

Sustainable Process Engineering MEng/BEng (Hons) programmes specification with integrated foundation year

Academic Entry Year:	2026/2027
Degree Awarding Body:	The University of Bradford
Main Location:	City Campus
Subject Benchmarks:	Engineering (Quality Assurance Agency 2019); Standard for Professional Engineering Competence and Commitment, 4th edition (UK-SPEC: Engineering Council 2020)
Qualifications Frameworks:	HE Qualifications of UK Degree Awarding Bodies (FHEQ: QAA 2014) and Regulated Qualifications Framework (RQF: Ofqual 2015)
Target Degree Award:	Bachelor of Engineering with Honours (BEng Hons) Sustainable Process Engineering [FHEQ Level 6] Master of Engineering (MEng) Sustainable Process Engineering [FHEQ Level 7]
Intermediate/exit awards:	Ordinary Degree of Bachelor (BEng) Engineering (Sustainable Process) [Level 6] Diploma of Higher Education (DipHE) Sustainable Process Engineering [Level 5] Certificate of Higher Education (CertHE) Sustainable Process Engineering [Level 4] Foundation Certificate (FdC) Engineering [RQF Level 3]
Programme Admissions:	UK/home students (all routes) and international students (excluding foundation)
Programme Start Date(s):	September
Programme Modes of Study:	(UCAS code H9D0) 3 years full-time towards BEng (UCAS code H910) 4 years full-time, BEng with placement year or study abroad (UCAS code H992) 4 years full-time, BEng with integrated foundation year (UCAS code H993) 5 years full-time, BEng with foundation & placement/study abroad (UCAS code H9X0) 4 years full-time towards MEng (UCAS code H9C0) 5 years full-time, MEng with placement year or study abroad (Transfer only) 5 years full-time, MEng with integrated foundation year (Transfer only) 6 years full-time, MEng with foundation & placement/study abroad

This programme is designed according to UK-SPEC, the requirements of the Institution of Chemical Engineers ([IChemE](#)) and the UK Engineering Council ([EngC](#)) to provide a great head-start to a professional engineering career in related production, process control and chemical fields.

Please note: The University has a set of terms and conditions for all students accepting an offer to study on a course here at Bradford. This is called the Student Contract. This document sets out the Terms and Conditions which apply when you accept an offer of a place on a programme of study at the University of Bradford. [View our Student Contract for further details](#). Information about this programme and its modules 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.

Minor Modification Schedule

1. April 2026: New programme specification incorporating integrated foundation for MEng following review for consistency across portfolio.
2. September 2026: Admissions update and missing L3 module added

Programme overview

Chemical and Process Engineering is fundamental to the economic and social prosperity of the UK. It is the profession responsible for the creation of all material objects and systems necessary for modern life from concept to customer to decommissioning. The modern society relies on the work of Process Engineers who develop and design the processes that make useful products for society by efficient use and management of resources including oil and gas, water and energy while controlling health and safety procedures and protecting the environment.

There is a pressing need in the world for cleaner and more efficient processes to move towards a sustainable society. The impact of engineering processes on the way we live and work together is set out in the IChemE [Engineering a Sustainable World](#) report which identifies Water and Sanitation; Energy; Food, Health & Wellbeing; and Sustainable Systems, as the four key areas where chemical and process engineering can make a positive impact on the quality of life and help produce a more sustainable future. The course will provide students with essential tools based on the concept of sustainability and low carbon footprint for changing raw materials into useful products in a safe and cost-effective way. Therefore, the aim of these programmes is to enhance students' knowledge and understanding in designing and operating chemical and manufacturing engineering processes in a more sustainable manner.

The Sustainable Process Engineering programmes are designed to produce the future leaders that will drive sustainable social and economic development through cleaner and more efficient chemical and manufacturing processes: focusing on the new directions of chemical engineering and other engineering fields by addressing as core part of the curriculum critical aspects such as decarbonization of industry and energy systems, renewable and cleaner sources of energy, water and wastewater treatment, sustainable engineering, plastic management, waste valorisation and life cycle analysis. A state-of-the-art laboratory at the University of Bradford combines hands on experimentation and virtual reality process simulation training to offer students a high-quality learning experience using the latest technology for engineering education.

Upon graduation students will have the capacity for meaningful interdisciplinary interaction, leadership roles, and professional growth. As qualified Process Engineers graduates from these programmes will be knowledgeable about sustainable process engineering and will become the next generation of leaders with the capacity to incorporate the concept of sustainability into the design, commissioning, and efficient operation of chemical and manufacturing plants. They will be able create a greener and sustainable world, through the application of knowledge acquired in crucial sustainable development areas, such as greenhouse gasses emissions control, climate change abatement, clean water technologies, renewables, sustainable food production, energy sources etc. Knowledge and competencies acquired by students of these programmes will benefit the wider sector and the community.

Our Chemical Engineering programmes are accredited by [IChemE - the Institution of Chemical Engineers](#). While Sustainable Process Engineering is not currently accredited, as a cutting-edge new programme at the University of Bradford, the MEng and BEng degrees have been designed to meet the highest national and international standards in engineering with a short period of further learning to progress towards Incorporated or Chartered Membership of IChemE. Accreditation when granted can be retrospective and graduates will be notified when such accreditation has been awarded to allow them to progress without further study.

Designed for the next generation of engineers

BEng or MEng studies at Bradford will be a launch platform for your future, developing a deep understanding of fundamental and advanced technical principles, analytical tools, and competence in their application together with a wide range of management, personal and professional skills.

The undergraduate Sustainable Process Engineering programme sets out:

1. to give technical depth across the discipline and in relevant specialist applications of technology
2. to provide breadth to encourage innovation, and
3. facilitate exposure to other engineering disciplines.

An excellent way to further develop these skills is to undertake an integral industrial placement as part of the degree studies.

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 and Operating** 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 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 of Management, Sciences and Engineering](#) 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 of Bradford holds Bronze [Athena Swan Charter](#) and [Race Equality Charter](#) accreditations from [AdvanceHE](#), recognising our commitment to advancing the careers of everyone in STEM.

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.

Following the optional integrated Foundation Year (Stage 0) where students are provided with the necessary baseline knowledge, skills and understanding for Engineering education, all our engineering students begin with an interdisciplinary year (Stage 1) which ensures that all students have a good understanding of the breadth of what is encompassed by the word 'engineer'. Students are introduced to the concepts of Sustainability at this stage, which means graduates from these programmes will be knowledgeable about sustainable processes and will become the next generation of leaders with the capacity to incorporate the concept of sustainability into the design, commissioning, and efficient operation of chemical and manufacturing plants. 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 an interdisciplinary project working with a range of engineers from different disciplines.

All our programmes are designed to provide three progression routes for graduates. Graduates are ideally suited to employment in the chemical industries as Project Engineers, Design Engineers, Operations Engineers or R&D Engineers. There is an international drive for sustainability and graduates will be equipped to manage current challenges in the food, pharmaceutical, energy, water, carbon management and waste sectors. Graduates are also ready to continue their professional journey onto Master's and PhD programmes in these areas. The third route open to students on graduation is to develop their own business. As a Bradford engineering graduate they 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.

Learning with and as part of a research community

[The School of Computing and Engineering](#) 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 Engineering and Artificial Intelligence research theme of the [Institute of Digital and Sustainable Futures](#).

We draw our research strengths from the combined expertise in the Interdisciplinary Research Council (IRC) in Polymer Science and Technology, the Centre for Industrial Collaboration (CIC) in Polymer Engineering and the Engineering Materials Research Unit and inform our undergraduate programmes.

Each year after the foundation stage, students will engage in enquiry-based projects allowing learning through research. During Stage 4, MEng students can expect to interact with the research activity of the Institute of Digital and Sustainable Futures centres in engineering. Participating in programmes of study including research that include an emphasis on application, experiential

learning and real-world engagement will make a major contribution to students developing skills and attributes for enhanced employability.

Programme aims

The programme is intended to develop graduates:

- A1. With a solid grounding in engineering fundamentals, experience of interdisciplinary working and sustainable processing awareness.
- A2. Who have the engineering, chemical, design, management and personal skills required to become professional Process Engineers with a strong ethos in sustainability and appreciation for professional ethics and in doing so, also equip them for careers in other professions.
- A3. Who are imaginative, innovative, versatile and competitive within engineering industries, who will be able to progress rapidly to professional positions of responsibility with minimal additional training.
- A4. Who can provide technical, managerial and entrepreneurial leadership in specialist/interdisciplinary projects, and are equipped to meet the requirements (in compliance with [UK-SPEC](#)) to permit progression to Incorporated (BEng) or Chartered (MEng) Membership of the Institute of Chemical Engineers and registration as an Incorporated or Chartered Engineer with the UK Engineering Council.

Programme learning outcomes

Stage 0: On successful completion of the integrated foundation stage at RQF Level 3, students will progress to Stage 1 of the degree programme able to:

- 0.1. Apply knowledge and understanding of mathematics, mechanics, physics, materials and chemistry to an appropriate standard to allow students to engage with an accredited Engineering programme.
- 0.2. Demonstrate knowledge and skills in the use of computers for word processing, report writing, data processing, power-point presentation, Computer Aided Design; numerical methods for simple modelling and analysing engineering problems relevant to their chosen specialism; selection and application of principles and data collection and manipulation methods to support problem solving; undertake and report on an investigation.
- 0.3. Demonstrate knowledge and skills in data management and presentation, IT and communication skills, systematic problem solving, lifelong learning, scientific method, teamwork, and personal management.

Stage 3: Students eligible for the FHEQ Level 4 Certificate award will be able to:

- 3.1. Select and apply fundamental principles to analyse engineering processes, their sustainability and environmental impact.
- 3.2. Apply computational techniques to analyse engineering problems in sustainability.
- 3.3. Apply problem solving skills, teamwork, information retrieval, and effective IT usage.

- 3.4. Communicate effectively the findings of their project work.
- 3.5. Exercise personal and professional responsibility, which may be as a team member, and include evidence of safe and effective workshop and laboratory practice.
- 3.6. Understand, critically consider and apply the fundamental principles of Sustainable Process Engineering.

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

- 3.7. Apply mathematical and computational methods to critically analyse engineering problems.
- 3.8. Apply problem-solving skills and technical knowledge to create/adapt and evaluate design solutions that are fit for purpose such as sustainability, operation, reliability, safety or environmental impact assessment.
- 3.9. Apply relevant practical and/or laboratory skills to obtain accurate data to evaluate system performance and/or validate system models.
- 3.10. Work effectively as a specialist within a team towards a shared objective.
- 3.11. Generate innovative designs for sustainable products, systems, components, or processes and communicate the finding to technical and non-technical audiences.
- 3.12. Select, apply, and evaluate quantitative tools and data collection methods to underpin the engineering discipline.
- 3.13. Use a range of tools and notations proficiently and critically in the analysis and solution of engineering problems.

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

- 3.14. Select, apply and effectively integrate knowledge of other engineering disciplines to support study and evaluation of the engineering discipline.
- 3.15. Apply principles of organisation and management (project management, teamwork, health and safety, self-management, and sustainable practice) to achieve engineering objectives.
- 3.16. Demonstrate systematic knowledge and understanding of the concepts, principles and theories underpinning Sustainable Process Engineering.
- 3.17. Critically analyse problems to competently apply engineering principles to create innovative processes and/or product designs.
- 3.18. Use appropriate discipline software packages in the modelling, simulation, analysis, design, and critical performance evaluation of composite engineering systems in the discipline.
- 3.19. Adhere to legal regulations such as codes of practice, industry standards and environmental regulations.

Stage 4: Additionally, on successful completion of Stage 4, students eligible for the FHEQ Level 7 Integrated Master's Degree award of MEng (Hons) will be able to:

- 4.20. Evaluate advanced concepts, principles and theories underpinning Sustainable Process Engineering.
- 4.21. Apply advanced problem-solving skills in sustainable production, operation, disposal and environmental impact abatement, including complex and unpredictable situations.
- 4.22. Plan and conduct original research in sustainable process engineering.
- 4.23. Communicate research outcomes effectively using a range of methods to different audiences.

Learning and teaching strategy

The student journey has been considered at programme-level and our strategy begins with the end in mind. We want students to become great engineers, i.e. great problem solvers, great team-workers with an inquisitive and curious mind, and great people with values, professional ethics, environmental awareness and social responsibility. This means that by the end of their studies they can move seamlessly into the world of work, academic research, policy makers or become an entrepreneur. To complement their academic training, specific skill development workshops and seminars will be organised throughout their studies to provide further support in self-regulation, persistence, and the development of essential skills such as digital literacy.

The University of Bradford aims to create an inclusive learning culture and transformative university experience that empowers our students to realise their ambitions and make a positive difference to the world. This vision will be realised through the achievement of three objectives: inclusive curriculum, inclusive experiences and inclusive community. We aim to make learning accessible to all our students and to guarantee a learning environment in which students are welcomed, valued and get the opportunities to succeed in fulfilling their dreams. Sustainable Process Engineering (SPE) students will have the opportunity to thrive and train themselves in a cutting-edge and constantly developing field where they will be able to have an impact as subject experts, policy makers, process designers, effective employees, entrepreneurs, and enterprising citizens.

The Sustainable Process Engineering (SPE) programmes teaching and learning strategy take into consideration programme and module learning outcomes that need to be achieved through a progressive learning journey across different levels of study where student acquire different competencies relevant to the nature of the subject. One of the goals of Higher Education is that students develop lifelong learning skills and are increasingly able to learn independently, as well as take greater responsibility for their own learning. The programmes have been designed by incorporating the four learning dimensions of the Bradford Curriculum: Programme Centric, Liberated, Research Engaged and Future Focused. The structure of the curriculum is based on a learning spiral founded on two discipline pillars: Process Engineering and Sustainable Engineering. This enables students to learn progressively revisiting core knowledge acquired at early stages and build upon them to be able to apply them in challenging sustainable process engineering tasks and in their future professional careers. This provides a coherent student progression in which learning tasks become more challenging, inspirational, and stimulating.

At all levels students will be involved in collaborative work, which is fundamental for engineering education as it enable students to learn the value of teamwork in both disciplinary and multidisciplinary tasks, while empowering them to apply their skills in a collaborative team effort. The varied nature of the group tasks ranging from small design challenges, laboratory hands-on experiments, coursework with oral presentation, virtual reality simulated real life industry challenges and completing industry design projects, provide an accessible and flexible learning experience representative of the wide diversity of learners in the university.

At all stages students will face authentic real life social and industrial challenges that will stimulate and develop critical thinking skills in them. 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 educational framework](#). This means that our learning strategy will be to encourage students to work in teams to **Conceive** potential solutions, **Design** new products 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. At Levels 5 and 6 students will engage with practical work on chemical engineering unit operations in a purpose-built laboratory. They will also design equipment and procedures and use control and measuring techniques in a supportive and collaborative environment with their supervisors. The SPE programme exposes the student to the latest in engineering education technology through the SPE laboratory that combines experimental hands-on activities with virtual reality creating a challenging and inspirational learning environment. Students will also have access and be taught the use of the best in engineering software (Aspen Plus, Aspen Hysys, Ansys Fluent, gPROMS, Matlab, Autocad), as well as the responsible and ethical use of artificial intelligence in learning and assessment activities according to the guidelines and regulations of the University of Bradford.

Assessment strategy

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 students complete the learning journey and assess for themselves if they have understood what they have been taught and are able to apply and use that skill and knowledge. In the same way that our teaching and learning strategy is designed to prepare students for the world of work, academic research or entrepreneurship, the same concept has been applied in the forms of assessment and the level of learning independence that will progressively increase as expected from a student at the different stages of the SPE learning journey.

At early stages, students will be guided closely by their personal academic tutors and will have access to additional academic support and learning resources through peer assisted learning and specialised workshops and tutorials. Assessment at this stage will focus in evaluating the acquisition and understanding of fundamental knowledge of Process and Sustainable engineering through a combination of formal and formative assessment methods. The latest being fundamental to ensure that students adapt and transition smoothly and with minimum stress to university life.

Assessment will comprise of a range of exams in the form of class tests, written exams, quizzes, practical group and individual tests, individual and group coursework, and oral presentation. The diverse nature of assessment methods promotes an inclusive learning culture that gives flexibility and accessibility, as well as empower students to explore and find the learning style that better suits them.

At L5 assessment methods will focus on the way students apply process engineering and sustainable engineering and analyse results in simple design assignments, experimental activities, and simulation or virtual reality tasks. Group coursework and laboratory reports will assess the hands-on acquisition of knowledge through research-engaged, experiential, and collaborative learning. The various examination methods will focus on assessing the application of advanced knowledge into simple designs of sustainable engineering processes and unit operations. At this stage, students will have the support of their academic tutors and staff but will be expected to show a good degree of independent learning.

Assessment at L6 and L7 will focus on the capacity of the student to apply, evaluate and create advanced cutting-edge SPE knowledge prioritizing future focused learning. Group and individual coursework, oral presentation, and project report will assess the academic competency of the student, capacity to create and apply in a design project knowledge specific to SPE, teamwork, and experimental skills, which are required in a SPE graduate.

At L7 an oral presentation and a written dissertation will be used to assess the research project component that students develop throughout a year. This is a student led project of their choice on a cutting-edge SPE research area, where they develop research skills and knowledge through research-engaged, liberated and future focused learning.

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 project work. Broadly speaking, there are two categories of assessment, formative and summative.

Formative assessment which provides an opportunity for our staff to give students feedback during their learning. This feedback is designed to help and guide their learning. All the modules will have some formative assessment, and this may be in various forms including discussions or questioning from the 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 summative assessment (as is common on all professional engineering degree programmes) is by written examinations which may be closed or open book. 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.

Curriculum

The Sustainable Process Engineering with Integrated Foundation Year 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 each stage/year, which are either core (studied by all students) or option (there is a choice to make in which credits you take).

Please note that the curriculum in future years may change subject to the University's programme approval, monitoring and review processes.

Stage 0

The Integrated Foundation Year introduces new students to the principles of engineering holistically, introducing foundational concepts, frameworks and techniques common to other Engineering professions before contextualising them for Chemical and Sustainable Process Engineering. The year features practical elements where students spend time in laboratories to conduct experiments on engineering applications. Students will be able to develop awareness of the breadth of opportunities and challenges posed by engineering and the exciting possibilities for their career development. The teaching of Mathematics aims to provide an academic outcome comparable to A-level.

In Stage 0, students will study 100 core credits and select 1 optional module from 2 choices to study in Semester 2.

Stage 0 Sustainable Process Engineering Modules (RQF Level 3)

Code	Module Title	Credit	Period	Selection
ENG3500-B	Professional and Independent Learning for Engineering and Computing	20	Semester 1	Core
ENM3003-B	Foundation Mathematics	20	Semester 1	Core
COS3011-B	Computer Skills and Applications	20	Semester 1	Core
MAE3003-B	Fundamentals of Materials	20	Semester 2	Core
COS3003-B	Introduction to Computing	20	Semester 2	Core
COS3009-B	Introduction to Coding	20	Semester 2	Option 1
GAV3001-B	Introduction to Computer Visualisation	20	Semester 2	Option 2

At the end of Stage 0, students who successfully complete the year will progress onto their chosen BEng or MEng route's Stage 1. Students who leave the University before completing Stage 1 may have a Foundation Certificate in Engineering award recognised if they have successfully completed 120 credits at RQF Level 3 and achieved the stage learning outcomes 1-3.

Stage 1

Level 4 modules are a springboard for accelerating the learning journey and in particular the aspects of process plant design and sustainability. All newly joining students will have access to an

online learning platform (CANVAS) and will receive guidance and additional support from lecturers, Personal Academic Tutors (PATs), Peer Assisted learning (PALs) and laboratory technical staff to make their transition and adaptation to university life smooth and accessible, as well as stimulating and exciting. All students will be exposed to a variety of challenges through different learning activities including formal lectures, experiential laboratory experiences and collaborative group projects that will enable them to achieve the intended learning outcomes.

Students intending to progress to the MEng (Stage 4) must pass Stage 1 with an average of 50% or higher overall.

In stage 1, students study 120 core credits:

Stage 1 Sustainable Process Engineering Modules (FHEQ Level 4)

Code	Module Title	Credit	Period
ENB4002-B	Computer Aided Engineering	20	Academic Year
CPE4001-B	Design, Build and Test (Chemical Engineering)	20	Academic Year
CPE4002-B	Fundamentals of Sustainability	20	Academic Year
ENM4004-B	Mathematical Methods and Applications	20	Academic Year
ENG4007-B	Engineering Materials	20	Semester 1
ENG4008-B	Thermofluids	20	Semester 2

At the end of Stage 1, students who successfully complete the year will progress onto their chosen BEng or MEng route's Stage 2. Students who leave the University before completing Stage 2 may have a Certificate of Higher Education award recognised if they have successfully completed 120 credits at FHEQ Level 4.

Stage 2

Teaching and learning in level 5 modules will focus on the core principles of sustainable process engineering. Students will develop their knowledge and systematically apply it to the design of unit operations which make up these processes through interactive lectures, case studies, tutorials, virtual reality enhanced group activities and practical sessions.

Experiential learning through stimulating hands-on practical experiments in small groups using scaled down versions of real unit operations will form a key part of many L5 modules. This aligns with the University's future-focused and research-engaged learning principles and working together in groups promotes a collaborative learning approach. Students will apply their understanding of fundamental principles gained in Stage 1 to the specific building blocks of sustainable processes, progressing their knowledge in a coherent manner.

The assessment strategy is designed to challenge student understanding, knowledge, practical application, and collaborative skills, reflected in a range of formative and summative methods including group projects with a peer review component, presentations, laboratory reports and written exams.

Students intending to progress to the MEng (Stage 4) must pass Stage 2 with an average of 50% or higher overall.

In stage 2, students study 120 core credits:

Stage 2 Sustainable Process Engineering Modules (FHEQ Level 5)

Code	Module Title	Credit	Period
CHE5001-B	Chemistry for Engineers	20	Academic Year
CPE5011-B	Thermodynamics and Carbon Management Technologies	20	Academic Year
ENM5007-B	Engineering Mathematics and Machine Learning	20	Academic Year
CPE5004-B	Mass Transfer Operations	20	Academic Year
CPE5005-B	Reaction Engineering	20	Academic Year
CPE5008-B	Transport Processes	20	Academic Year

At the end of Stage 2, students who successfully complete the year will progress onto their chosen BEng or MEng route's Stage 3, or to the elective placement/study abroad year. Students who leave the University before completing Stage 3 may have a Diploma of Higher Education award recognised if they have successfully completed 120 credits at FHEQ Level 4 and 120 credits at FHEQ Level 5.

Stage 3

At Level 6, students will critically evaluate and coherently implement the core foundational principles, knowledge and understanding of sustainable processes into the design of process plants. In the Sustainable Process Engineering Design Project, students demonstrate critical, practical, collaborative and communication skills in various authentic industry related design tasks as they work in groups as well as carrying out independent research-led activities towards the development of sustainable chemical and manufacturing processes.

Students apply the concepts of process automation and safety as they respond to the diverse challenges faced by chemical and manufacturing processes to the environment and the governing laws that regulate engineering practices. Students will also have the opportunity to interact with their tutors who will ensure that professional standard practices are observed, thereby enhancing their awareness of the changing nature of the discipline and equipping their professional awareness to manage their future career choices and direction.

Both formative and summative assessments, as well as feedback are provided to challenge their research and problem-solving skills demonstrated in their current and future tasks as they prepare for future study and industry. One of the most important and challenging milestones in L6 is the presentation of the group design project to a qualified audience composed of peers, academic staff and industry representatives enabling students to showcase their results in a co-owned learning experience.

Students intending to progress to the MEng (Stage 4) must pass Stage 3 with an average of 50% or higher overall.

In stage 3, students study 100 core credits and select 1 optional module in Semester 2.

Stage 3 Sustainable Process Engineering Modules (FHEQ Level 6)

Code	Module Title	Credit	Period	Selection
CPE6010-D	Sustainable Process Engineering Design Project	40	Academic Year	Core
CPE6011-B	Process Design and Control	20	Academic Year	Core
CPE6012-B	Environmental and Sustainable Engineering	20	Semester 1	Core
ENB6009-B	Reliability and Safety Engineering	20	Semester 2	Core
ENB6010-B	Project Management and Six Sigma	20	Semester 2	Option 1
ENG6005-B	Sustainable Energy	20	Semester 2	Option 2

At the end of stage 3:

- Students will be eligible to exit with the FHEQ Level 6 Ordinary Degree award of Bachelor, BEng Engineering (Sustainable Process), if they have successfully completed 60 credits at FHEQ Level 6, 120 credits at FHEQ Level 5 and 120 credits at FHEQ Level 6.
- Students will be eligible for the FHEQ Level 6 Honours Degree award of Bachelor, BEng (Hons) Sustainable Process Engineering, if they have successfully completed at least 360 FHEQ credits and achieved the stage 3 learning outcomes 1-23.
- MEng students who have maintained the progression average of 50% at Stages 1-3 will progress onto the MEng Stage 4. MEng route students who leave the University before completing Stage 4 or who have not maintained the progression average of 50% may have an Honours Degree of Bachelor awarded as above.

Stage 4

Breadth and depth in advanced sustainable process engineering will be provided at Level 7 through core and optional modules, as well as a challenging student-led research project. Inclusive learning will be promoted to enable different learners to acquire knowledge and understanding through a variety of lectures, virtual reality, and laboratory experiences, tutorials, and independent research.

Optionality in areas such as water treatment, food and pharmaceutical engineering and big data analysis will enable students to specialise in areas of their choice and prepare them for their future roles in industry. The 40 credit Advanced MEng Research Project provides students with flexibility to further specialise and develop a project in a particular area of sustainable process engineering of their interest. This represents a major challenge where students will demonstrate ability to critically analyse and provide suitable solutions to authentic problems through creative thinking and the generation of cutting-edge original knowledge.

Assessments will comprise of exams, individual & group coursework (supported by peer evaluation) and oral presentations which will enable students to demonstrate their knowledge and competence in the discipline.

In stage 4, students study 80 core credits. They select 1 optional module in Semester 1 and a further 1 optional module in Semester 2.

Stage 4 Sustainable Process Engineering Modules (FHEQ Level 7)

Code	Module Title	Credit	Period	Selection
CPE7010-D	Advanced MEng Research Project	40	Academic Year	Core
CPE7011-B	Transport Phenomena	20	Semester 1	Core
CPE7002-B	Desalination and Wastewater Treatment	20	Semester 1	Option 1
ENG7014-B	Advanced Sustainable Energy	20	Semester 1	Option 2
ENB7011-B	Sustainability and Innovation for Engineers	20	Semester 2	Core
CPE7004-B	Food and Pharmaceutical Processes Engineering	20	Semester 2	Option 3
ENB7007-B	Risk Assessment and Management	20	Semester 2	Option 4
COS7050-B	Industrial Big Data Analysis and Mining	20	Semester 2	Option 5

At the end of Stage 4, students will be eligible for the FHEQ Level 7 Integrated Master's Degree award of MEng (Hons) Chemical Engineering if they have successfully completed 120 credits at FHEQ Level 7, 120 credits at FHEQ Level 6, 120 Credits and FHEQ Level 5 and 120 credits at FHEQ Level 4 and achieved the stage learning outcomes 1-28.

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 School of Computing and Engineering 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.

Any placement or period of study abroad is subject to approval by the Programme Team. Students who wish to participate in a placement or period of study abroad will be required to find, apply for and make the most of their chosen opportunity, and will be supported in doing so by the Programme Team, the Faculty Academic Lead for Placements, as well as the central University Careers and Employability Service.

Students on placement or study abroad will be registered for the optional FHEQ Level 5 modules **ENG5002-Z (Placement)** or **ENG5004-Z (Study Abroad)** and encouraged to complete a diary and portfolio presentation of their activity, as completing this module on return to the University will enable evidence to be added to the academic transcript or HEAR.

Students funded by the Lifelong Learning Entitlement (LLE) or international students on a UKVI Student Visa should be aware that 6-year programmes are not routinely funded and that it may not be possible to combine the foundation year as well as placement or study abroad. There may also be restrictions that apply to you around resits or restudy on a 5-year programme visa. You must get advice from the Student Life Service if either of these restrictions applies to you before applying for a placement/study abroad.

Further information about [internships and placements](#) and [study abroad opportunities](#) is published on the University's website.

Assessment, continuation and award regulations

This programme follows the Assessment, Continuation and Award regulations for undergraduate taught courses published on the University's Website ([Regulation 2](#)), with variance from the regulations as outlined below and documented in the Variance Register:

- Variance from 6.1 and 6.2: Students must achieve a stage progression average of 50% or above to continue on the MEng.
- Variance from 7.1.2 (Programme-specific calculation): The MEng award is calculated based on a 0:10:40:50 split. An average of the best 100 credits at Stage 2 contributes 10%, an average of the best 100 credits at Stage 3 contributes 40% and an average of the best 100 credits at Stage 4 contributes 50% of the overall award.

Admission requirements

We are proud to be [one of the most inclusive universities in the UK](#). All our students have potential, and we believe that as many people as possible should have the chance to benefit from higher education, no matter what their background or circumstances. We take the time to understand the background of our applicants, understand their journey to education, and make decisions based on an applicant's potential to thrive at university and beyond.

In addition to satisfying the general admissions requirements of the University of Bradford, the minimum entry requirements for Sustainable Process Engineering are as follows. All routes require GCSE Mathematics Grade 4/C (equivalent) and:

- **Stage 0 (Foundation Year) entry:** 64 Ucas tariff points to include 1 GCE Advanced Level or an equivalent qualification plus GCSE English at grade D/grade 3 or equivalent English qualification. Stage 0 entry is only open to UK and home students.
- International students seeking entry before Stage 1 cannot join Sustainable Process Engineering. Instead, the accredited Chemical Engineering course at Bradford is available through our partnership [University of Bradford International College](#) (UBIC) to the International Foundation Year, International Year Zero or International Year One incorporated degree pathways if students do not meet the Stage 1 entry requirements.
- **Stage 1 (BEng/MEng) entry:** 104 Ucas points to include A Level Maths minimum grade C and another science subject. For all students whose first language is not English, the standard undergraduate [English language requirements for the University](#) apply as

listed on our website. International students are welcome to apply for Stage 1 entry and should [check the entry requirements page for their country on our website](#) details of equivalent qualifications.

- Check the University of Bradford course pages for example entry profiles in qualifications such as A-Levels, T-Levels, BTEC, Access to HE and International Baccalaureate. Links to course pages are provided at the end of this document.
- The Sustainable Process Engineering MEng/BEng programmes do not currently accept advanced entry into Stage 2 or Stage 3.

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.

Applications are welcome from students with non-traditional qualifications, and/or significant personal/professional experience. If you are an adult applicant returning to study (aged 21 and over when you apply), you will be eligible for admission to the Foundation Year route with level 2 qualifications (GCSE or equivalents). You will also need to provide a written statement and will be interviewed as part of the process.

If applicants have prior certificated learning or professional experience which may be equivalent to parts of this programme, the University of Bradford has procedures to evaluate and recognise this learning to provide applicants with exemptions from specified modules or parts of the programme. Find more information about [recognition of prior learning decisions](#) on the University website.

If you are thinking of coming or have recently applied to the University of Bradford, don't wait until you have arrived to contact our Disability Service. We can arrange for you to talk to a member of our team about what support is on offer here at the University including an invitation to our Get Set Day. To contact the Disability Service please complete the [request support form](#).

Information in this document is for the contemporary recruitment cycle and was accurate at time of publication. The current tariff and accepted qualifications for entry onto the programme is published at the online University of Bradford course pages:

<https://www.bradford.ac.uk/courses/ug/sustainable-process-engineering-with-integrated-foundation/>

<https://www.bradford.ac.uk/courses/ug/sustainable-process-engineering-beng/>

<https://www.bradford.ac.uk/courses/ug/sustainable-process-engineering-meng/>

Information about entry to UBIG provision for this programme including available pathways is published online by Oxford International Education Group:

https://www.oxfordinternational.com/courses/?_course_partner=8696