should aspects of the provision be delivered in blocks.

11. The Wrexham University Skills Framework

The Wrexham University Skills Framework describes the graduate skills, knowledge and expertise students should master to build success in their studies, work, and life.

To this end, the University's Strategy for Supporting Student Learning and Achievement (SSSLA) outlines WU's priority to work with students as partners to develop a culturally embedded approach to student engagement. The strategy aims to ensure that students achieve great outcomes as a result of engaging with opportunities that are built upon the two pillars of high challenge and high support, within the Active Learning Framework (ALF).

Using the philosophies of the ALF, ten skills are embedded within degree level programmes complementing core academic subject knowledge and understanding as follows:

Adaptability & Flexibility
Career Development
Critical Thinking
Digital Capabilities
Enterprise and Entrepreneurship
Interpersonal Skills
Personal Skills
Resilience
Teamwork

Programmes are designed to enable students to develop and enhance these skills via module content, module learning outcomes and assessment opportunities. Each module will help provide different opportunities for developing and enhancing these capabilities.

The programme has been designed using an Employability Level Descriptor in collaboration with the Careers and Employability team. The Employability Level Descriptor document is reviewed as part of validation and following approval will be published in the student programme handbook.

The Careers and Employability team are available to provide additional careers education activities for all programmes as well as individualised information, advice and guidance. Learners gain access to self-directed learning resources by logging into our [careers portal](#). Here students can book professional careers guidance appointments and make employment and volunteering applications and learn to build and develop their CV and applications.

12. Work based/placement learning statement

Work-based Learning will facilitate the workplace as the primary source of learning, and will align, evidence and record 'off-the-job' learning with 'day to day' work activities, to maximise opportunities for apprentices to develop and apply their knowledge, skills and behaviours towards professional competence.

Because the Built Environment subject area exists to serve the needs of the construction and civil engineering sector and its associated professions through education, training and research, employability is of particular significance to the structure of its provision. Not only is this important in satisfying the objectives of the University's Employment Strategy, it is also a fundamental component in professional-body accreditation and recognition within the wider industrial context.

As Degree Apprenticeship candidates are required to be full-time employed within their respective subject discipline, work placements do not form part of the credit-bearing curriculum, however placements in other departments of the apprentice's employer organisation or elsewhere in industry are encouraged on an ad-hoc basis, particularly in

pursuit of work-based learning outcomes that might be difficult to evidence in their usual employment setting.

Degree Apprentice Progress Reviews will be undertaken at least every two months throughout the duration of Degree Apprenticeship programmes, so that feedback from both employers and apprentices can inform the effectiveness of the provision going forward. Regular site visits and online meetings will be conducted with employers and apprentices to discuss current and future development needs, and to track the academic progress of those apprentices involved. Employers will also be invited to Degree Apprenticeship Stakeholder Group and Industrial Advisory Board meetings, to contribute to discussions on Degree Apprenticeship delivery and development, and to identify opportunities for further collaboration and enhancement of the provision going forward.

13. Welsh medium provision

The programmes will be delivered through the medium of English, though students are entitled to submit assessments in the Welsh Language.

In the context of the University's Reaching Wider Initiative and its work with Coleg Cymraeg Cenedlaethol towards developing the use of the Welsh Language, both teaching material and assessment opportunities will be facilitated in the Welsh Language as far as possible. Whilst the technical and mathematical nature of some built environment content might compromise such efforts to an extent, the regularity with which programmes attract first-language Welsh candidates, makes this approach an important component of future provision. First-language Welsh students are often employed in managing property and infrastructure where the use of the Language is fundamental, such as in areas of local authority responsibility, housing association work and where construction and civil engineering projects are undertaken in predominantly Welsh-speaking areas of North Wales. In the spirit of legislative provision in this respect therefore, provision will seek equality in the use of Welsh and English as far as can be practicable, which is best facilitated through careful and conscious inclusivity in the preparation of teaching and learning materials.

14. Assessment strategy

Programme delivery will provide sufficient opportunities for apprentices to use their workplace and work experiences to meet assessment requirements. This process will be supported by both the employer and the University in the identification and negotiation of potential opportunities that might satisfy the Learning Outcomes associated with the assessment regime. In these respects, Programme Leaders will support the apprentice and their employer to identify relevant and appropriate projects, and to ensure that employer and apprentice needs are met.

A 'tripartite' relationship will be developed between the apprentice, an identified and competent mentor on behalf of the employer organisation and the University, in order to help signpost learning opportunities, to support the apprentice in the generation of work-based evidence, and to work towards the satisfactory completion of specified Learning Outcomes.

'Tripartite' Progress Review Meetings will be held in respect of each individual apprentice at least every two months, and will be evidenced through appropriate authoritative administrative systems, and within the Portfolios that are associated with Work-based Learning modules.

Where appropriate, the apprentice should identify and take account of any relevant professional-body educational framework requirement that might help facilitate future professional membership and should be encouraged to structure Work-based Learning Portfolios accordingly. Access to such educational frameworks is facilitated through student membership of the respective professional body organisation, and apprentices should be encouraged to join on this basis to ensure that resources and any associated recording of progress mechanisms become available to the apprentice at the earliest opportunity.

A range of assessment methods will be utilised to ensure that apprentices are able to express themselves in a variety of different ways, in order to simulate the sorts of written, practical, visual and oral communication mediums that might be expected to take place within the professional and industrial work environment; to this end, employer organisations will be encouraged to engage in the development of assessment material where such an approach lends itself to an enhanced industrial focus. Work-based Learning, Professional Practice and work placement components in particular, will allow apprentices to directly connect professional and vocational aspects of their chosen sector with those academic components of the programme, such that in combination, academic study and occupational experience will be complementary in developing knowledge and understanding within the subject discipline.

The assessment strategy will encompass a range of techniques to ensure that apprentices are provided with diverse opportunities to demonstrate their knowledge and understanding. Written submissions, the practical use of technological equipment, visual presentations, laboratory analyses, in-class tests, examinations, coursework and viva voce are all important components in a systematic approach to providing apprentices with opportunities to express themselves. Types of assessment have been selected to best-suit the nature of the technical content of each module, and collectively constitute a balanced and coherent whole in pursuit of an inclusive and broad-based approach to the measurement of knowledge, skills and behaviours.

In order to help corroborate authenticity and originality in the provision of assessment work that might be subject to the inappropriate use of Artificial Intelligence, all 'presentations' will incorporate an oral 'question and answer' component.

The table below identifies the assessment type and weighting associated with each module.

Module Code	Module	Assessment	Part-time Blocks							
			B1		B2		B3		B4	
			S1	S2	S1	S2	S1	S2	S1	S2
AUR491	Architectural Design Technology 1	100% coursework	x							
AUR492	Building Surveying 1	100% coursework	x							
AUR493	Construction Management 1	100% coursework	x							
AUR494	Quantity Surveying 1	100% coursework	x							
AUR495	Civil Engineering Design	100% coursework	x							
AUR496	Digital Technologies in Drawing and Modelling	100% practical	x							
AUR497	Legal Principles, Compliance and Liability	50% in-class test, 50% written assignment		x						
AUR499	Science and Materials	100% coursework	x							
AUR4A1	Construction Technology	50% in-class test, 50% written assignment		x						
AUR4A2	Geotechnics	50% in-class test, 50% coursework	x							
AUR4A3	Structural Mechanics	100% coursework	x							
ENG495	Analytical Eng. Techniques	50% exam, 50% coursework	x	x						
AUR498	WBL1	75% portfolio, 25% presentation	x	x						
AUR4A4	Digital Technologies in Surveying	practical 100%			x					
AUR4A5	Professional Practice 1	75% coursework, 25% presentation			x					

AUR599	Building Surveying 2	50% Practical, 50% Written Assignment			x	x				
AUR5A1	Construction Management 2	50% Practical, 50% Exam			x	x				
AUR5A2	Quantity Surveying 2	50% exam, 50% coursework			x	x				
AUR5A3	Modern Methods of Construction	50% Presentation, 50% Exam			x	x				
AUR5A4	Commercial Management	100% coursework			x	x				
AUR5A5	Building Services	50% Exam, 50% Written Assignment					x	x		
AUR5A6	Civil Engineering Mathematics	50% in-class test, 50% in-class test			x					
AUR5A7	Water Resource Management	50% in-class test, 50% presentation			x					
AUR5A8	Infrastructure and the Environment	50% coursework, 50% presentation				x				
ENG5B2	Wind and Hydro Energy Engineering	100% coursework				x				
AUR5A9	WBL2	75% portfolio, 25% presentation			x	x				
AUR5B1	Architectural Design Technology 2	75% Portfolio, 25% Presentation					x	x		
AUR5B2	Professional Practice 2	75% Coursework, 25% Presentation					x	x		
ENG5A5	Mechanics, Structures & FEA	50% Exam, 50% coursework					x	x		
AUR5B3	Procurement and Contract Practice	50% Written Assignment, 50% Exam					x	x		
AUR697	Project Management	75% Group project, 25% Written Assignment					x			
AUR698	Individual Research Project	75% Dissertation, 25% Oral Assessment							x	
AUR699	Advanced Materials	100% Coursework							x	
AUR6A1	Flood Risk Management	100% Coursework								x
AUR6A2	Design for Climate Resilience	50% Presentation, 50% Group Project							x	
AUR6A3	Major Project (WBL DA)	100% Negotiated Learning							x	x
AUR6A4	Professional Practice 3	75% Coursework, 25% Presentation							x	x
AUR6A5	Work Based Learning 3	75% portfolio, 25% presentation							x	x

Assessment and award regulations

Derogations

For ENG495 Further Engineering Maths, ENG5B2 Wind and Hydro Energy Engineering and ENG5A5 Mechanics, Structures & FEA module, credits shall be awarded by an Assessment Board for those modules in which a pass mark (40%) has been achieved, with a minimum mark of 30% in each element of assessment.

Subject to meeting the criteria of compensation as specified in general academic regulations E10, compensation will be applied for up to a maximum of 30 credits across all levels of the programme. Major individual and group based project modules must not be compensated.

For the following modules, all assessment components must be passed.

AUR599 Building Surveying 2
AUR599 Construction Management 2
AUR5A2 Quantity Surveying 2
AUR6A3 Major Project (WBL DA)

Non Credit Bearing assessment

There are no non-credit-bearing assessments associated with the programmes described in

this specification.

Borderline Classifications (Undergraduate programmes)

Substantive modules considered in borderline calculations for each programme are as follows:

BSc (Hons) Building Surveying: **Major Project**
 BEng (Hons) Civil Engineering: **Major Project**
 BSc (Hons) Construction Management: **Major Project**
 BSc (Hons) Quantity Surveying: **Major Project**

In considering borderline cases the Assessment Board shall raise the classification to the next level if all of the following criteria are met:

- At least 50% of the credits at level 6 fall within the higher classification.
- All level 6 modules must have been passed at the first attempt.
- The mark achieved for the *substantive* module is within the higher classification.

Ordinary Degrees

N/A

Restrictions for trailing modules (Taught Masters)

N/A

Prerequisites for processing to MRes research component

N/A

15. Accreditation

Building Surveying, Construction Management and Quantity Surveying

The PSRB in these contexts is intended to be the Chartered Institute of Building [CIOB]. The CIOB currently accredits BSc (Hons) Construction Management and HNC Construction Technology titles at the University, though this expires with the September 2023 intake. It is intended that the proposed BSc (Hons) Building Surveying, BSc (Hons) Construction Management and BSc (Hons) Quantity Surveying Degree Apprenticeship programmes will be included as additional titles when an application is made for re-accreditation upon successful completion of the re-validation process.

Civil Engineering

Upon successful validation, the BEng (Hons) Civil Engineering Degree Apprenticeship will be submitted to the Joint Board of Moderators [JBM] for approval.

Upon approval by the JBM, successful completion of the BEng (Hons)) Civil Engineering Degree Apprenticeship programme will meet the required educational base for *Incorporated Engineer (I Eng)* registration with the *Institution of Civil Engineers*, the *Institution of Structural Engineers*, the *Chartered Institution of Highways and Transportation*, the *Institute of Highway Engineers* and the *Permanent Way Institution*.

The opportunity to revalidate and re-accredit programmes across all three disciplines contemporaneously will ensure that technical innovation and the objectives of significant sustainable initiatives such as The Path to a Net-zero Wales, 2020 are accommodated across the breadth of Built Environment Degree Apprenticeship provision.

16. Quality Management

All provision is expected to comply with the University processes for quality assurance, the QAA Quality Code and any specific PSRB requirements to ensure the quality of the learning and teaching on the programme. The University uses the following mechanisms to help evaluate, enhance and review programmes delivery;

Student Evaluation of Module Questionnaire
Student Voice Forum
Individual student feedback
Student representatives
Continuous Programme Monitoring and Enhancement reports
Periodic review and re-validation process
External Examiner reports
PSRB requirements and accreditation activities
National Student Survey (NSS)

External review of quality and standards within programmes is provided by External Examiners appointed by Wrexham University, who are able to compare provision sanctioned by the University with that of other Universities and Colleges of Higher Education.

A Student Voice Forum (SVF) is held twice each year to provide a plenum for students, via representatives, to contribute formal commentary as to how programmes and the learning environment within which they are delivered, are managed; minutes and responses to SVFs are subsequently posted to the Virtual Learning Environment. Furthermore, the report of the External Examiner and associated team response is made available to students via SVFs; SVF minutes and responses subsequently inform the Continuous Programme Monitoring and Enhancement process.

Students are also encouraged to approach Programme Leaders and module tutors individually, should they have any concerns in relation to their programme of study.

Formalised anonymous feedback is obtained from Student Evaluation of Module surveys which are utilised by programme teams towards informing future provision. Students are encouraged to complete Student Evaluation of Module surveys in respect of each module on-line via the 'Student Voice' Moodle folder, at mid- and end-points of module delivery

Subject Level Reviews (SLR) are prepared in respect of each programme of study by Programme Leaders at the University. SLRs collect performance data in module and programme contexts using indicators such as mean, standard deviation, retention data and feedback from students and staff. Actions recommended through this process are subsequently implemented by programme teams.

17. Support for Degree Apprentices

All apprentices will be inducted into the Degree Apprenticeship programme through a coordinated process implemented by both the employer and the Programme Leader, to ensure that the apprentice is prepared for all aspects of the apprenticeship.

Furthermore and where necessary, the Programme Leader and Enterprise Team will work with employers to ensure that they are supported and trained to provide the best experience and support for their apprentices. The University provides complementary mentoring, professional supervision and other resources to expand the skills of apprentice mentors and managers, to ensure that learning applied to the workplace is effective and impactful.

The University has a range of departments that offer support for students such as:

- Library & IT Resources
- Inclusion Services
- Careers Service
- Chaplaincy
- Counselling & Wellbeing
- Student Funding and Welfare
- Student Administration

Students are able to access support through the Virtual Learning Environment (VLE), Library services (including on-line access), funding, welfare, disability, careers and study skills support available at Wrexham University. New students joining programmes will be expected to participate in an induction programme at the University where practicable, to ensure that study is effectively supported in the contexts identified above

Please access the University's website at www.wrexham.ac.uk to find out more about the Departments.

The Student Union offers support for students, please access their website at to find out more. <https://www.wrexhamglyndwrsu.org.uk/>

All students at Wrexham University are allocated a Personal Tutor whose main responsibility is to act as the first point of contact for their personal students and to provide pastoral and academic support throughout their studies at the University.

18. Equality and Diversity

Wrexham University is committed to providing access to all students and promotes equal opportunities in compliance with the Equality Act 2010 legislation. This programme complies fully with the University's Equality and Diversity Policy, ensuring that everyone who has the potential to achieve in higher education is given the chance to do so. Please click on the following link for more information about [equality and diversity](#) .

Prifysgol Wreccsam
Wrexham University



Supplementary Documentation for Degree Apprenticeship Programme Delivery

Day/Block Release Programmes

BSc (Hons) Building Surveying
BEng (Hons) Civil Engineering
BSc (Hons) Construction Management
BSc (Hons) Quantity Surveying

Wrexham University

Mold Road, Wrexham LL11 2AW

Coleg Cambria

Bersham Road, Wrexham LL13 7UH

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Degree Apprenticeship Programme in Built Environment Overview

The degree apprenticeship programme in construction is designed to be delivered over four years, with the first two years provided by Coleg Cambria and the final two years delivered by Wrexham University. The programme combines academic learning with practical work-based experience, offering apprentices the opportunity to gain both a degree and industry experience.

Modes of Study

The programme is delivered through two study modes:

Day Release: Students will attend taught sessions one day per week during Wrexham University's academic year.

Block Release: All taught elements are delivered intensively over a 13-week period in the respective semester.

Delivery Pattern

The programme is structured to ensure academic progression and a balance between study and work-based learning:

Years 1 and 2: Core foundational modules taught at Coleg Cambria.

Years 3 and 4: Advanced modules and final-year projects delivered by Wrexham University.

Academic Progression

To support academic progression, resit periods are scheduled at the end of each academic year. These provide opportunities for students to retake assessments and meet required standards before advancing to the next stage of the programme.

This structure ensures flexibility for apprentices and employers while maintaining rigorous academic standards and preparing students for professional success in the construction and civil engineering sector.

Programme Delivery Schedule

The programme delivery schedule for both day release and block release is structured to ensure a clear progression pathway for apprentices from Year 1 to Year 4. For day release students, teaching is delivered one day per week across the academic year, allowing continuous engagement with both their studies and workplace. Block release students complete all taught modules intensively over a 13-week period within the respective semester, with the remaining time allocated to self-directed study and workplace projects.

For apprentices meeting progression requirements, the outlined schedule enables seamless advancement to subsequent years. However, for those not meeting progression standards, dedicated resit periods are incorporated. These resit opportunities provide an essential mechanism for students to address academic shortfalls and maintain their progression within the programme, ensuring a robust and supportive framework for all learners.

Year of Study	Total Number of Credits
Year 1	100 Credits
Year 2	100 Credits
Year 3	80 Credits
Year 4	80 Credits

Table 1: Overview of credit allocation for programme delivery schedule, totalling to 360 credits

Programme Structure

Year 1: BSc/BEng (Hons) Degree Apprenticeship (Provision) – Programme Structure

BSc (Hons) Building Surveying	BSc (Hons) Construction Management	BSc (Hons) Quantity Surveying	BEng (Hons) Civil Engineering
*AUR498 Work Based Learning 1			
AUR499 Science and Materials			
*AUR496 Digital Technologies in Drawing and Modelling			*AUR495 Civil Engineering Design
AUR497 Legal Principles, Compliance and Liability			AUR4A2 Geotechnics
AUR4A1 Construction Technology			ENG495 Analytical Engineering Techniques
*AUR492 Building Surveying 1	*AUR493 Construction Management 1	*AUR494 Quantity Surveying 1	*AUR4A3 Structural Mechanics
[Opt. 1] *AUR493 Construction Management 1 [Opt. 2] *AUR494 Quantity Surveying 1 [Opt. 3] *AUR491 Architectural Design Technology [Opt. 4] *AUR495 Civil Engineering Design	[Opt. 1] *AUR492 Building Surveying 1 [Opt. 2] *AUR494 Quantity Surveying 1 [Opt. 3] *AUR491 Architectural Design Technology [Opt. 4] *AUR495 Civil Engineering Design	[Opt. 1] *AUR493 Construction Management 1 [Opt. 2] *AUR492 Building Surveying 1 [Opt. 3] *AUR491 Architectural Design Technology [Opt. 4] *AUR495 Civil Engineering Design	[Opt. 1] *AUR496 Digital Technologies in Drawing and Modelling [Opt. 2] *AUR494 Quantity Surveying 1

Figure 1: BSc/BEng (Hons) Degree Apprenticeship (Provision) – Programme Structure for Year 1, any modules denoted with a single * is identified as a 10-credit module.

Year 2: BSc/BEng (Hons) Degree Apprenticeship (Provision) – Programme Structure

BSc (Hons) Building Surveying	BSc (Hons) Construction Management	BSc (Hons) Quantity Surveying	BEng (Hons) Civil Engineering
AUR4A4 Digital Technologies in Surveying			
AUR5A9 Work Based Learning 2			
AUR5A3 Modern Methods of Construction			AUR5A6 Civil Engineering Mathematics
AUR5A4 Commercial Management			AUR5A7 Water Resource Management
AUR599 Building Surveying 2	AUR5A1 Construction Management 2	AUR5A2 Quantity Surveying 2	[Opt. 1] AUR5A8 Infrastructure and the Environment [Opt. 2] ENG5B2 Wind and Hydro Energy Engineering

Figure 2: BSc/BEng (Hons) Degree Apprenticeship (Provision) – Programme Structure for Year 2, any modules denoted with a single * is identified as a 10-credit module.

Year 3: BSc/BEng (Hons) Degree Apprenticeship (Provision) – Programme Structure

BSc (Hons) Building Surveying	BSc (Hons) Construction Management	BSc (Hons) Quantity Surveying	BEng (Hons) Civil Engineering
AUR5A5 Building Services			ENG5A5 Mechanics, Structures & FEA
AUR5B3 Procurement and Contract Practice			
AUR697 Project Management			
AUR6A2 Design for Climate Resilience			AUR698 Individual Research Project

Figure 3: BSc/BEng (Hons) Degree Apprenticeship (Provision) – Programme Structure for Year 3**Year 4: BSc/BEng (Hons) Degree Apprenticeship (Provision) – Programme Structure**

BSc (Hons) Building Surveying	BSc (Hons) Construction Management	BSc (Hons) Quantity Surveying	BEng (Hons) Civil Engineering
AUR698 Individual Research Project			AUR6A2 Design for Climate Resilience
**AUR6A3 Major Project			
AUR6A4 Professional Practice 3			AUR699 Advanced Materials
			AUR6A1 Flood Risk Management

Figure 4: BSc/BEng (Hons) Degree Apprenticeship (Provision) – Programme Structure for Year 4. ** Substantive Module (40 Credits)

Programme Delivery – Year 1 and Year 2 Delivery Schedule for Coleg Cambria

Yr. 1 & Yr. 2 Student Meeting Progression Requirements

Year 1 (Day Release)		Year 1 (Block Release 13 wks.)		Year 2 (Day Release)		Year 2 (Block Release 13 wks.)	
SEM 1	40 Credits (L4) Core Modules 10 Credit (L4) Opt. Module	SEM 1	80 Credits (L4) Core Modules 10 Credit (L4) Opt. Module	SEM 1	20 Credit (L4) Core Module	SEM 1	20 Credit (L4) Core Module 40 Credits (L5) Core Modules
SEM 2	40 Credits (L4) Core Modules	SEM 2	Self-Directed Study Time	SEM 1/2	80 Credits (L5) Modules Incl. WBL Module	SEM 2	Self-Directed Study Time
SEM 1/2	10 Credit (L4) WBL Module	SEM 1/2	10 Credit (L4) WBL Module	Marks submitted to June Board		SEM 1/2	20 Credit (L5) WBL Module
Marks submitted to June Board		Marks submitted to June Board				Marks submitted to June Board	

Figure 5: Programme delivery overview for Yr.1 and Yr.2 for students meeting the progression requirements. The semester delivery is aligned to Wrexham Universities academic calendar.

Yr 1 & Yr 2 Student Not Meeting Progression Requirements

Year 1 (Day Release)		Year 1 (Block Release 13 wks.)		Year 2 (Day Release)		Year 2 (Block Release 13 wks.)	
SEM 1	40 Credits (L4) Core Modules 10 Credit (L4) Opt. Module	SEM 1	80 Credits (L4) Core Modules 10 Credit (L4) Opt. Module	SEM 1	20 Credit (L4) Core Module	SEM 1	20 Credit (L4) Core Module 60 Credits (L5) Core Modules
SEM 2	40 Credits (L4) Core Modules	SEM 2	Self-Directed Study Time	SEM 1/2	80 Credits (L5) Modules Incl. WBL Module	SEM 2	Self-Directed Study Time
SEM 1/2	10 Credit (L4) WBL Module	SEM 1/2	10 Credit (L4) WBL Module	SEM 3	Resit Period	SEM 1/2	20 Credit (L5) WBL Module
SEM 3	Resit Period	SEM 3	Resit Period	Marks submitted to September board		SEM 3	Resit Period
Marks submitted to September board		Marks submitted to September board				Marks submitted to September board	

Figure 6: Programme delivery overview for Yr.1 and Yr.2 for students not meeting the progression requirements. The semester delivery is aligned to Wrexham Universities academic calendar.

Programme Delivery – Year 3 and Year 4 Delivery Schedule for Wrexham University

Yr. 3 & Yr. 4 Student Meeting Progression Requirements

Year 3 (Day Release)		Year 3 (Block Release 13 wks.)		Year 4 (Day Release)		Year 4 (Block Release 13 wks.)	
SEM 1	40 Credits (L6) Core Modules	SEM 1	40 Credits (L5) Core Modules 40 Credits (L6) Core Modules	SEM 1	20 Credit (L6) Core Module	SEM 1	40 Credits (L6) Core Modules
SEM 2	40 Credits (L5) Core Modules	SEM 2	Self-Directed Study Time	SEM 1/2	60 Credits (L6) Modules <i>Incl. 40 Credit Major Project Module</i>	SEM 2	Self-Directed Study Time
Marks submitted to June Board		Marks submitted to June Board		Marks submitted to June Board		SEM 1/2	40 Credit (L6) Major Project Module
						Marks submitted to June Board	

Figure 7: Programme delivery overview for Yr.3 and Yr.4 for students meeting the progression requirements. The semester delivery is aligned to Wrexham Universities academic calendar.

Yr. 3 & Yr. 4 Student Not Meeting Progression Requirements

Year 3 <i>(Day Release)</i>		Year 3 <i>(Block Release 13 wks.)</i>		Year 4 <i>(Day Release)</i>		Year 4 <i>(Block Release 13 wks.)</i>	
SEM 1	40 Credits (L6) Core Modules	SEM 1	40 Credits (L5) Core Modules 40 Credits (L6) Core Modules	SEM 1	20 Credit (L6) Core Module	SEM 1	40 Credits (L6) Core Modules
SEM 2	40 Credits (L5) Core Modules	SEM 2	Self-Directed Study Time	SEM 1/2	60 Credits (L6) Modules <i>Incl. 40 Credit Major Project Module</i>	SEM 2	Self-Directed Study Time
SEM 3	Resit Period	SEM 3	Resit Period	SEM 3	Resit Period	SEM 1/2	40 Credit (L6) Major Project Module
<i>Marks submitted to September board</i>		<i>Marks submitted to September board</i>		<i>Marks submitted to September board</i>		SEM 3	Resit Period
						<i>Marks submitted to September board</i>	

Figure 8: Programme delivery overview for Yr.3 and Yr.4 for students not meeting the progression requirements. The semester delivery is aligned to Wrexham Universities academic calendar.

Adjustment to 24/25 Yr.2 Block Delivery Only

Due to a slight delay in the announcement of the programmes by the Welsh Government, there was limited time for promotion, resulting in a last-minute intake of students from Jones Brothers Civil Engineering UK Ltd in Ruthin. To accommodate this intake, the following programme delivery structure has been implemented. This structure ensures that all apprentices receive the required teaching and support while maintaining the integrity of the programme's academic and work-based learning objectives. Adjustments have been carefully planned to balance the needs of the new intake with the existing delivery schedule, providing a seamless integration into the apprenticeship programme.

Year 2 (Block Release 13 wks.)	
SEM 2	20 Credit (L4) Core Module 60 Credits (L5) Core Modules
SEM 3	Self-Directed Study Time
SEM 2/3	20 Credit (L5) WBL Module
Marks submitted to September board	

Figure 9: Adjusted programme delivery overview for Yr.2 block delivery only. The semester delivery is aligned to Wrexham Universities academic calendar.