

MEng/BEng Civil and Structural Engineering Programme Specification

<https://www.bradford.ac.uk/courses/ug/civil-and-structural-engineering-meng/>

<https://www.bradford.ac.uk/courses/ug/civil-and-structural-engineering-beng/>

<https://www.bradford.ac.uk/courses/ug/civil-and-structural-engineering-with-integrated-foundation/>

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|-------------------------------------|---|
| Academic Year: | 2022/23 |
| Degree Awarding Body: | The University of Bradford |
| Target Degree Awards: | Master of Engineering (MEng) Civil and Structural Engineering [Framework for Higher Education Qualifications (FHEQ) Level 7]; Bachelor of Engineering (BEng) Civil and Structural Engineering [FHEQ Level 6] |
| Interim/exit Awards: | MEng Engineering (Civil and Structural) [FHEQ Level 7]; BEng Engineering (Civil and Structural) [FHEQ Level 6]; Diploma of Higher Education (DipHE) Civil and Structural Engineering [FHEQ Level 5]; Certificate of Higher Education (CertHE) Civil and Structural Engineering [FHEQ Level 4] |
| Programme Admission: | September |
| Programme Modes of Study: | 4 years full time towards MEng (UCAS H290); 5 years full time towards MEng with placement/study abroad (UCAS H291); 3 years full time towards BEng (UCAS H220); 4 years full time towards BEng with placement/study abroad (UCAS H221); 4 years full time towards BEng with integrated foundation year (UCAS H204); 5 years full time towards BEng with foundation and placement (UCAS H205) |
| Subject Benchmark Statement: | Engineering (QAA 2015) |
| Programme Accrediting Body: | JBM – The Joint Board of Moderators for Engineering Programmes |

Please note: This is the MEng/BEng without an integrated foundation year specification. Please visit the Integrated Foundation course page address above to access the specification for the H204 and H205 routes.

Please note: This programme specification has been published in advance of the academic year to which it applies. Every effort has been made to ensure that the information is accurate at the time of publication, but changes may occur given the interval between publishing and commencement of teaching. Any change which impacts the terms and conditions of an applicant's offer will be communicated to them. Upon commencement of the programme, students will receive further detail about their course and any minor changes will be discussed and/or communicated at this point.

Minor Modifications Schedule

1. July 2018: Confirmed wording of programme regulation waivers
2. March 2019: MEng curriculum changes
3. March 2020: Further MEng curriculum changes
4. December 2020: Specification reformatted and made accessible
5. June 2021: Annual changes for 2021 Academic Year
6. July 2022: Annual changes for 2022 Academic Year. Addition of Engineering Council requirements for compensation

Introduction

Civil Engineering is fundamental to the economic and social prosperity of the UK. It is a “people serving” profession whose activities not only manage humankind’s environment but also create that environment itself. It requires well-qualified and motivated students who seek to be the future leaders within their profession. The capacities of Civil Engineers are also widely appreciated by many other professions and study at Bradford may well be a stepping-stone to an alternative career in accountancy, teaching, law etc – a real foundation for life. Students at Bradford will develop an appreciation of technical and managerial principles and competence in their application using a wide range of personal and professional skills. Our commitment to this integration is such that we strongly encourage students to undertake a 12-month industrial placement as an integral part of their degree studies.

The MEng/BEng Civil and Structural Engineering programme sets out:

- (i) to give technical depth across the discipline and in relevant specialist applications of technology
- (ii) to provide breadth to encourage innovation, and
- (iii) facilitate exposure to other engineering disciplines.

The MEng Civil and Structural Engineering at the University of Bradford utilises our particular research strengths in structural engineering, geotechnics, environmental water engineering, environmental acoustics and sustainability in the built environment. The Integrated Master’s Degree programme is designed to develop graduates who can provide the future leadership of the profession: deal with the complexities of the industry, demonstrate originality in problem solving and accept a high level of responsibility for their own work and personal development.

The Joint Board of Moderators’ accreditation ensures that the MEng and BEng degrees meet the highest international standards. Upon graduation students will have the educational background and capacity for professional growth necessary to seek Chartered Engineer (CEng) status.

Designed for the next generation of engineers.

Our programmes have been designed as part of the CDIO educational framework for producing the next generation of engineers. This will provide a learning experience that stresses the engineering fundamentals set within the context of Conceiving-Designing-Implementing-Operating (CDIO) real-world systems and products. This framework has been developed by universities across the globe and benefits from the ongoing collaborative experience of engineers and educationalists. This will mean that students learning will reflect the real world, their work in teams to solve real-world problems and in the process they will develop professional skills alongside technical skills.

We also recognise that the future for engineers is one where they will be working in interdisciplinary teams to solve new, complex and evolving problems that will require

innovative solutions. Students' ability to work across engineering disciplines and collaboratively with experts in other specialist fields will be crucial to creating the solutions of tomorrow. We have designed our programmes to encourage and experience interdisciplinary working, to develop breadth as well as depth of skills and knowledge, and in this way, we believe students will be ideally equipped to be successful and employable. All our engineering students begin with an interdisciplinary year which ensures that all students have a good understanding of the breadth of what is encompassed by the word 'engineer'. This year provides students with fundamental skills and knowledge as well as specific projects that they will work on with other students in their discipline and a final project which will be on interdisciplinary project working with a range of engineers from different disciplines.

Learning with and as part of a research community

The Faculty of Engineering and Informatics places emphasis on both teaching and research. Lecturers at Bradford are active researchers in their fields of expertise producing peer-reviewed knowledge through publications in journal articles and books. This research permeates to their teaching practice giving students access to world leading professionals, equipment and ideas within the University's academic themes of Innovative Engineering, Advanced Healthcare and Sustainable Societies.

We have particular research strengths in Structural Engineering; Geotechnics; Sustainability; Water Engineering; Acoustics; and Computer Modelling and Design. We conduct this research jointly with many companies including Bersche-rolt, Transport Research Laboratory, AngloFelt Industries, Incommunities, Yorkshire Water, Castle Cement, and many others. The industrial input of our partners like Arup, is one of the strengths the course has.

Our teaching is well aligned with the research expertise of members of staff. Studies in later stages of the programme will benefit from this expertise and students will undertake individual project work in one of these areas where they will be expected to display a considerable amount of initiative. We aim to produce MEng graduates who are imaginative, innovative, versatile and competitive, who will be able to progress rapidly to professional positions of responsibility with minimal additional training, and who can provide technical, managerial and entrepreneurial leadership in specialist/interdisciplinary projects.

We recognise that society benefits from the talents of all, and that the development of creative, collaborative engineers, skilled in communication and teamwork is vital. Diverse engineering teams are known to be more innovative. We help students to contribute to and learn from the varied perspectives of their tutors and peers. We want to equip our graduates with the knowledge and skills to respond to the many different needs of our businesses and communities.

Students will have many opportunities to contribute to their Higher Education Achievement Report (HEAR) whilst with us. Students can gain HEAR accreditation for becoming student representative for their course, by becoming a student ambassador, helping with open days and applicant experience days, or by being a PAL leader. The peer assisted learning scheme or PAL is where students in stages two and three support new students of the University. The PAL scheme has been very successful, providing guidance on all aspects of

being a student of Bradford. PAL leaders become mentors and role models for new students. We support people to become PAL leaders, but we also recognise their contribution through the HEAR.

Studying at the University of Bradford

The University of Bradford has four key strategic objectives: excellence; internationalisation; equality and diversity; and sustainability. We believe in doing research and teaching to deliver career opportunities for our students as well as for economic development and job creation.

The Faculty of Engineering and Informatics strongly believes that each programme subscribes to these four objectives through the three key streams of the University vision:

- The creation of knowledge through fundamental and applied research.
- The dissemination of knowledge by teaching students from all backgrounds.
- The application of knowledge for the prosperity and wellbeing of people.

We recognise that society benefits from the talents of all, and that the development of creative, collaborative engineers, skilled in communication and teamwork is vital. Diverse engineering teams are known to be more innovative. We help students to contribute to and learn from the varied perspectives of their tutors and peers. We want to equip our graduates with the knowledge and skills to respond to the many different needs of our businesses and communities.

The Faculty welcomes and celebrates the diverse cultural and national backgrounds of our students. We are committed to an educational experience that is inclusive of the diversity of the students and staff, and that addresses attainment gaps within our student body, particularly those between BME and white students. The University holds Bronze Athena Swan accreditation from AdvanceHE.

The Bradford graduate

Upon graduation students will be able to work as a Civil Engineer. They will have the capacity for professional growth to continue the path to Chartered Engineer (CEng) status. However, unlike graduates from many other universities, students will have high-level professional and interpersonal skills built from learning which has been developed through a team-based environment. An education where students have spent their time conceiving, designing, implementing and operating solutions to problems that they have tackled as part of a learning team. Students will be adept at working with complex value-added engineering systems, they will be familiar with experimentation, system thinking and have a solid understanding of the business and enterprise context.

We value sustainability at Bradford and to that end we have embedded sustainable development across all of our programmes. In a future where sustainability is to become increasingly important students will have sound understanding of the challenges and the potential for solutions in a world where the action of human industry is creating new pressures on resources.

All our programmes are designed to provide three progression routes for graduates. Upon graduation students will be equipped to be employed as an engineer. If this is their goal they should seriously consider a placement year as this will be invaluable. Alternatively, students could pursue a research career, they will have highly developed research skills and their personal tutor can help them identify postgraduate research opportunities here at Bradford. The third route open to students on graduation is to develop their own business. As a Bradford engineering graduate, students will have the skills to design and develop products processes or systems that could have serious commercial potential. We have a long track record of supporting and developing new companies and helping students on those first steps as an entrepreneur.

The ability of an engineer to think clearly, and logically and ethically is widely appreciated by many other professions and studies at Bradford may well be a stepping stone to many alternative careers other than Engineering. As an engineering graduate from Bradford students will have a real foundation for life and for a lifetime of learning.

Programme Aims

The programme is intended to:

- A1. Develop graduates with a solid grounding in engineering fundamentals and experience of interdisciplinary working.
- A2. Enable graduates to develop the engineering, design, management, leadership, business and personal skills required to become professional Civil and/or Structural Engineers and in doing so, also equip them for careers in other professions.
- A3. Provide the educational base (in compliance with UK-SPEC) to permit progression to Chartered Membership of the Institution of Civil Engineers and/or the Institution of Structural Engineers and registration with ECUK as a Chartered Engineer.
- A4. Provide a challenging programme in terms of technical breadth and depth as well as supporting managerial and transferable skills in keeping UK-SPEC requirements of an accredited MEng programme.

Programme Learning Outcomes

To be eligible for the FHEQ Level 4 award of Certificate of Higher Education, students will be able to:

1. Understand basic fundamental concepts, principles and theories underpinning engineering with knowledge in: engineering mathematics, fluid mechanics, thermodynamics, heat transfer; materials; electronics, structures, measurement, design, safety, health and environment.
2. Select and correctly apply quantitative methods to analyse the performance of engineering components systems.
3. Select and use appropriate and relevant materials, equipment, tools, processes, or products.

4. Apply simple computational techniques to simulate and visualise the solution to specified engineering problems.
5. Apply skills in problem solving, working with others, information retrieval, and effective use of general IT facilities, and communicate work to technical and non-technical audiences.
6. Exercise personal and professional responsibility, which may be as a team member, and include evidence of safe and effective workshop and lab practice.

Additionally, to be eligible for the FHEQ Level 5 award of Diploma of Higher Education, students will be able to:

7. Understand principles and theories underpinning Civil and Structural Engineering with knowledge in: structural mechanics and analysis, water engineering, soil mechanics, concrete and steel structural design and Building Information Modelling.
8. Select mathematical and statistical methods necessary to underpin the engineering discipline and proficiently apply tools and notations in the modelling, analysis, solution, and evaluation of engineering problems.
9. Apply analytical and computational methods to solve and visualize problems in the engineering discipline and to implement appropriate action.
10. Apply problem-solving skills, technical knowledge and understanding to create/adapt and evaluate design solutions that are fit for purpose (inc. operation, maintenance, reliability etc.).
11. Plan and apply safe methods of construction to semi-open Civil Engineering projects, deriving solutions that consider Health and Safety, technical, regulatory, and client requirements.
12. Apply relevant practical and laboratory skills to obtain accurate data to evaluate performance and/or validate models.
13. Plan and apply safe methods of construction to semi-open Civil Engineering projects, deriving solutions that consider technical, regulatory, and client requirements.

Additionally, to be eligible for the FHEQ Level 6 Degree award of Bachelor of Engineering, students will be able to:

14. Systematically appreciate the key aspects of their field of study, including acquisition of coherent and detailed knowledge informed by aspects of Civil Engineering, materials, geotechnics, structures and design.
15. Select, apply, and evaluate quantitative tools and data collection methods to underpin the engineering discipline, and apply a range of tools and notations proficiently and critically in the analysis and solution of engineering problems.
16. Select, apply and effectively integrate knowledge of other engineering disciplines to support study and evaluation of the engineering discipline.

17. Apply principles of organisation and management (project management, change management, health and safety, self-management) to achieve engineering objectives.
18. Demonstrate knowledge and understanding of the engineering principles underpinning advanced concrete, steel and composite structural design, geotechnics, sustainability in the built environment within the context of construction and detailed and conceptual design.
19. Apply engineering principles to critically analyse problems to create innovative process and product designs, with systematic appreciation of key aspects of field of study, including acquisition of coherent and detailed knowledge informed by characteristics of the civil and structural engineering discipline.
20. Plan and implement an individual programme of work, monitoring and adjusting where appropriate in an on-going basis, utilising research skills to critically evaluate and report on technical literature and newly developed data, and reflect on personal and professional development to improve their performance.
21. Describe and work effectively and collaboratively in different roles within a team, and evidence responsibility of engineers to consider environmental and socio-economic aspects in the development of sustainable solutions.
22. Use appropriate discipline software packages in the modelling, simulation, analysis, design, and critical performance evaluation of composite engineering systems in the discipline.
23. Correctly identify and use codes of practice and industry standards.

Additionally, to be eligible for the FHEQ Level 7 Integrated Degree award Master of Engineering, students will be able to:

24. Demonstrate a comprehensive knowledge and understanding of the engineering principles underpinning civil and structural engineering including geotechnics, structural dynamics and earthquake engineering, construction management, water and wastewater engineering within the context of construction.
25. Apply and critically evaluate comprehensive integrated or systems approaches to engineering problems through know-how of relevant discipline concepts, theories and technologies and their application, with ability to work with technical uncertainty.
26. Apply engineering tools and research methodology to the critical analysis of complex and multi-disciplinary problems in order to create innovative designs and solutions.
27. Apply advanced problem-solving skills, technical knowledge and understanding, to establish rigorous and creative solutions that are fit for purpose for all aspects of the problem including production, operation, maintenance and disposal.

28. Extract and evaluate pertinent data and apply engineering analysis techniques to solve unfamiliar problems and communicate outcomes by a range of advanced techniques.
29. Describe and critically evaluate different roles within an engineering team and exercise initiative and personal responsibility, which may be as a team member or leader.

BEng Curriculum

The MEng and BEng Civil and Structural Engineering curriculum is organised into modular units, studied across the "Academic Year" of September to May or discretely in a single Semester. Students study 120 credits in total which are core to the programme in stages 1-2. At stages 3-4, students select optional modules to study alongside core content.

Stage 1 Modules (FHEQ Level 4/CertHE)

| Study Period | Code | Title | Credit | Level |
|---------------|-----------|---|--------|--------|
| Academic Year | ENB4002-B | Computer Aided Engineering | 20 | FHEQ 4 |
| Academic Year | CSE4003-B | Design, Build and Test (Civil and Structural Engineering) | 20 | FHEQ 4 |
| Academic Year | ELE4013-B | Electronics and Mechanics | 20 | FHEQ 4 |
| Academic Year | ENM4004-B | Mathematical Methods and Applications | 20 | FHEQ 4 |
| Semester 1 | ENG4007-B | Engineering Materials | 20 | FHEQ 4 |
| Semester 2 | ENG4008-B | Thermofluids | 20 | FHEQ 4 |

At the end of stage 1, students will be eligible to exit with the FHEQ Level 4 award of Certificate of Higher Education if they have successfully completed at least 120 credits and achieved the award learning outcomes 1-6.

Stage 2 Modules (FHEQ Level 5/DipHE)

| Study Period | Code | Title | Credit | Level |
|---------------|-----------|---|--------|--------|
| Academic Year | CSE5012-B | Design of Steel and Concrete Structures | 20 | FHEQ 5 |
| Academic Year | ENM5005-B | Further Mathematics and Statistics | 20 | FHEQ 5 |
| Academic Year | CSE5009-B | Soil Mechanics | 20 | FHEQ 5 |
| Academic Year | CSE5013-B | Water Engineering | 20 | FHEQ 5 |
| Semester 1 | CSE5011-B | Structural Mechanics and Analysis | 20 | FHEQ 5 |
| Semester 2 | CSE5014-B | Structural Design Project | 20 | FHEQ 5 |

At the end of stage 2, students will be eligible to exit with the FHEQ Level 5 award of Diploma of Higher Education if they have successfully completed at least 240 credits and achieved the award learning outcomes 1-13.

In Stage 3, students will study 100 core credits and select 1 of 3 optional modules to take in Semester 2.

Stage 3 Modules (FHEQ Level 6/BEng)

| Study Period | Code | Title | Credit | Level | Type |
|---------------|-----------|---|--------|--------|--------|
| Academic Year | CSE6011-B | Advanced Steel and Concrete Design | 20 | FHEQ 6 | Core |
| Academic Year | CSE6009-B | Geotechnical and Civil Engineering Design | 20 | FHEQ 6 | Core |
| Semester 1 | CSE6003-B | Feasibility Study | 20 | FHEQ 6 | Core |
| Semester 1 | CSE6010-B | Sustainability in the Built Environment | 20 | FHEQ 6 | Core |
| Semester 2 | CSE6012-B | Individual Research Project (Civil and Structural Engineering) | 20 | FHEQ 6 | Core |
| Semester 2 | ENB6010-B | Project Management and Six Sigma | 20 | FHEQ 6 | Option |
| Semester 2 | ENG6005-B | Sustainable Energy | 20 | FHEQ 6 | Option |
| Semester 2 | CSE6013-B | Transportation Studies | 20 | FHEQ 6 | Option |

At the end of stage 3, students will be eligible to exit with the FHEQ Level 6 Degree award of Bachelor, BEng Engineering (Civil and Structural) if they have successfully completed 360 credits but have not met the programme-specific accredited award requirements.

Students will be eligible for the FHEQ Level 6 Degree award of Bachelor, BEng Civil and Structural Engineering if they have successfully completed at least 360 credits, achieved award learning outcomes 1-23 and met the programme-specific requirements to receive an accredited award.

Please note: The curriculum may change, subject to the University's programme approval, monitoring and review processes.

MEng Curriculum

Students intending to progress to the MEng stage must have passed Stages 1-3 at 50% or higher overall and met the other variations to assessment regulations that apply to the MEng as detailed in the Assessment Regulations section, or must exit with a BEng.

In Stage 4 students will study 100 core credits and select 1 of 2 optional modules to take in Semester 2.

Stage 4 Modules (FHEQ Level 7/MEng)

| Study Period | Code | Title | Credit | Level | Type |
|---------------|-----------|---|--------|--------|--------|
| Academic Year | CSE7011-D | Advanced Final Year Project | 40 | FHEQ 7 | Core |
| Semester 1 | CSE7009-B | Advanced Geotechnics | 20 | FHEQ 7 | Core |
| Semester 1 | CSE7015-B | Advanced Structural Analysis and Earthquake Engineering | 20 | FHEQ 7 | Core |
| Semester 2 | CSE7008-B | Construction Management | 20 | FHEQ 7 | Core |
| Semester 2 | CSE7013-B | Water and Waste Water Treatment | 20 | FHEQ 7 | Option |
| Semester 2 | ENB7007-B | Risk Assessment and Management | 20 | FHEQ 7 | Option |

At the end of stage 4, students will be eligible to exit with the FHEQ Level 7 Integrated Degree award of Master, MEng Engineering (Civil and Structural) if they have successfully completed 480 credits but have not met the programme-specific accredited award requirements.

Students will be eligible for the FHEQ Level 7 Integrated Degree award of Master, MEng Civil and Structural Engineering if they have successfully completed at least 480 credits, achieved award learning outcomes 1-29 and met the programme-specific requirements to receive an accredited award.

Please note: The curriculum may change, subject to the University's programme approval, monitoring and review processes.

Placement and/or Study Abroad

This programme provides the option for students to undertake a work placement or period of study abroad in the penultimate year of study (between the 3rd and 4th year of an MEng or between the 2nd and 3rd years of a BEng). Students wishing to take this option will be encouraged to register for the placement year programme. All Faculty of Engineering (FEI) students are encouraged to apply for Industrial Placements (Year in industry).

Timetabled Pre-Placement lectures and Timetabled 'drop-in' sessions will be scheduled to support students throughout the pre-placement process. All placement opportunities received are made available to students on the placement route via the VLE.

Students can also access various support services organised by Career and Employability Services including one-to-one appointments, Employability Workshop/Webinar Programme, Careers Fairs and jobs/placement opportunities. Students are encouraged to take the opportunity to find their own placement.

- On successful completion of ENG5002-Z, the placement, students will be eligible for the additional award of University Diploma Industrial Studies.
- On successful completion of ENG5004-Z, the study/placement abroad experience, students will be eligible for the additional award of University Diploma Industrial Studies (International).

For further information about study abroad opportunities, including shorter opportunities available to all students or taking a semester overseas, please refer to the International Opportunities website: <https://www.bradford.ac.uk/study/abroad/>

Learning and Teaching Strategy

The teaching and learning strategy takes into consideration the learning outcomes that need to be achieved, progression through the levels of study, and the nature of the subject. One of the goals of Higher education is that students develop lifelong learning skills and are increasingly able to take greater responsibility for their own learning as they progress through the programme.

Our strategy begins with the end in mind. We want students to become great engineers; that means great problem solvers, great team-workers with an inquisitive and curious mind. This should mean that by the end of their study with us they can move seamlessly into the world of work, academic research or become an entrepreneur.

The teaching and learning methods have been selected to engage students in developing their knowledge and understanding of engineering fundamentals, civil and structural engineering through formal learning opportunities such as lectures and tutorials, experiential learning through practical classes and lab sessions and informal and social learning through team-working in projects and competitions. We aim to connect formal and informal learning activities and environments to promote career development education and support the ethos of achieving 'more than a degree'. This will empower students to be successful in their personal lives and professional pursuits by providing integrated curricular and co-curricular learning experiences that promote their holistic development as active, enterprising citizens who contribute to the economy and their community.

Study with us will include formal lectures (including those from Visiting Professors and external guest speakers), but these will always be interactive and two-way. We want to develop their understanding of the vast array of opportunities open to today's professional engineer and therefore we look to incorporate aspects of real-world engineering problems and solutions where possible. To this end we make use of design projects, case studies, practical demonstrations, and provide lots of opportunities for them to design their own solutions. In each stage, students will work in a team to perform a design exercise that varies in the degree of complexity and challenge but appropriate to their stage. Our students will actively participate in the processes of knowledge acquisition and creation through research-enriched teaching and research-engaged learning. Several opportunities are offered for students to work alongside with researchers on externally funded research project and PhD projects.

As part of our focus on building a learning experience which will prepare students for the world of work our curriculum has been developed using the CDIO framework. This means that our learning strategy will be to encourage students to work in teams to Conceive potential solutions, Design new-products, structures, processes or services, Implement (or model) and test those designs, and Operate the product or solution. In line with the CDIO philosophy students will have numerous opportunities to be an active learner, to work as an engineer on real-world projects.

Students will be involved in project work from the start of their time with us and these projects will become more complex and challenging as their skills and knowledge develop. Students will also use control and measuring techniques in a supportive and collaborative environment with their supervisors.

The University of Bradford is well known for attracting students from a wide variety of backgrounds, experiences and countries. The University of Bradford encourages and supports women in engineering. Female staff and students are an integral part to the University of Bradford's Faculty of Engineering and Informatics. The University of Bradford's modus operandi, Making Knowledge Work, is embedded in the philosophy of this programme.

Assessment Strategy

In the same way that our teaching and learning strategy is designed to prepare students for the world of work, academic research or entrepreneurship, our assessment methods incorporate a wide range of different methods designed to meet the needs of industry, the accrediting bodies as well as to prepare students for a potential academic research career.

Assessment is a key part of the learning process, it is only through challenging themselves to express what they have learned or put it to practical use, can they complete the learning journey and assess for themselves if they have understood what they have been taught and are able to apply and use those skills and knowledge. There are two forms of assessment. Formative assessment which provides an opportunity for our staff will give students feedback during their learning. This feedback is designed to help and guide their learning. All the modules will have some formative assessments, and this may be in various forms including guidance, discussions or questioning from their supervisor, tests, practical activities, et cetera. These formative activities are crucial if students are to make best use of their learning experience and they are designed to prepare students for their summative assessment. Summative assessment is how we grade the work on a module and the details of this assessment will be available from the beginning of the module so that students understand how their grade will be determined.

A main method of assessment (as is common on all professional engineering degree programmes) is by formal written examinations and class test. Nevertheless, many of the assessments will be tailored to the most efficient ways for assessing the learning outcomes. Therefore, project work will often be assessed on the basis of the quality of the product produced as part of the project, we use practical tests to assess practical skills and written reports to show the depth of understanding of concepts and ideas. Practical skills are often assessed via individual and group technical reports with the laboratory work linked with the taught modules. The methods of assessment of transferable skills are built in the structure of the examinations, case studies, laboratory demonstrations and the 'Design Project' work.

Assessment Regulations

The standard University Undergraduate Regulations are available at the link below: www.bradford.ac.uk/regulations, however the following waivers apply to the BEng/MEng programmes:

A maximum of 20 credits can be compensated on the BEng/MEng programmes across the whole programme with a mark no lower than 30%.

BEng programme: students must achieve a minimum of 340 credits @40% or above, 20 credits @30% or above.

MEng programme: students must achieve a minimum of 460 credits @40% or above, 20 credits @30% or above, whilst maintaining a stage average of 50%.

To remain on the MEng programme, a stage progression average of 50% or above must be obtained.

The MEng is a **single classified award**. The overall MEng award average is calculated from the weighted averages of Stage 2, 3 and 4 as follows; Stage 2 10%, Stage 3 40% and Stage 4 50%.

If the MEng requirements are not met, but the requirements for a BEng are complied with, then a BEng will be awarded.

If the compensation requirements are not met but the University's regulations are complied with then a non-accredited degree will be awarded:

BEng Engineering (Civil and Structural)

MEng Engineering (Civil and Structural)

Admission Requirements

We take into consideration a number of factors when assessing your application. It's not just about your grades; we take the time to understand your personal circumstances and make decisions based on your potential to thrive at university and beyond.

The minimum entry requirements for the programme are as follows:

A typical offer to someone seeking entry through the UCAS scheme would be UCAS points 112 with Mathematics studied at A levels (minimum grade C). On completion of a UCAS form students will be invited to the School for an Open Day where they will have the opportunity to meet staff, view the facilities and discuss "the Bradford experience" with current students. Further entry requirements are as below:

- To include 64 points from 2 A levels to inc. Maths minimum grade C.
- GCSE English and Maths minimum grade C or grade 4.
- Minimum IELTS at 6.0 or the equivalent.

On completion of a UCAS form students will be invited to the Faculty for an Open Day where they will have the opportunity to meet staff, view the facilities and discuss "the Bradford experience" with current students. Students will be made aware of the range of engineering programmes available within the Faculty together with the Foundation Year (Stage 0) attracting offers of 88-72 UCAS points. The Integrated Foundation Year must be completed with a Distinction grade to permit transfer to the MEng programme.

Access and Recognition of Prior Learning

Applications are welcome from students with non-traditional qualifications, and/or significant personal/professional experience. For such applicants, evidence of their interests and any work experience would be required and this would likely take the form of a portfolio of work and/or an interview with the programme.

The University of Bradford has always welcomed applications from disabled students. To discuss adjustments or to find out more about support and access, you may wish to contact Disability Services before you apply online: www.bradford.ac.uk/disability/before

Applications are particularly welcomed from adult learners (those aged 21+ at the start of the programme), armed forces families, carers and care leavers, estranged or orphaned learners, refugees and asylum seekers, and Romani or Traveller families. To find out more about the University of Bradford Progression Scheme, visit the webpage:

<https://www.bradford.ac.uk/applicants/progression-scheme/>

If applicants have prior certificated learning or professional experience which may be equivalent to parts of this programme, the University has procedures to evaluate and recognise this learning in order to provide applicants with exemptions from specified modules or parts of the programme. For more details on RPL, visit the webpage:

<https://www.bradford.ac.uk/teaching-quality/prior-learning/>

Please note: This information is relevant to the contemporary recruitment cycle and therefore may be different now to when this document was originally published. The current UCAS tariff for the programmes, as well as detail of accepted equivalent qualifications, is published online at the course pages:

<https://www.bradford.ac.uk/courses/ug/civil-and-structural-engineering-meng/>

<https://www.bradford.ac.uk/courses/ug/civil-and-structural-engineering-beng/>

<https://www.bradford.ac.uk/courses/ug/civil-and-structural-engineering-with-integrated-foundation/>
