Programme Specification (Undergraduate) FOR ENTRY YEAR: 2025/26

Date created: 13/01/2024 **Last amended:** 20/06/2025 **Version no.** 2 **Date approved by EQED:**
Click or tap here to enter text.

1. Programme title(s) and code(s):

MEng Biomedical Engineering

MEng Biomedical Engineering with a Year in Industry

MEng Biomedical Engineering with a Year Abroad

BEng Biomedical Engineering

BEng Biomedical Engineering with a Year in Industry

BEng Biomedical Engineering with a Year Abroad

MSci Biomedical Engineering*

MSci Biomedical Engineering with a Year in Industry*

MSci Biomedical Engineering with a Year Abroad*

BSc Biomedical Engineering*

BSc Biomedical Engineering with a Year in Industry*

BSc Biomedical Engineering with a Year Abroad*

Dip HE Biomedical Engineering*

Cert HE Biomedical Engineering*

Notes

* An award marked with an asterisk is only available as an exit award and is not available for students to register onto and is not accredited by the Engineering Council.

a) HECOS Code

HECOS Code	%
100127	100

b) UCAS Code (where required)

Variant	UCAS code
MEng (4yrs)	H502
MEng with industry (5yrs)	H501
MEng with Year Abroad (5yrs)	H504
BEng (3yrs)	H500
BEng with industry (4yrs)	H501
BEng with Year Abroad (4yrs)	H504

2. Awarding body or institution:

University of Leicester

3. a) Mode of study

Full-time

b) Type of study

Campus-based

4. Registration periods:

MEng. Biomedical Engineering

Full Time

The normal period of registration is 4 years

The maximum period of registration 6 years

BEng Biomedical Engineering

Full Time

The normal period of registration is 3 years

The maximum period of registration 5 years

The 'with a Year in Industry' and 'with a Year Abroad' options of each degree would add one year to the normal and maximum periods of registration listed above.

For Foundation Year Variant:
The normal period of registration is four years (one year for the Foundation Year, with three years for the BEng)
The maximum period of registration is six years (one year for the Foundation Year, and five years for the BEng)

5. Typical entry requirements

The ability to benefit from the University of Leicester programmes is assessed on a combination of academic and personal qualities, which can be demonstrated in a number of ways.

The following standard entry requirements are shown for guidance.

MEng. Typical offer:

- **A/AS-levels:** ABB including Maths. Two AS-levels considered in place of one A-level. General Studies accepted.
- **EPQ with A-levels:** BBB + EPQ at grade B. A-level subjects to include Maths
- **GCSEs:** Grade C/4 in English Language.
- **BTEC Nationals:** DDM in Engineering including Further Maths at Distinction.
- **International Baccalaureate:** Pass Diploma with 30 points, with grade 5 in Maths HL. Must include minimum of grade 4 in English A or 5 in English B if minimum of grade 4/C not held in English Language at GCSE.
- **Access to HE Diploma:** Pass in Engineering Diploma with 45 credits at level 3, 30 of which are at Distinction. To include all level 3 Maths modules at Distinction.
- **T Levels:** Distinction in either: Design and Development for Engineering and Manufacturing or Engineering, Manufacturing, Processing and Control (plus Maths test).

BEng Typical offer:

- **A/AS-levels:** ABB including Maths. Two AS-levels considered in place of one A-level. General Studies accepted.
- **EPQ with A-levels:** BBB + EPQ at grade B. A-level subjects to include Maths
- **GCSEs:** Grade C/4 in English Language.
- **BTEC Nationals:** DDM in Engineering including Further Maths at Distinction.
- **International Baccalaureate:** Pass Diploma with 30 points, with grade 5 in Maths HL. Must include minimum of grade 4 in English A or 5 in English B if minimum of grade 4/C not held in English Language at GCSE.
- **Access to HE Diploma:** Pass in Engineering Diploma with 45 credits at level 3, 30 of which are at Distinction. To include all level 3 Maths modules at Distinction.
- **T Levels:** Distinction in either: Design and Development for Engineering and Manufacturing or Engineering, Manufacturing, Processing and Control (plus Maths test).

Successful completion of a GCE or VCE Advanced level course of study (or some other equivalent qualification) is just one way. However, there are many other ways to demonstrate the ability to benefit from a University of Leicester programme. For example, students could be evaluated based on their prior work experience, their extracurricular activities, or their community involvement. These are all indicators of a student's potential to succeed in a university setting.

Furthermore, the University of Leicester recognizes that not all applicants have had the opportunity to pursue formal education, and that many students may have gained valuable skills and knowledge through alternative means. Therefore, mature students without formal qualifications will always be considered and are encouraged to contact the admissions tutor to discuss their application.

Applicants should use the personal statement on their application to illustrate their abilities, aptitudes, skills, qualifications, and experiences which might be taken into account, as well as or instead of any of the formal qualifications listed above. This is an opportunity for applicants to showcase their unique backgrounds and experiences, and to demonstrate how they have developed the skills and knowledge necessary to succeed at the University of Leicester. It is University policy to recognize a wide variety of evidence, and potential applicants may wish to discuss this aspect of their application with the admission tutor to ensure that they are presenting the most comprehensive and compelling case possible.

- *For Foundation Year Variant:*
- **A-levels:** BCC or points equivalent from your best three A-levels. You must have taken Maths or Physics at A-level.
- **GCSE:** Grade C/4 in English.
- **BTEC Diploma:** DDM in a science related subject, which must include appropriate maths and science content. You may be required to take an additional maths assessment test.
- **International Baccalaureate:** Pass diploma with 26 points minimum, and must include appropriate maths and science content.
- **Access to HE:** Pass diploma with 24 Distinctions in a science related subject, which must include appropriate maths and science content. You may be required to take an additional maths assessment test.
- **T-Levels**: Merit overall in Design and Development for Engineering and Manufacturing or Engineering, Manufacturing, Processing and Control or Maintenance Installation and Repair. Maths test required.

For the aims, learning outcomes and application criteria for the GCSA Year Abroad please see https://le.ac.uk/study/undergraduates/courses/abroad

6. Accreditation of Prior Learning

APL will not be accepted for exemptions from individual modules, however may be considered for direct entry to year 2, on a case by case and subject to the general provisions of the University APL policy.

7. Programme aims

All the variants of the programme aim to satisfy the criteria of the accrediting engineering institutions. These are based on the Engineering Council's Accreditation of Higher Education Programmes (AHEP4) (published August 2020) and are defined in 5 overarching areas of learning:

- Science and mathematics (CM1, M1)
- Engineering analysis (C2-C4, M2-M4)
- Design and innovation (C5, C6, M5,M6)
- The Engineer and society (C7-C11, M7-M11)
- Engineering practice (C12-C18, M12-M18)

Each of these areas of learning are represented by specific learning outcomes as shown in the brackets (for more details refer to Engineering Accreditation Board (EAB) Bachelors and Integrated Masters Degree Learning Outcomes (AHEP 4th Edition) Published August 2020).

C codes – refer to BEng degrees meeting the academic requirement for IEng registration and partially meeting the academic requirement for CEng registration.
M codes – refer to MEng degrees, fully integrated Masters degrees fully meeting the academic requirement for CEng registration.

Mapping of these specific learning outcomes to the programme specification are provided in Section 9.

According to the requirements of AHEP4 accreditation:

Graduates from a Bachelors (Honours) degree must achieve the prescribed learning outcomes and will possess a coherent body of knowledge including mathematics, natural science and engineering principles, and a proven ability to apply that knowledge to analyse and solve complex problems. Some of the knowledge will be at the forefront of the particular subject of study. Graduates will be able to select and apply quantitative and computational analysis techniques, recognising the limitations of the methods employed. With an appreciation of professional engineering practice and ethics, graduates will be commercially aware and able to apply their knowledge and skills to design and deliver new products or services to meet defined needs using new or existing technologies.

The Integrated Masters will go beyond the outcomes of accredited Bachelors (Honours) degrees to provide a greater range and depth of specialist knowledge, within an authentic environment, as well as a broader and more general academic base. These programmes should provide a foundation for leadership and innovative engineering practice. Graduates from an Integrated Masters degree must achieve the prescribed learning outcomes and will possess a broad and coherent body of knowledge including mathematics, natural science and engineering principles, and a proven ability to apply that knowledge to analyse and solve complex problems. Much of the knowledge will be at the forefront of the particular subject of study. Graduates will be able to select and apply quantitative and computational analysis techniques in the absence of complete data, discussing the limitations of the methods employed. With an appreciation of professional engineering practice and ethics, graduates will be commercially aware and able to apply their knowledge and skills to design, deliver and evaluate innovative new products or services to meet defined needs using new or existing technologies

The Biomedical Engineering Degree addresses these requirements and more specifically the programme aims to:

1. Apply core engineering and physical principles to address challenges in healthcare, such as, prosthetics, medical devices, biomaterials, tissue engineering and regenerative medicine.
2. Demonstrate a comprehensive understanding of diagnostic methods from computational biology through to biomedical imaging, AI and bio-signal processing.
3. Demonstrate a systematic understanding of physiological and biomedical signal acquisition, analysis, and interpretation.
4. Apply quality management principles to ensure accuracy, precision, and regulatory compliance in clinical practice.
5. Critically evaluate existing biomedical engineering concepts and practices, considering social and ethical implications.
6. Propose innovative solutions to contemporary biomedical engineering challenges, accounting for accessibility, patient needs, risk and responsible technology development.
7. Conduct independent research projects encompassing problem definition, methodology design, data collection, analysis, and interpretation. Present research findings with clarity, addressing limitations and future directions.
8. Demonstrate professional attributes, engineering and management skills and achieve full potential as an individual or a member of a team, regardless of background.

Overall the programme has a strong diagnostics, rehabilitation and medical devices focus. We expect students in level 6 (BEng Graduates) to be able to consider a rehabilitation / medical device technology and assess all the required aspects of materials properties, biocompatibility, system modelling/control, embedded computing, ergonomics, sensors/instrumentation, data science and actuators and be aware of next steps to market. Students completing level 7(MEng Graduates) should go on to obtain a deeper understanding of biological processes and their relationship to technology, for instance tissue engineering and regenerative medicine and will develop innovation business cases in detail.

In addition, for the 'with a Year abroad' variants

- The 'Year Abroad' variant of this programme is offered in accordance with the University's standard specification for the experiential year abroad variant.

In addition, for the 'with Industry' variants

- The 'Year in industry' variant of this programme is offered in accordance with the University's standard specification for year in industry programme variants.
- To provide experience of applications of professional and discipline-specific skills in Industry and to reinforce knowledge through its use in different environments.

8. Reference points used to inform the programme specification

- QAA Benchmarking Statement – Engineering https://www.qaa.ac.uk/the-quality-code/subject-benchmark-statements/subject-benchmark-statement-engineering
- Engineering Accreditation Board (EAB) Bachelors and Integrated Masters Degree Learning Outcomes (AHEP 4th Edition) Published August 2020
- Framework for Higher Education Qualifications (FHEQ)
- UK Quality Code for Higher Education
- Education Strategy
- University Assessment Strategy
- University of Leicester Periodic Developmental Review Report

- External Examiners' reports (annual)
- United Nations Education for Sustainable Development Goals
- Student Destinations Data

UNIVERSITY OF LEICESTER

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9. Programme Outcomes

Unless otherwise stated, programme outcomes apply to all awards specified in 1. Programme title(s).

a) Knowledge and Critical Understanding

i) Competence in an appropriate body of knowledge

Intended learning Outcome	Teaching methods	Learning Activities	Assessment Type
Students should be able to: Demonstrate knowledge of the core engineering principles and fundamentals of clinical sciences and human biology appropriate to biomedical engineering (C1). For the MEng this should include a critical awareness of new developments and the wider context of biomedical engineering and clinical medicine.(M1)	Lectures, workshops, laboratory practicals, directed reading and independent research,	Each module has three hours of weekly lecturing or workshop contact. Lecture material is supported during laboratory and practical sessions and additional resources provided for guided independent study. Cross-disciplinary group work and projects	Examinations (both open-book and closed-book), laboratory reports, presentations, problem-based exercises, design tasks, simulation exercises, project reports (e.g. group projects, independent projects).

ii) Breadth of knowledge

Intended learning Outcome	Teaching methods	Learning Activities	Assessment Type
Students should be able to: Demonstrate a systematic understanding of physiological and biomedical signal acquisition, analysis, and interpretation (C1). For MEng engineering judgment should be applied in order to work with uncertain or incomplete information, discussing the limitations of the analysis employed (M1)	Lectures, tutorials, seminars,	Lecture material is supported during laboratories and computer classes	Examinations (both open-book and closed-book), laboratory reports, presentations, problem-based exercises, simulation exercises
Students should be able to: Demonstrate a comprehensive understanding of diagnostic methods from computational biology through to biomedical imaging, AI and bio-signal processing (C1)	Lectures, tutorials, seminars, laboratory practicals, directed reading, independent research, resource-based learning	Lecture material is supported during laboratories and computer classes	Examinations (both open-book and closed-book), laboratory reports, presentations, problem-based exercises, simulation exercises,
Students should be able to: Demonstrate understanding of regulatory compliance in clinical practice and the pathway to clinic for medical devices and diagnostic tools	Lectures, workshops, independent research, projects, design activities, group work	Lecture material is supported with design activities, group work and presentation activities	Examinations (both open-book and closed-book), project reports, presentations, problem-based exercises,

(C1, C8, C10, C14, M1, M8, M10, M14)			
Students should be able to: Demonstrate understanding of requirements for medical devices and rehabilitation technologies (C1 C5 M1 M5))	Lectures, workshops, independent research, projects, design activities, group work	Lecture material is supported with design activities, group work and presentation activities and projects	Examinations (both open-book and closed-book), project reports, presentations, problem-based exercises, group projects, independent projects.
Students should be able to: Evaluate the environmental and societal impact of solutions to key clinical problems and minimise adverse impacts.(C7) For the MEng this should include the full life-cycle of a product.(M7)	Lectures, workshops, independent research, projects, design activities, group work	Lecture material is supported with design activities, group work and presentation activities and projects	project reports, presentations, group projects, independent projects.

iii) Understanding of source materials

Intended learning Outcome	Teaching methods	Learning Activities	Assessment Type
Students should be able to: Gather and critically evaluate information from a range of clinical, technical and scientific sources (C4 M4	Lectures, tutorials, seminars, independent research, projects, design activities, group work	Research inspired modules mean technical data and clinical and engineering literature referenced throughout the degree. Literature review activities are set in a number of core modules and presented in report or oral / poster presentation.	Problem-based exercises, reports, presentations. design tasks, group projects, independent projects.

Students should be able to: Demonstrate awareness of statistical methods to handle uncertainty with a particular focus on clinical and diagnostic data (C2 M2).	Lectures, workshops, problem solving classes computer practical classes	Lecture material is supported during laboratories, workshops and computer classes	laboratory reports, problem-based exercises, design tasks, simulation exercises, group projects, independent projects.
Students should be able to: Evaluate commercial and technical risks (C8) including [MEng only] in unfamiliar circumstances (M8)	Problem solving exercises, independent research projects, group projects.	Lecture material is supported with design activities, group work and presentation activities and projects	design tasks, reports, group and independent projects, presentations

b) Cognitive and Practical Skills

i) Selection and analysis of sources

Intended learning Outcome	Teaching methods	Learning Activities	Assessment Type
Students should be able to: Select, evaluate and comment on reading, research and primary sources (C4 M4)	Lectures, tutorials, seminars, independent research, projects, design activities, group work	Research inspired modules mean technical data and clinical and engineering literature is referred to throughout the degree programme. Literature review activities are set in a number of the core modules with outcomes presented in report or oral / poster presentation.	Problem-based exercises, reports, presentations. design tasks, group projects, independent projects.
Students should be able to: Evaluate customer / patient and user needs taking into account the wider	Design tasks, laboratory practicals, simulation exercises, group projects, industrial and clinical visits	Taught material is reinforced through practical design and analysis activities	Problem solving exercises, simulations, exhibitions, independent research.

engineering and clinical context (C5 M5)			
Students should be able to: Critically evaluate existing biomedical engineering concepts and practices, considering social and ethical implications (C4 C8 C9 C11 M4 M8 M9 M11)	Lectures, seminars, project supervision, design activities	Taught material is reinforced through practical design and analysis activities and relevant case studies	reports, presentations. design tasks, group projects
Students should be able to: Create and design new processes or products to fulfil a specified clinical requirement through synthesis of ideas from a wide range of sources and with consideration of ethics, security and risk (C4 C5 C8 C9 C10 M4 M5 M8 M9 M10).	Design tasks, laboratory practicals, simulation exercises, group projects, work placement	Taught material is reinforced through practical design activities	Problem solving exercises, design tasks, group and independent projects.
Students should be able to: [MEng only] use pertinent data and methods, including original research, to tackle problems with ambiguity,(M2 M4)	Lectures, seminars, project work	Taught content applied through design task and research projects.	Major research and design project reports and presentations.

ii) Critical engagement

Intended learning Outcome	Teaching methods	Learning Activities	Assessment Type
Students should be able to: Function effectively as an individual, and as a member or leader of a team throughout their work, recognising the responsibilities, benefits and importance of supporting equality, diversity and inclusion [C11 C16 M11 M16).	Lectures, seminars, projects supervision	Group design activities and other project work. Some groups will be cross-disciplinary with clinical input	Group projects, reports, presentations
Students should be able to: Propose solutions to contemporary biomedical engineering challenges, accounting for accessibility, patient needs, risk and responsible technology development, for MEng these should evidence significant originality, (C5 C6 C7 C8 C9 C10 C13 C14 M5 M6 M7 M8 M9 M10 M13 M14)	Lectures, seminars, workshops, design activities and group and independent projects	Significant design tasks and research projects	Major research and design project reports and presentations.

iii) Presentation of an argument

Intended learning Outcome	Teaching methods	Learning Activities	Assessment Type
Students should be able to:	Lectures, seminars, workshops	Taught content applied through design tasks and research projects	Reports, projects, presentations (oral and poster)

Interpret and report results, presenting data in alternative forms suitable for a range of audiences to create deeper understanding and/or greater impact (C4 C17 M4 M17)		and analysis of clinically relevant data	
Students should be able to: Communicate effectively on information, ideas, problems and solutions verbally, electronically and in writing with technical and non-technical audiences, (C17)[MEng only] evaluating the effectiveness of the methods used. (M17).	Seminars, workshops, project supervision	Taught content applied through design tasks and research projects and analysis of clinically relevant data, cross-disciplinary group work supports communication development	Reports, projects, presentations (oral and poster)

iv) Independent research

Intended learning Outcome	Teaching methods	Learning Activities	Assessment Type
Students should be able to: Use standard and specialist engineering and other relevant technical IT software confidently to conduct and report on biomedical engineering analysis (C3 M3)	Seminars, workshops, computer classes, project supervision	Taught content applied through design tasks and research projects	Problem based exercises, reports, presentations
Students should be able to: Demonstrate ability to conduct investigations or practical tasks autonomously and to reflect critically	Lectures, group projects, independent research, project supervision	Taught content applied through design tasks and research projects	Written assignments, laboratory reports, independent project reports.

and independently (C12 C13 M12 M13)			
Students should be able to: Apply quality management principles to ensure accuracy, precision, and regulatory compliance in clinical practice (C14 M14)	Lectures, seminars, project supervsion	Taught content applied through design tasks and research projects	Project reports, design activities and presentations

v) Relevant technical skills

Intended learning Outcome	Teaching methods	Learning Activities	Assessment Type
Students should be able to: Select and apply appropriate computational tools, analytical techniques and engineering technologies to address complex Clinical problems, recognising their limitations. (C3 M3)	Laboratories, workshops, group research projects, independent research projects.	Taught content applied through problem solving, analysis of clinical biomedical data and project work.	Laboratory reports, projects reports.
Students should be able to: Select and apply appropriate practical laboratory and workshop skills, equipment (e.g. measurement instrumentation) and procedures to conduct experiments(C12), [MEng only] demonstrating some original	Laboratories, design tasks, independent research.	Taught content applied through practical laboratory sessions, problem solving and significant practical or applied project work (group and individual)	Laboratory reports, design tasks, independent research.

and innovative application of engineering practical skills (M12)			

vi) Autonomous working

Intended learning Outcome	Teaching methods	Learning Activities	Assessment Type
Students should be able to: Demonstrate self-direction and originality in tackling and solving problem and act autonomously in planning and implementing tasks	Laboratories, design tasks, supervision of individual and group projects, independent research.	Laboratories, projects and design activities	Laboratory reports, project reports, presentations

vii) Presentation of research findings

Intended learning Outcome	Teaching methods	Learning Activities	Assessment Type
Students should be able to: Communicate and interpret information (e.g. technical literature) in an integrated manner to clinicians, industrialists, peers and the non-specialists (C4 C17 M4 M17)	Laboratories, design tasks, individual and group projects, independent research.	Projects and design activities include presentations in various formats to diverse audiences	Reports, projects (individual and group), presentations (oral and poster)
Students should be able to: Present research findings effectively in a range of formats , with an appreciation of uncertainty, ambiguity and limits of knowledge. (C17 M17)	Laboratories, design tasks, individual and group projects, independent research.	Projects and design activities include presentations in various formats to diverse audiences	Reports, projects (individual and group), presentations (oral and poster)

c) Transferable skills

i) Verbal, written and digital communication

Intended learning Outcome	Teaching methods	Learning Activities	Assessment Type
Students should be able to: Present technical and business information orally, in an appropriate form for a given audience (C17 M17)	Tutorials, group projects, independent research, project supervision.	A range of learning activities support oral presentations, from design activities to business case studies	Oral presentations (group and individual)
Students should be able to: Communicate business and technical information in an appropriate written form for a given audience (C17 M17)	Lectures, group projects, independent research, project supervision	Projects, business case studies and design activities include written reports for a variety of audiences (clinician, engineer, non-specialist)	Laboratory reports, project reports, literature reviews, presentations (poster and oral)
Students should be able to: Report on practical or simulation test of design solution including analysis and discussion of results (C2 C3 C17 M2 M3 M17)	Lectures, group projects, independent research, project supervision.	Numerous project and design activities	Laboratory reports, independent project reports.
Students should be able to: Use practical digital skills and specialist engineering IT software in contributions to group discussions and/or project work (C16 C17 M16 M17)	Laboratories, seminars, project supervision	Numerous project and design activities	Oral presentations, Laboratory practicals, design tasks, independent research.

ii) Numeracy

Intended learning Outcome	Teaching methods	Learning Activities	Assessment Type
Students should be able to: Manipulate and sort data to generate new data sets (C2 C3 M2 M3)	Lectures, workshops, research projects.	Learning in lectures reinforced in problem classes and demonstrated in project, presentation and design activities.	Computer-based exercises, written assignments, poster and oral presentations
Students should be able to: Manipulate and present data in alternative formats to create deeper understanding or greater impact (C1 C2 M1 M2 M3)	Lectures, workshops research projects.	Learning in lectures reinforced in problem classes and demonstrated in project, presentation and design activities.	Computer-based exercises, written assignments, poster displays, oral presentations.

iii) Self-reflection

Intended Learning Outcome	Teaching methods	Learning Activities	Assessment Type
Students should be able to: Reflect development of understanding and skills associated with a particular project or activity (C18 M18)	Tutorials, group projects, independent research, project supervision.	Self-assessment is encouraged throughout the programme and supported through formative feedback	Laboratory, reports, essays, independent project reports, professional skills programme
Students should be able to: Learn independently and understand new concepts in the discipline readily	Independent research projects, group research projects, work placement.	Self-guided learning and application of taught content through independent research and design activities	Independent project report, professional skills programme

Students should be able to: Explore career development opportunities (C18 M18)	Workshops, seminars, industrial and clinical visits, work placement.	Professional skills programme	Professional skills programme

iv) Problem solving

Intended learning Outcome	Teaching methods	Learning Activities	Assessment Type
Students should be able to: Solve problems through the integration of knowledge of mathematics, engineering, biology and medicine, information technology, design, business context and engineering practice (C1 C2 M1 M2) For MEng prior knowledge should be applied in order to formulate complex problems.	Project supervision, lectures, tutorials, example sheets, simulation exercises, laboratory-based exercises, computer- based exercises, independent research projects, group projects.	Taught content applied in numerous design, challenge and analytical based activities	Individual research projects, oral presentations, project reports, Problem-based assessment.
Students should be able to: Select and analyse appropriate evidence to solve non-routine problems in engineering and clinical sciences (C4 M4)	Lectures, workshops, project supervision	Taught content applied in numerous design, challenge and analytical based activities	Individual research projects, oral presentations, project reports, problem-based examinations, practical demonstrations.
Students should be able to: Apply standard management techniques to plan and allocate resources to projects (15 M15)	Lectures, workshops, independent research projects, group research projects,	Individual and group projects	Courseworks, individual project reports and meeting logs

v) Organisation and management

Intended learning Outcome	Teaching methods	Learning Activities	Assessment Type
Students should be able to: Develop and implement personal plan of work to meet a deadline and identify the critical activities (C15 M15)	Lectures, project supervision Independent research projects, group research projects,	Technical, design and analytical based individual and group projects	Independent project reports, meeting logs.
Students should be able to: Exercise initiative and personal responsibility, which may be as a team member or as a leader (C16 M16)	Independent research projects, group research projects,	Technical, design and analytical based individual and group projects	Independent project reports, meeting logs
Students should be able to: Demonstrate knowledge and understanding of the professional and ethical conduct of an engineer and legal requirements (C15 M15)	Lectures, seminars, industrial and clinical visits, project supervision	Technical, design and analytical based individual and group projects, laboratory sessions	Individual and group project reports and oral presentations

vi) Teamwork

Intended learning Outcome	Teaching methods	Learning Activities	Assessment Type
Students should be able to: Work collaboratively as part of an engineering team undertaking a range of different team roles (C16)). For	tutorials, project Supervision, design projects	Technical, design and analytical based group projects, group problem solving and analytical work during individual modules	group projects, reports and presentations

MEng only evaluate effectiveness of own and Team performance.(M16)			
Students should be able to: [MEng only] Lead engineering activities and teams by managing technical and commercial risks, including through change .	Major design and research projects	Technical, design and analytical based group projects, group problem solving and analytical work during individual modules	Reports, design reviews and presentations.

Year Abroad

In addition, for the 'with a Year abroad' variants the additional programme outcomes apply

Year in Industry

In addition, for the Year in Industry' variants the additional programme outcomes apply

10. Progression points

This programme follows the standard Scheme of Progression set out in Senate Regulations – see the version of Senate Regulation 5 governing undergraduate programmes relevant to the year of entry.

The following additional progression requirements for this programme have been approved:

- The following modules on these programmes are not eligible for compensation and must be passed at the relevant pass mark (40% at Levels 4-6, 50% at Level 7):
  > EG3005 - Individual Project
  > EG4007 - Fourth Year Project
  > EG4009 – Leadership and Project Management

- The following modules include assessments which cannot be reassessed:

  - EG4007
  - EG4009

  See the relevant module specification for specific details.

For MEng students: for progression from 2nd year to 3rd year and from 3rd year to 4th year a credit weighted average mark of 55% or more is required. Failure to progress will result in a change in programme from MEng to the equivalent BEng programme. Third year BEng students with a 2nd year credit-weighted average below 55% will not be permitted to transfer to an MEng programme during their 3rd year.

In cases where a student has failed to meet a requirement to progress he or she will be required to withdraw from the course.

a) Course transfers

Students who do not achieve the standard required for MEng, including those who have an average 2nd year mark of less than 55%, will be transferred to the BEng degree course

b) Year abroad

For the Year Abroad variant (for experiential Year Abroad only) the additional progression points apply

In cases where a student has failed to meet a requirement to progress he or she will be required to withdraw from the course

11. Criteria for award and classification

This programme follows the standard scheme of undergraduate award and classification set out in Senate Regulations – see the version of *Senate Regulation 5 governing undergraduate programmes* relevant to the year of entry.

The following additional award requirements for this programme have been approved as conditions of professional body accreditation:

- Major individual or group project modules and/or those covering AHEP4 learning outcomes that are not assessed in other modules are designated as being required to be passed at

Honours level. The following modules on these programmes are not eligible for compensation and must be passed at the relevant pass mark (40% at Levels 4-6, 50% at Level 7):

- EG3005 - Individual Project
- EG4007 - Fourth Year Project
- EG4009 - Leadership and Project Management

- The following modules include assessments which cannot be reassessed:

  - EG4007
  - EG4009

  See the relevant module specification for specific details.

- To qualify for an accredited degree award, the mark for each module assessment **must not be lower than 10% below the standard module pass mark** (40% for levels 4-6, 50% for level 7).

  Students who pass the module overall but fail to meet this threshold in any of the assessment components may re-sit the component, provided re-sit opportunities are available for the module, in accordance with SR5.38, SR5.42 and 5.43. If a re-sit is undertaken solely to maintain accreditation status, the overall module mark will remain unchanged.

  The following assessment components are exempt from this requirement:

  EG1026 VLE Assignment
  EG2302 Coursework
  EG3112 VLE Online Test
  EG3125 Coursework
  EG3313 Progress Tests
  EG3422 VLE Tests
  EG4227 Coursework Project 1
  EG4422 Online Continuous Assessment

  Students who fail to achieve this requirement will be awarded the non-accredited version of the BEng/MEng degree.

- For accreditation purposes, the Engineering Council requires that finalists on accredited BEng and MEng programmes have **no more than 30 credits of 'compensated pass' across the programme as a whole.** If, after reassessment, a student does not achieve the requirements above but does meet the University's criteria for the award of a bachelor's degree, they will be awarded the non-accredited degree of BSc in Biomedical Engineering.
- For students on the final year of the MEng degree; if after reassessment they do not achieve the requirements above but do meet the University's criteria for the award of an integrated master's degree, they will be awarded the non-accredited degree of MSci in Biomedical Engineering. Such students may opt to be awarded the accredited BEng degree in place of the MSci.

12. Special features

The undergraduate degree streams within the school of engineering are highly integrated with a core first year. This derives from the General Engineering ethos of the School, ensuring all engineering students benefit from a solid foundation in the fundamentals of engineering disciplines. This feature is used to maximise opportunities for interdisciplinary working and integrated projects teams that are so important to modern professional engineering careers. The biomedical engineering degree builds on this core expertise emphasising the latest advances in biomedical engineering technology focused across all key areas: AI, biomaterials, biomechanics, regenerative medicine and tissue engineering. The degree integrates practical skills and expertise in engineering and the life sciences. The programme has a focus on the latest medical technologies and innovations for diagnosis and treatment of disease and students work directly with researchers and clinicians.

For the Year Abroad variant (for experiential Year Abroad only) the additional Special Features apply

For the Year in Industry variant. The University recognises that undertaking a work placement as part the programme of study can enhance career prospects and provide added value, and as such this programme includes a 'year in industry' variant.

By experiencing real-world scenarios and applying skills and knowledge to a professional environment, students can gain a unique insight into how their studies can be utilised in industry. This will not only showcase their abilities to future employers but will also enhance their studies upon returning to university to complete your programme.

To understand the special features for year in industry undergraduate programme variants, this programme specification should be read in conjunction with the programme specification content which can be found here. This outlines details including programme aims, support, progression and duration.

12a. Research-inspired Education

Students on this programme will advance through the four quadrants of the University of Leicester Research-inspired Education Framework as follows:

RiE Quadrant	Narrative
	This engineering programme is built on four pillars of Research-inspired Education, ensuring that students develop both foundational knowledge and advanced research skills. This holistic approach integrates staff expertise, hands-on experience, and active research engagement into the curriculum, fostering critical thinking, creativity, and professional readiness.
Research-briefed Bringing staff research content into the curriculum.	**Research-briefed**: Academics actively incorporate their latest research findings and technological advancements into teaching and learning resources. This allows students to explore case studies, research papers, and cutting-edge developments, providing context and relevance by connecting theoretical engineering concepts to real-world applications and societal challenges.
Research-based Framed enquiry for exploring	**Research-based**: Supported by academics, the students explore existing knowledge through several modules which involve problem-based learning, independent and group projects, and practical laboratories. These activities promote discovery and intellectual curiosity.

existing knowledge. **Research-oriented** Students critique published research content and process. **Research-apprenticed** Experiencing the research process and methods; building new knowledge.	**Research-oriented**: Facilitated by a series of training opportunities and assessments, students identify and critically evaluate published research findings and practices. This develops their ability to evaluate and contextualize information within their field and supplements their own experimental design, data analysis, and conclusion derivation. **Research-apprenticed**: Under close mentorship of the academic members, the students engage with research-driven projects and practical coursework which are closely related to the ongoing research at the School of Engineering. They engage in all stages of a typical research project, including defining objectives, experimental design, data analysis, and presenting findings both orally and in written formats. This process is supported by structured training and weekly supervision meetings. This integration of research equips students with the skills and knowledge to excel in both academic and professional engineering environments.

As part of studying at a research-intensive university, students on this programme have the following extra or co-curricular opportunities available to them to gain exposure to research culture:

This programme provides various opportunities for students to engage with the ongoing research within the five distinct groups and contribute positively to the vibrant research culture at the School. For instance, students are invited to monthly seminars delivered by researchers and academics which increases their exposure to latest knowledge and provides networking opportunities. Guest lecturers from other institutes and industry are invited regularly to present their solutions to real-world challenges. Moreover, individual and group projects, co-designed by students, are largely aligned with the ongoing research work by the academic supervisors at the School.

Teaching on this programme will be research-informed (it draws consciously on systematic inquiry into the teaching and learning process itself) in the following way:

The School supports all staff involved in teaching to gain an accredited Higher Education teaching qualification, in which they demonstrate their use of teaching theory to support their own practice and reflect on their current teaching and continuing professional development.

The good practices in research-informed teaching pedagogy are disseminated to module convenors through the School's teaching away day, peer observation of teaching, and via central email communications. Academics are encouraged to participate in the yearly teaching and learning conference held at the university. Curriculum delivery is routinely discussed in the Education Committee and meetings between education and programme directors.

13. Indications of programme quality

Normal School and University academic quality assurance processes are used to continuously review and improve the programmes.

Other degree programmes within the School of Engineering are accredited by the appropriate professional engineering institutions (PEIs), through the Institution of Mechanical Engineers (IMechE) and Institution of Engineering and Technology (IET), this leads to an advantage when applying for professional registration as a Chartered Engineer (CEng). MEng programmes offer direct route to Chartered Engineer status (CEng), further learning following graduation is required to obtain CEng with a BEng degree.

The School keeps the professional engineering institutions whom we seek accreditation from under review and the 5 yearly accreditation visits are key events in continuously improving the programmes and evolving them to meet the needs of future graduates and employers.

Accreditation process for the Biomedical Engineering BEng and MEng programmes is underway through both the Institution of Engineering and Technology (IET) and the Institute of Physics and Engineering in Medicine (IPEM). Accreditation can only be achieved retrospectively after graduation of the first cohort of students.

14. External Examiner(s) reports

The details of the External Examiner(s) for this programme and the most recent External Examiners' reports for this programme can be found at exampapers@Leicester [log-in required].

UNIVERSITY OF LEICESTER

Programme Specification (Undergraduate) FOR ENTRY YEAR: 2025/26

Date created: 13/01/2024 **Last amended:** 20/06/2025 **Version no.** 2 **Date approved by EQED:** Click or tap here to enter text.

Appendix 1: Programme structure (programme regulations)

The University regularly reviews its programmes and modules to ensure that they reflect the current status of the discipline and offer the best learning experience to students. On occasion, it may be necessary to alter particular aspects of a course or module.

[BEng/MEng Biomedical Engineering]

Notes

This is an indicative list of option modules and not definitive of what will be available. Option module choice is also subject to availability, timetabling, student number restrictions and, where appropriate, students having taken appropriate pre-requisite modules.

Level 4/Year 1 2025/26

Credit breakdown

Status	Year long	Semester 1	Semester 2
Core	30 credits	45 credits	45 credits
Optional	n/a	n/a	n/a

120 credits in total

Core modules

Delivery period	Code	Title	Credits
Year long	EG1007	Sustainable Engineering Design	15 credits
Year long	EG1122	Digital Electronics and Communications	15 credits
Semester 1	EG1203	Principles of Electrical Engineering	15 credits
Semester 1	EG1016	Engineering Mathematics with programming - I	15 credits

Delivery period	Code	Title	Credits
Semester 1	EG1031	Solid Mechanics	15 credits
Semester 2	EG1041	Fluid Mechanics	15 credits
Semester 2	EG1026	Engineering Mathematics with programming - II	15 credits
Semester 2	EG1102	Thermodynamics and Heat Transfer	15 credits

Notes
n/a

Notes

Level 5/Year 2 2026/27

Credit breakdown

Status	Year long	Semester 1	Semester 2
Core	30 credits	30 credits	45 credits
Optional	n/a	15 credits	n/a

120 credits in total

Core modules

Delivery period	Code	Title	Credits
Year long	EG2302	System Dynamics and Control	15 credits
Year long	EG2006*	Integrated Engineering Design	15 credits
Semester 1	EG2021	Anatomy and Physiology for Engineers	15 credits
Semester 1	EG2008*	Engineering Management and Business Simulation	15 credits
Semester 2	EG2022	Fundamentals of Biomedical Engineering	15 credits
Semester 2	EG2023	Introduction to Biomaterials	15 credits

Delivery period	Code	Title	Credits
Semester 2	EG2321	Computational Engineering Methods	15 credits

Notes

Option modules

Delivery period	Code	Title	Credits
Semester 1	EG2213	Mechatronics	15 credits
Semester 1	EG2231	Embedded Systems and IoT	15 credits
Semester 1	EG2211	Analogue Electronics and Amplifiers	15 credits

Notes

This is an indicative list of option modules and not definitive of what will be available. Option module choice is also subject to availability, timetabling, student number restrictions.

Level 6/Year 3 2027/28

Credit breakdown

Status	Year long	Semester 1	Semester 2
Core	30 credits	45 credits	30 credits
Optional	n/a	n/a	15 credits

120 credits in total

Core modules

Delivery period	Code	Title	Credits
Year long	EG3005	Individual Project	30 credits
Semester 1	EG3061	Biological Imaging	15 credits
Semester 1	EG3062	Biofluid Mechanics	15 credits

Delivery period	Code	Title	Credits
Semester 1	EG3063	Medical Devices and Prosthetics	15 credits
Semester 2	EG3064	Computational Biology	15 credits
Semester 2	EG3065	Biomechanics	15 credits

Option modules

Delivery period	Code	Title	Credits
Semester 2	EG3323	Digital Control and Actuators	15 credits
Semester 2	EG3213	Machine Learning for Engineers	15 credits

Notes
This is an indicative list of option modules and not definitive of what will be available. Option module choice is also subject to availability, timetabling, student number restrictions.

Level 7/Year 4 2028/29

Credit breakdown

Status	Year long	Semester 1	Semester 2
Core	60 credits	15 credits	n/a
Optional	n/a	15 credits	30 credits

120 credits in total

Core modules

Delivery period	Code	Title	Credits
Year long	EG4007	Group Project	30 credits
Year long	EG4009	Leadership and Project Management	30 credits
Semester 1	EG4061	Advanced Biomedical Signal Processing	15 credits

Option modules

Delivery period	Code	Title	Credits
Semester 1	EG4227	Artificial Intelligence Architectures	15 credits
Semester 1	EG4065	Systems Engineering	15 credits
Semester 2	EG4062	Neuromuscular Control and Rehabilitation	15 credits
Semester 2	EG4063	Tissue Engineering and Regenerative Medicine	15 credits
Semester 2	EG4064	Advanced Characterisation Techniques	15 credits

Notes
This is an indicative list of option modules and not definitive of what will be available. Option module choice is also subject to availability, timetabling, student number restrictions.

Appendix 2: Module specifications

See undergraduate module specification database (Note - modules are organized by year of delivery).