

University of the West of Scotland
Undergraduate Programme Specification

Session: 2022/23

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Named Award Title:	BEng (Hons) GA Civil Engineering Single
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Award Title for Each Award:	BEng (Hons) GA Civil Engineering BEng GA Civil Engineering Dip HE Engineering Cert HE Engineering
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Date of Validation:	April 2018
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Details of Cohorts Applies to:	
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Awarding Institution/Body:	University of the West of Scotland
Teaching Institution:	University of the West of Scotland
Language of Instruction & Examination:	English
Award Accredited By:	Joint Board of Moderators (JBM)
Maximum Period of Registration:	4 years
Mode of Study:	Full Time
Campus:	Paisley

School:	School of Computing, Engineering and Physical Sciences
Programme Board	Engineering
Programme Leader:	Dr Ashwini Konanahalli

Admission Criteria

Candidates must be able to satisfy the general admission requirements of the University of the West of Scotland as specified in Chapter 2 of the University Regulatory Framework together with the following programme requirements:

SQA National Qualifications

Grades BBBC @ Scottish Higher including Mathematics and one science, plus English and a Science subject at Standard Grade (3 or above), or 102 UCAS Tariff points. An Appropriate Foundation Apprenticeship or Modern Apprenticeship may be considered.

or GCE

Grades CC @ A level including Mathematics and another science subject, plus three GCSEs (C or above) including English and a science subject or 88 UCAS Tariff points.

or SQA National Qualifications/Edexcel Foundation

An appropriate HNC/HND award with the level of entry and/or credit awarded being subject to the content of the HN programme

Other Required Qualifications/Experience

Applicants may also be considered with other academic, vocational or professional qualifications deemed to be equivalent. For example, professional qualifications such as Autodesk certification together with relevant work experience will be considered for entry to the programme.

Apprentices may be considered for Advanced Entry to Year 2 provided that they have completed a relevant MA or have a minimum of 1 year of sector specific work experience at a level equivalent to the point of entry. In addition to: SQA National Qualifications - An appropriate HNC/D award with the level of entry and/or credit awarded being subject to the content of the programme with Grade A in Graded Unit.

For Advanced Entry to Year 3: An appropriate HND with Grade B in Graded Unit.

Further desirable skills pre-application

General Overview

GENERAL DESCRIPTION OF THE PROGRAMME

Civil engineers are concerned with the planning, design, construction and maintenance of buildings, bridges, roads, airfields, water supply, drainage and sewage, and many other projects which serve the community in its daily life. Careers for qualified civil engineers are varied, ranging from engineering design and construction in private industry to employment with nationalised industries or with local, regional or central government.

The subjects covered in the programme are as follows:

Level 7 (Year 1): Introduction to Engineering Design; Technical Communication; Introduction to Civil Engineering; and Mathematics.

Level 8 (Year 2): Mathematics for design; Hydraulics; Structural design; Sustainability; and materials in Civil Engineering

Level 9 (Year 3): Project Management; Water Engineering; Structural Engineering 1; Applied soil mechanics; and construction technology

Level 10 (Year 4): Advanced construction materials; Geotechnical Engineering; Structural Engineering 2; Construction Management, and Applied research project.

PROFESSIONAL ACCREDITATION

GA-Civil Engineering programme is accredited by JBM as part satisfying the academic base for a Chartered Engineer, and as fully satisfying the academic base for an Incorporated Engineer, under the provisions of UK-SPEC.

WORK-BASED LEARNING (WBL)

One of the most important aspects of the Graduate Apprenticeship (GA) programme is the mode of learning being Work-Based. GA combines academic learning with real-time practical experience in the workplace, the GA programme will deliver industry-relevant skills and qualifications. GAs are developed in collaboration with employers to ensure that the learning is relevant to industry and that apprentices can apply their learning in the workplace immediately. GA could provide apprentices with good means for skills development and career progression within their organisation. A third of the programme is delivered through WBL-mode where the learning is dictated by the apprentice's work activities. The remainder of the programme is delivered through a blended-approach with a mix of face-to-face and distance learning. In the programme's delivery method, a Project-Based Learning (PBL) approach is emphasised to enable students to gain knowledge and skills by working for an extended period of time to investigate and respond to an authentic, engaging and complex question, problem, or challenge.

DURATION OF STUDY

Students should normally complete the BEng (Hons) Civil Engineering programme within 4 -years (for which they have been fully funded by Skills Development Scotland- SDS).

TEACHING APPROACH

The teaching and learning methods employed by staff in the delivery of the module portfolio covers a wide range of established and some novel approaches. Much of this is left to the professionalism of the staff delivering the material with traditional lectures and tutorials still forming the basis for much of the teaching within civil engineering. Extensive use is also made of laboratories, seminars, group work, independent learning and demonstrations. More use is now being made of PBL materials in the teaching environment. One of the main objectives in this area is to keep teaching materials as interesting and as relevant as possible to ensure student enthusiasm for the subjects being presented. Staff make full use of all technologies when delivering material to students including high quality notes, use of multimedia presentations and use of the internet/electronic technology. Civil engineering has a policy of using small tutorial groups in key subject areas and either sub-divides cohorts into small groups or increases staff numbers in classes or laboratories. All modules are taught by subject experts and for final year students staff make use of materials and topics raised through their professional activities whether research or consultancy based. Many case studies and examples of applications are taken from live industrial situations. Engineering has always taken a lead in the use of IT to either deliver material or to supplement and reinforce the traditional teaching and learning approaches. Engineering has its own extensive Networks (currently running five servers) to support all of the area's activity. Students have access to 100+ high specification PC workstations in state of the art air- conditioned laboratories dedicated specifically for the Engineering students. Students and staff have personal accounts for the Engineering networks with students able to gain 24-hour access to one of the area's Computing Laboratories, seven days per week. Staff use the networks to deliver materials electronically. Indeed, many modules are now supported electronically, providing notes, copies of lectures, models, sample simulations etc. The standard system for providing a VLE (Virtual Learning Environment) within the University is Moodle. This system is used mainly for dissemination of materials and information regarding module administration. Students can also contact staff via e-mail and vice-versa. Students are supplied with staff contact details (including e-mail addresses) in the Programme handbooks. There are examples within the civil engineering teaching where staff make use of the VLE to perform additional Teaching and Learning activities such as on-line tests and assessments. A variety of assessment methods are used throughout programmes. These range from class tests, laboratory reports, design assignments, individual and group presentations and formal examinations. Both group project work and individual project work are incorporated into the curriculum so that students develop the learning skills associated with group and independent working as well as giving presentations on their work. Mixtures of formative and summative methods are used in the assessment of student performance within Civil Engineering. While most of the assessments are summative in nature, informal formative feedback is frequently given to students prior to submission of summative assessments. Formative feedback and constructive comments are given on coursework submissions, and where possible this provides students with regular feedback. Anonymous marking is undertaken where possible. Honours projects and group projects are double marked.

To provide flexible and mobile learning, Moodle offers apps for iOS, Android, and Windows phones. We will ensure that the content of course material is available and readily accessible to learners to facilitate mobile learning (anywhere and anytime). The School has appointed a full-time Digital Learning Technologist (DLT) to work across both frameworks and support the Programme Teams. The focus of the role is on providing pedagogical and technical support to academic staff developing materials for e-Learning delivery using the University's Virtual Learning Environment (VLE), Moodle.

We will introduce digital tools throughout the delivery of the programme to: 1) provide an interactive and engaging experience for the apprentices; 2) inform business development opportunities for the supporting employers.

The overall aims of the programme are to:

- i) Develop critical, analytical problem-based learning skills and the transferable skills to prepare the student for graduate employment;
- ii) Enable the student to engage in lifelong learning, study and enquiry, and to appreciate the value of education to society;
- iii) Assist the student to develop the skills required for both autonomous practice and team-working;

- iv) Develop an understanding of fundamental natural laws and their relevance to civil engineering and associated specialisations;
- v) Develop the ability to apply this understanding, in conjunction with observed information, to the solution of engineering problems;
- vi) Develop the ability to undertake engineering design, appreciating the variety of design solutions;
- vii) Develop the ability for group project work and individual project work;
- viii) Develop knowledge and appreciation of the science, engineering and properties of construction materials;
- ix) Develop interest in the art and practice of civil engineering, and the structure and management of the civil engineering industry;
- x) Create awareness of the continuing development of civil engineering and an appreciation of the need for continued study and personal and professional development throughout a career leading to Incorporated Engineer status and beyond;
- xi) Develop awareness of the procedures used for project and business management;
- xii) Develop awareness of the health and safety issues and environmental issues;
- xiii) Develop the ability to communicate clearly and concisely by means of all the recognised communication media;
- xiv) Promote an understanding of the position and responsibilities of civil engineers in society.
- xv) Combine academic knowledge with skills development to enable participants to become more effective and productive in the workplace.
- xvi) Understand the business activities and operations of the apprentice's host organisation and contribute effectively to its development.

Student Journey example: For a student entry at L7, they will enrol on 3 modules in T1 namely: GA-Mathematics for Engineers (20-credits), and two 40-credit modules - long and thin - namely: WBL 1 and Introduction to Engineering Design. Students will be attending classes/tutorials on campus once every week, in addition to online engagement activities through the VLE. In T2, the long and thin modules would be carried-over in addition to the GA-Technical communication module (20-credits). Again, student will be attending classes/tutorials on campus once every week with supplementary online engagement activities. As mentioned above, the student would be encouraged to align their studying for GA-BEng Civil Engineering along with their work activity to maximise the benefit of their learning experience at UWS.

Learners journey for all years is available [here](#)

Graduate Attributes, Employability & Personal Development Planning

GRADUATE ATTRIBUTES

Graduate attributes are the skills, personal qualities and understanding to be developed through your university experience that will prepare for life and work in the 21st century.

You may not realise it at the time but being a university student will expose you to and help you develop many skills and attributes that will help you make a contribution to your community and society at large. Apart from the subject knowledge and expertise you will develop at university, there are many skills, abilities and qualities that will help you beyond your university studies.

These will develop within you during your studies and will help prepare you for gaining employment and making a positive contribution to society.

You will likely acquire skills such as report writing, working to deadlines, making presentations, working in teams, creating portfolios, playing sports, being members of societies and volunteering. Some abilities you will develop include, thinking critically and creatively, and in an analytical manner whilst being able to work effectively independently and collaboratively as part of a team.

We, at UWS, are totally committed to help you develop these transferable skills and abilities so as you may graduate knowing that you can make a difference to society. The UWS Graduate Attributes were created to reflect the range of skills, qualities and abilities you can develop at UWS which will help to prepare you for success outwith/beyond university.

The programme will support the apprentices to attain the following graduate attributes:

Universal - globally relevant with comprehensively applicable abilities, skills and behaviours

Work ready - dynamic and prepared for employment in complex, ever-changing environments which require lifelong learning and resilience

Successful - as a UWS graduate with a solid foundation on which to continue succeeding and realising potential across various contexts

Through studying and graduating from UWS, apprentices will develop attributes across three dimensions:

Academic – knowledge, skills and abilities related to high-level academic study

Personal – qualities and characteristics of well-rounded, developed, responsible individuals

Professional – skills, aptitudes and attitudes required for professional working life in the 21st Century

Graduate Attributes in the programme will be addressed through core learning material to acquire academic knowledge, and PDP activities (for personal & professional development) – as explained below.

The Personal Development Planning (PDP) process gives the opportunity for engagement of students with a set of core activities, which include:

- reflection on prior experience, personal attributes and goals;
- audits of skills and feedback on their development;

- opportunities and guidance on the recording of achievements;
- the identification/development of learning goals;
- opportunities to reflect on this material and to gain feedback;
- opportunities (and guidance) on presentation of evidence for different audiences and planning of future
- learning and career development (such as CVs);
- maintaining an effective PDP record.

Personal Development Plan (PDP) in the programme

PDP will be aligned with the apprentices' workplace requirements and clearly identified in their Individual Learning Plan (ILP) - as agreed by their academic and industrial mentors. There are 20 PDP hours allocation in each Work-Based Learning module. In addition to acquiring new knowledge, the Apprentices will have the opportunity to develop skills in-line with their job role or careers aspiration – which may include soft skills (such as people management & leadership) or learning 3D modelling skills. We will encourage students to develop their skills through MOOC (Massive Open Online Courses), e.g. through recommended LinkedIn Learning, where appropriate.

The **employability skills and graduate attributes** which Students will gain experience in developing, applying and reflecting upon during the workplace learning will be those identified by The Council for Industry and Higher Education (CIHE) (2006) as the key competencies which employers value as defined below

- Cognitive skills (attention to detail, analysis and judgment)

- o Demonstrate the use of their knowledge, understanding and skills, in both identifying and analysing problems and issues and formulating, evaluating and applying evidence-based solutions and arguments.
- o Undertake critical analysis, evaluation and/or synthesis of ideas, concepts information and issues
- o Identify and analyse routine professional problems and issues
- o Draw on a range of sources in making judgments

- Generic competencies (planning & organisation, influencing, written communication, questioning, listening, teamworking, interpersonal sensitivity, organisational sensitivity and lifelong learning and development)
- o Well developed skills for the gathering, evaluation, analysis and presentation of information, ideas, concepts and quantitative and/or qualitative data, drawing on a wide range of current sources. This will include the use of ICT as appropriate to the subject(s).
- o Communication of the results of their own and other work accurately and reliably in a range of different contexts using the main specialist concepts, constructs and techniques of the subject(s);
- o Identifying and addressing their own learning needs including being able to draw on a range of current research, development and professional materials;
- o Interpreting, using and evaluating numerical and graphical data to achieve goals targets
- o Making formal and informal presentations on standard/mainstream topics in the subject/discipline to a range of audiences
- o Work under guidance with qualified practitioners
- o Practice in ways which take account of own and others' roles and responsibilities
- o Take some responsibility for the work or others and for a range of resources

- Personal capabilities (creativity, decisiveness, initiative, adaptability/flexibility, achievement orientation, tolerance for stress and leadership)
- o Application of their subject and transferable skills to contexts where criteria for decisions and the scope of the task may be well defined but where personal responsibility, initiative and decision-making is also required.
- o Exercising autonomy and initiative in some activities at a professional level

- Technical ability (knowledge of key trends in modern technology and experience of using modern technology)
- o Use of a range of IT applications to support and enhance work particularly emerging digital tools.

- Practical and professional elements (professional expertise, process operation and image)
- o Show familiarity and competence in the use of routine materials, practices and skills and of a few that are more specialised, advanced and complex.
- o Practise in a range of professional level contexts which include a degree of unpredictability;
- o Deal with ethical and professional issues in accordance with current professional and/or ethical codes or practices, seeking guidance where appropriate

Work Based Learning/Placement Details

Work Based Learning (WBL) is central to the delivery of the GA programme (accounting 25% of the programme) to ensure the alignment to the employer's needs as well as the personal development needs of the apprentice. There is a 40-credit WBL module at each level. The WBL modules ensure that the content being delivered is contextualised in the workplace in order to maximise the impact of learning for the benefit of both the company and the student. Moreover, students will be encouraged to think about their learning in the context of the workplace throughout the programme. 'Learning in a context' is the ethos of the GA programme. The remainder of the programme will be delivered through a blended learning approach through the mix of face-to-face and distance learning. It has to be noted that a Project-Based Learning (PBL) approach will be emphasised throughout the programme to enable students to gain knowledge and skills by working for an extended period of time to investigate and respond to an authentic, engaging and complex question, problem, or challenge.

The WBL modules and in fact the entire GA programme will be governed by an Individual Learning Plan (ILP). An Individual Learning Plan (ILP) will be agreed at the outset of the programme between the programme leader/academic mentor, industry mentor, and GA project manager. The ILP supports the PDP (Personal Development Plan) of the apprentice's role within their organisation. The ILP is the core document in planning, recording and evaluating the apprentice's learning, training, and experiential journey for the coming year. The ILP forms an essential record that demonstrates that the apprentice has the necessary skills and knowledge required of their role (e.g. Civil Engineer, Technician or Incorporated Engineer). The ILP also identifies where the day to day work activities undertaken in the workplace can contribute towards academic learning and assessment. The apprentice will be encouraged to develop a 'Learning Blog or Vlog' where they would have an opportunity to express themselves freely and reflect on their learning journey. Students could use word press or LinkedIn platform for blogging or even create their own YouTube/Vimeo channel. The aim is to empower student learning so they could provide an authentic account of their learning on the programme as they progress.

During the GA programme, the student must be employed full time with a company that specialises in civil engineering works or related activities under qualified supervision from an industrial mentor. The working environment should provide the student with the opportunity to relate the academic content of the programme to the profession, to observe how engineering works are organised and administered, and to accept a degree of responsibility commensurate with his/her knowledge, experience and maturity - as set-out agreed in the aforementioned ILP.

Engagement

In line with the [Academic Engagement Procedure](#), Students are defined as academically engaged if they are regularly engaged with timetabled teaching sessions, course-related learning resources including those in the Library and on the relevant learning platform, and complete assessments and submit these on time.

Equality and Diversity

The University's Equality, Diversity and Human Rights Procedure can be accessed at the following link: [UWS Equality and Diversity Policy](#)

Programme structures and requirements, SCQF level, term, module name and code, credits and awards ([Chapter 1, Regulatory Framework](#))

A. Learning Outcomes (Maximum of 5 per heading)

Outcomes should incorporate those applicable in the relevant QAA Benchmark statements

Knowledge and Understanding

A1	Demonstrate knowledge and understanding of essential facts and principles of civil engineering, and its underpinning science and mathematics.
A2	Basic knowledge and understanding of the wider multidisciplinary engineering context and its underlying principles together with the commercial context and sustainability of engineering activities.
A3	Knowledge and understanding of the scientific principles underpinning relevant current technologies, and their evolution.
A4	Knowledge and understanding of mathematics necessary to support application of key engineering principles.
A5	Basic knowledge and understanding of the use of relevant materials, equipment and processes. In addition to basic knowledge of occupational health and safety, innovation, and sustainability.

Practice - Applied Knowledge and Understanding

B1	Develop a basic knowledge, understanding and practical engineering skills acquired through work carried out in laboratories and workshops.
B2	Develop practical engineering skills acquired through individual and group project work.
B3	Basic knowledge and understanding of the use and application of technical literature and other information sources.
B4	Awareness of quality, performance, and occupational health & safety issues within engineering.

Communication, ICT and Numeracy Skills

C1	Develop basic transferable skills in communication, the use of IT facilities and information retrieval skills.
C2	Be able to apply computer software relevant to civil engineering.
C3	Develop an understanding of emerging digital technologies to support learning and industry practice.
C4	Develop professional presentation skills.

Generic Cognitive Skills - Problem Solving, Analysis, Evaluation

D1	Develop transferable skills that will be of value in problem solving.
D2	Be able to apply appropriate quantitative mathematics, science and engineering tools to the analysis of simple problems.

Autonomy, Accountability and Working With Others

E1	Develop an initial understanding of the social, environmental, ethical, economic and commercial considerations affecting the exercise of engineering judgement.
E2	Develop transferable skills that will be of value in working with others.
E3	Develop basic skills in planning, self-learning and improving performance, as the foundation for lifelong learning/CPD.
E4	Understand the need for a high level of professional and ethical conduct in engineering.

Core Modules

SCQF Level	Module Code	Module Name	Credit	Term			Footnotes
				1	2	3	

7	ENGG07002	Applied Engineering Science	20		✓		
7	MATH07006	Engineering Mathematics 1	10	✓			
7	MATH07007	Engineering Mathematics 2	10				
7	ENGG07001	Engineering Mechanics	20	✓			
7	ENGG07004	Technical Communications	20	✓			
7	ENGG07017	WBL1: Introduction to Engineering	40	✓	✓	✓	

* Indicates that module descriptor is not published.

Footnotes

WBL1 and Introduction to Engineering Design are long and thin modules.

Optional Modules

SCQF Level	Module Code	Module Name	Credit	Term			Footnotes
				1	2	3	

* Indicates that module descriptor is not published.

Footnotes

Criteria for Progression and Award

To progress from SCQF 7 to SCQF 8 in this programme, students are normally required to obtain 120 credits at SCQF 7 from the above programme.

Refer to Regulation 3.14 regarding progression with credit deficit, note, the decision to permit a proceed with carry is not automatic but is subject to detailed discussion at the Progression & Award Board. In the case of Civil Engineering, students may only carry one 20 credit module between levels.

Students obtaining 120 credits at SCQF 7 or above from the programme are eligible for the exit award of the Certificate of Higher Education in Engineering. The award of distinction can be made to a student obtaining a certificate as stated in the University Regulations.

B. Learning Outcomes (Maximum of 5 per heading)

Outcomes should incorporate those applicable in the relevant QAA Benchmark statements

Knowledge and Understanding

A1	Demonstrate more detailed knowledge and understanding of essential facts, concepts, theories and principles of civil engineering.
A2	Knowledge and understanding of and ability to use relevant materials, equipment and processes.
A3	Develop an initial knowledge and understanding of commercial and economic context of civil engineering processes.
A4	Understanding of the requirement for engineering activities to promote sustainable development, occupational health and safety, and innovation.

Practice - Applied Knowledge and Understanding

B1	Develop knowledge, understanding and practical civil engineering skills acquired through individual and group project work and through design work.
B2	Knowledge and understanding of laboratory and workshop practice and construction processes.
B3	Awareness of quality issues and their application to continuous improvement.
B4	Understanding use and application of technical literature and other information sources

Communication, ICT and Numeracy Skills

C1	Possess practical civil engineering skills acquired through the use of computer software.
C2	Possess transferable skills in communication, the use of IT facilities and information retrieval skills.
C3	Possess skills in emerging digital technologies.

Generic Cognitive Skills - Problem Solving, Analysis, Evaluation

D1	Be able to apply appropriate quantitative science and engineering tools to the analysis of basic civil engineering problems.
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D2	Ability to monitor, interpret and apply the results of analysis.
D3	Ability to apply basic quantitative methods relevant to civil engineering problems.
D4	Ability to define a problem and identify constraints.
D5	Introduce the use of appropriate codes of practice and industry standards.
Autonomy, Accountability and Working With Others	
E1	Possess transferable skills that will be of value in working with others
E2	Develop skills in planning, self-learning and improving performance, as the foundation for lifelong learning/CPD.
E3	Develop an appreciation of the social, environmental, ethical, economic and commercial considerations affecting the exercise of engineering judgement.
E4	Develop an awareness of the framework of relevant legal requirements governing civil engineering activities, including personnel, health, safety, and risk (including environmental risk) issues.

Core Modules

SCQF Level	Module Code	Module Name	Credit	Term			Footnotes
				1	2	3	
8	ENGG08016	Civil Engineering Materials	20		✓		
8	ENGG08011	Design of Structural Elements	20	✓			
8	GRLA08010	GA-Mathematics for Engineering 2	20		✓		
8	ENGG08012	Hydraulics	20	✓			
8	WRKB08001	WBL 2 - Work based Learning (40 Point)	40	✓	✓		

* Indicates that module descriptor is not published.

Footnotes

WBL 2 is a long and thin module.

Optional Modules

SCQF Level	Module Code	Module Name	Credit	Term			Footnotes
				1	2	3	

* Indicates that module descriptor is not published.

Footnotes

Criteria for Progression and Award

To progress from SCQF 8 to SCQF 9 in this programme, students are normally required to obtain 240 credits, of which 120 credits are at SCQF 8 from the above programme.

Refer to Regulation 3.14 regarding progression with credit deficit, note, the decision to permit a proceed with carry is not automatic but is subject to detailed discussion at the Progression & Award Board. In the case of Civil Engineering, students may only carry one 20 credit module between levels.

Students obtaining 240 credits of which a minimum of 100 are at SCQF 8 or above from the programme are eligible for the exit award of the Diploma of Higher Education in Engineering. The award of distinction can be made to a student obtaining a diploma as stated in the University Regulations.

C. Learning Outcomes (Maximum of 5 per heading)

Outcomes should incorporate those applicable in the relevant QAA Benchmark statements

Knowledge and Understanding	
A1	Demonstrate broad, integrated and detailed knowledge and critical understanding of essential facts, concepts, theories and principles of civil engineering.
A2	Knowledge and understanding of the wider multidisciplinary engineering context and its underlying principles.
A3	Knowledge and understanding of the social, environmental, ethical, economic and commercial considerations affecting the exercise of engineering judgement.
A4	Knowledge of management techniques, which may be used to achieve engineering objectives within civil engineering.

A5	Demonstrate the capacity to critically reflect on the nature of workplace learning from a personal perspective.
Practice - Applied Knowledge and Understanding	
B1	Be able to comprehend the broad picture and thus work with an appropriate level of design detail.
B2	Possess detailed knowledge, understanding and practical civil engineering skills acquired through work carried out in laboratories, through individual and group project work, through design work and through Workplace Learning.
B3	Use creativity and innovation in a civil engineering context.
B4	Relate elements of the work experience to themes and issues of academic study relevant to the programme of study and the student's prior experience.
B5	Demonstrate an awareness and understanding of organisational structures and employee roles in an applied setting.
Communication, ICT and Numeracy Skills	
C1	Broaden civil engineering skills acquired through use of computer software in design and analysis.
C2	Ability to apply computer software to solve civil engineering problems.
C3	Advanced specialised skills in support of established practices
Generic Cognitive Skills - Problem Solving, Analysis, Evaluation	
D1	Be able to demonstrate creative and innovative ability in the synthesis of solutions through critical analysis
D2	Be able to monitor, interpret and apply the results of analysis and modelling in order to solve civil engineering problems, apply technology and implement engineering design.
D3	Be able to apply a systems approach to civil engineering problems through know-how of the application of the relevant technologies.
D4	Be able to define a design problem, identify constraints and design solutions according to customer and user needs.
D5	Be able to use appropriate design codes of practice and industry standards and ensure fitness for purpose for a design.
Autonomy, Accountability and Working With Others	
E1	Possess skills in planning self-learning and improving performance, as the foundation for lifelong learning/CPD.
E2	Work with others to develop civil engineering solutions.
E3	Understanding of the framework of relevant legal requirements governing civil engineering activities, including personnel, health, safety, and risk (including environmental risk) issues.
E4	Outline the importance of working relationships and interpersonal skills in attaining the objectives of the employer.

Core Modules

SCQF Level	Module Code	Module Name	Credit	Term			Footnotes
				1	2	3	
9	ENGG09016	Applied Soil Mechanics	20		✓		
9	ENGG09013	Structural Engineering 1	20	✓			
9	ENGG09014	Water Resources Engineering	20	✓			
9	ENGG09050	WBL 3: Project Management	40	✓	✓		

* Indicates that module descriptor is not published.

Footnotes

WBL 3 is a long and thin module around the theme of project management.

Optional Modules

SCQF Level	Module Code	Module Name	Credit	Term			Footnotes
				1	2	3	
9	GRLA09010	GA - Group Project	20		✓		

* Indicates that module descriptor is not published.

Footnotes

Criteria for Progression and Award

Criteria for Progression and Award

To progress from SCQF 9 to SCQF 10 in this programme, students are normally required to obtain 360 credits of which 120 credits are at SCQF 9 from the above programme.

Students obtaining 360 credits of which 120 credits are at SCQF 9 from the above programme are eligible for the exit award of BEng Civil Engineering.

BSc Civil Engineering

Students who are not eligible for the BEng may be able to obtain the exit award of BSc Civil Engineering and should discuss a suitable selection of modules with Civil Engineering staff. The exit award of BSc Civil Engineering allows a wider selection of modules as follows:

Core Modules

SCQF Level 9, ENGG09013, Structural Engineering 1, 20 Credit, Trimester 1

SCQF Level 9, ENGG09018, Independent Study, 20 Credit, Trimester 2

Optional Modules

SCQF Level 9, ENGG09004, Project Management, 20 Credit, Trimester 1

SCQF Level 9, ENGG09014, Water Resources Engineering, 20 Credit, Trimester 1

SCQF Level 9, ENGG09016, Applied Soil Mechanics, 20 Credit, Trimester 2

SCQF Level 9, ENGG09015, Construction & Structural Engineering 2, 20 Credit, Trimester 2

SCQF Level 9, ENGG09050, WBL3- Project Management, 40 Credit, Trimester 1 and 2

SCQF Level 9, GRLA09010, GA - Group Project, 20 Credit, Trimester 2

A maximum of two Level 10 modules can be chosen from:

SCQF Level 10, ENGG10014, Ground & Highway Engineering, 20 Credit, Trimester 1

SCQF Level 10, ENGG10041GA-Structural Engineering 2, 20 Credit, Trimester 1

SCQF Level 10, ENGG10016, Advanced Construction Materials, 20 Credit, Trimester 2

SCQF Level 10, ENGG10015, Modern Practice in Construction Management, 20 Credit, Trimester 2

Students obtaining 360 credits, of which 120 credits are from the above list, are eligible for the exit award of BSc Civil Engineering.

Students obtaining 360 credits with a minimum of 90 credits at SCQF 9 or above, 300 credits being in Engineering, and not as laid out above, may be entitled to exit with BSc Engineering, at the discretion of the SBE.

The award of distinction can be made to a student obtaining a pass degree as stated in the University Regulations.

D. Learning Outcomes (Maximum of 5 per heading)

Outcomes should incorporate those applicable in the relevant QAA Benchmark statements

Knowledge and Understanding

A1 Knowledge that integrates the principal areas of civil engineering.

A2 Detailed knowledge and critical understanding of some more advanced aspects of civil engineering.

A3 Detailed knowledge and critical understanding of the wider multidisciplinary engineering context.

Practice - Applied Knowledge and Understanding

B1 Detailed knowledge and understanding of contexts in which engineering knowledge can be applied.

B2 Possess a broad range of practical engineering skills acquired through individual and group project work, through design work and in the development and use of computer software in design and analysis.

B3 Use creativity and innovation in a multi-disciplinary design team.

B4 Understanding and application of the use of technical literature and other information sources.

B5 Execute a defined project of research, development or investigation.

Communication, ICT and Numeracy Skills

C1 Possess a range of practical civil engineering skills acquired through design work and in the development and use of computer software in design and analysis

C2 Ability to apply computer software in order to solve more complex civil engineering problems.

C3 Make formal presentation about a specialized topic to peers and academic staff.

Generic Cognitive Skills - Problem Solving, Analysis, Evaluation

D1 Be able to demonstrate creative and innovative ability in the synthesis of civil engineering solutions and to apply appropriate quantitative methods to the critical analysis and solution of problems.

D2	Investigate and define a design problem and identify constraints including environmental and sustainability limitations, health and safety and risk assessment issues.
D3	Critical understanding of design needs and the importance of considerations such as aesthetics.
D4	Understanding of appropriate design codes of practice and industry standards and ensure fitness for purpose for all aspects of the design.
Autonomy, Accountability and Working With Others	
E1	Take significant responsibility for individual project work.
E2	Work effectively under guidance in a peer relationship with academic staff

Core Modules

SCQF Level	Module Code	Module Name	Credit	Term			Footnotes
				1	2	3	
10	ENGG10016	Adv Construction Materials	20		✓		
10	ENGG10041	GA-Structural Engineering 2	20	✓			
10	ENGG10014	Ground and Highway Engineering	20	✓			
10	ENGG10015	Modern Practice in Construction Management	20		✓		
10	ENGG10042	WBL 4 - Applied research project	40	✓	✓	✓	

* Indicates that module descriptor is not published.

Footnotes

WBL 4 is a long and thin module that relates to an applied research topic that MUST be of relevance to the apprentice's employer.

Optional Modules

SCQF Level	Module Code	Module Name	Credit	Term			Footnotes
				1	2	3	

* Indicates that module descriptor is not published.

Footnotes

Criteria for Award

To be eligible for the award of GA in BEng Civil Engineering (Hons) degree a candidate must hold 480 credits, including 120 at SCQF 10 from the above programme.

Regulations of Assessment

Candidates will be bound by the general assessment regulations of the University as specified in the [University Regulatory Framework](#).

An overview of the assessment details is provided in the Student Handbook and the assessment criteria for each module is provided in the module descriptor which forms part of the module pack issued to students. For further details on assessment please refer to Chapter 3 of the Regulatory Framework.

To qualify for an award of the University, students must complete all the programme requirements and must meet the credit minima detailed in Chapter 1 of the Regulatory Framework.

Combined Studies

There may be instances where a student has been unsuccessful in meeting the award criteria for the named award and for other more generic named awards existing within the School. Provided that they have met the credit requirements in line with the SCQF credit minima (please see Regulation 1.21), they will be eligible for an exit award of CertHE / DipHE or BA / BSc in Combined Studies.

For students studying BA, BAcc, or BD awards the award will be BA Combined Studies.

For students studying BEng or BSc awards, the award will be BSc Combined Studies.

Changes

Changes made to the programme since it was last published:

- Changes made to the wordings of Level 7, 8, 9, and 10 outcomes. The changes are to incorporate the following learning themes: Occupational health, safety, sustainability, and innovation.
- Changes include, Programme Leader; Amendment to Level 8 i.e.Replaced WBL2: Digital Surveying and Sustainability (ENGG08034) with Work based Learning 2 (WRKB08001); Amendments to Level 9 - Changed Negotiated Learning from Core module to Optional Module. A new module GA- Group Project has been introduced which is listed as recommended option (This amendment will offer students choice between two optional modules - GRLA09008: Negotiated Learning 3 and GA- Group Project); Also some specific terminology listing digital tools like AR, VR, thermography, drone surveying, and cloud computing has been removed. Broader/generic terminology like 'digital tools' is retained.

Changes made 21/04/21 include;

LEVEL 8

Replace ENGG08033 GA-Structural Design with ENGG08011 Design of Structural Elements

Replace ENGG08031 GA-Hydraulics with ENGG08012 Hydraulics.

Replace ENGG08032 GA - Civil Engineering Materials module with ENGG08016 Civil Engineering Materials module. This will change the Assessment schedule from 100% Coursework to 50% Examination and 50% Coursework and update the Learning Outcomes

LEVEL 9

Replace ENGG09044 GA-Structural Engineering 1 with ENGG09013 Structural Engineering 1.

Replace ENGG09045 GA - Water Resources Engineering with ENGG09014 Water Resources Engineering

Replace ENGG09043 GA - Applied Soil Mechanics with ENGG09016 Applied Soil Mechanics. This will change the Assessment schedule from 100% Coursework to 60% Examination and 40% Coursework and update the Learning Outcomes.

LEVEL 10

Replace ENGG10040 GA - Ground and Highway Engineering with ENGG10014 Ground and Highway Engineering.

Align ENGG10041 GA - Structural Engineering 2 with ENGG10013 Structural Engineering 3. This will change the Assessment schedule from 100% Coursework to 60% Examination and 40% Coursework and update the Learning Outcomes.

Replace ENGG10039 GA-Construction Management with ENGG10015 Modern Practice in Construction Management. This will change the Assessment schedule from 100% Coursework to 60% Examination and 40% Coursework and update the Learning Outcomes.

Replace ENGG10043 GA - Advanced Construction Materials with ENGG10016 Adv Construction Materials.This will change the Assessment schedule from 100% Coursework to 60% Examination and 40% Coursework and update Learning outcomes

Replaced GA- Introduction to Engineering Design with ENGG07002 Applied Engineering Science and ENGG07001 Engineering Mechanics.

V1.06

GRLA07005 GA-Mathematics for Engineering 1 (20 Credits) replaced with MATH07006 Engineering Mathematics 1 (10 Credits) and, MATH07007 Engineering Mathematics 2.

GRLA07006 GA-Technical Communication (20 Credits) replaced with ENGG07004 Technical Communication (20 Credits).

JBM Accrediation is updated.

V1.07

Information on Exit award for Level 9 specified.

Version Number: 1.06