Programme Information		
Programme Title	Programme Code	HECoS Code
Molecular Bioengineering	H160	For Registry Use Only

Award	Length of Study	Mode of Study	Entry Point(s)	Total Credits	
				ECTS	CATS
MEng H160	4 Academic years	Full-time	Annually in October	240	480
BEng H161	N/A	N/A	N/A	180	360
DipHE - H160D	N/A	N/A	N/A	120	240
CertHE – H160C	N/A	N/A	N/A	60	120

You must apply to and join the MEng.

The DipHE and CertHE exit awards and are not available for entry, they are not accredited by any professional body. The BEng is an honours degree and is not available for entry. Students may be eligible for transfer onto the BEng if they meet the criteria as specified in the progression and classification section, it may also be offered as an exit award in exceptional circumstances.

Ownership			
Awarding Institution	Imperial College London	Faculty	Faculty of Engineering
Teaching Institution	Imperial College London	Department	Bioengineering
Associateship	City and Guilds London Institute	Main Location(s) of Study	South Kensington Campus
External Reference			
Relevant QAA Benchmark Statement(s) and/or other external reference points		Engineering	
FHEQ Level		MEng Level 7 BEng Level 6 DipHE Level 5 CertHE Level 4	
EHEA Level		2nd Cycle	
External Accreditor(s) (if applicable)			
External Accreditor 1:	Institution of Mechanical Engineers		
Accreditation received:	2017	Accreditation renewal:	2029
External Accreditor 2:	The Institution of Engineering Designers		

Accreditation received:	2018	Accreditation renewal:	2029
External Accreditor 3:	Institute of Physics and Engineering in Medicine		
Accreditation received:	2024	Accreditation renewal:	2029
External Accreditor 4:	The Institution of Engineering and Technology		
Accreditation received:	2017	Accreditation renewal:	2029
External Accreditor 5:	The Institute of Materials, Minerals and Mining		
Accreditation received:	2017	Accreditation renewal:	2029
Collaborative Provision			
Collaborative partner	Collaboration type	Agreement effective date	Agreement expiry date
N/A	N/A	N/A	N/A
Specification Details			
Programme Lead		Dr Claire Stanley	
Student cohorts covered by specification		2026-27 entry	
Date of introduction of programme		October 18	
Date of programme specification/revision		July 26	

Programme Overview

Molecular Bioengineering considers how we might engineer biological systems to solve challenges in health and wellbeing. The programme will take a strong engineering approach to understanding and solving biological and biomedical problems and has been designed with a focus on engineering rather than a clinical perspective. By undertaking this degree programme you will develop the scientific understanding and laboratory expertise of a life-scientist with the technical knowledge and problem-solving skills of an engineer. With this unique combination of skills you will be extremely well placed to contribute to addressing the global challenges of today: health and well-being agenda, personalised medicine, new biomedical technology industries.

Our programme combines lectures, study groups and taught classes where you gain a theoretical understanding with many practical wet and dry labs and activities where you will and work on real world projects in medicine and biology with life-changing potential. You will also have many opportunities to take part in design, test and build activities starting in the first year and continuing through the degree programme.

Our programme will also build your communication and inter-personal skills through a range of teaching activities including a substantial amount of group and team work as collaboration in interdisciplinary teams is a key feature of working as a professional Molecular Bioengineer. This begins in the first week of year 1 where group working is introduced in fresher's week,

We expect our graduates to have the ability to become leaders in their chosen areas and so our programme is also designed to develop your leadership skills, introduce you to professional standards and to develop your understanding of engineers' obligations to society, the profession and the environment.

In your first two years all modules are compulsory and are delivered in the department. These modules are designed so that you build a breadth of core engineering and biomedical engineering knowledge, as well as a specialist understanding of biochemical, physiological and biological processes. You will undergo extensive wet laboratory

training so that you develop excellent advanced practical laboratory skills in chemical biology, molecular biology, synthetic biology, analytical sciences, microfluidics and device engineering.

To progress on to the third year of the MEng course you are required to achieve an overall mark of at least 60% for the first two years. Director of Teaching has the discretion to condone a near miss to this requirement. Otherwise, you are obliged to move to the third year of the BEng programme. In the third year of the MEng programme there are a 5 compulsory modules including the group project that make up 45 ECTS. You can then choose 3 additional elective modules aligned with your own interests.

In your final year you will spend 6 months working on a substantial individual research project. This individual project will be hosted within a research group and allows you to gain an understanding of the latest developments in the Bioengineering field as well as develop your ability to work independently. As much of the final year is spent on this individual project this is reflected in the ECTS weighting of the project. The remaining 25 ECTS is made up of advanced modules that you choose.

In the third and fourth years of the course you are also required to select an I-Explore module hosted outside of the department so that you will be taught alongside students from other degree programmes. These modules include business and management modules as well as other topics outside the Bioengineering discipline that will allow you to apply your knowledge in a new context.

Learning Outcomes

The following Learning Outcomes are in line with FEHQ levels 4-7 and the UK-SPEC outcomes required for accreditation by professional engineering bodies.

The Learning Outcomes are categorised into the following groups:

- **Knowledge and Understanding [KU]**
- **Intellectual Abilities [IA]**
- **Practical and Transferable skills [PT]**

Upon successful completion of the MEng Molecular Bioengineering programme you will be able to:

[KU1] Describe and explain the underlying scientific principles, engineering mathematics, computational tools and models, and laboratory and analysis techniques that underpin Molecular Bioengineering and identify their limitations.

[KU2] Describe and explain the core concepts, principles and theories of Molecular Bioengineering, Biomolecular Analysis, Biomimetic Design, Synthetic Biology and Materials Engineering and how these are relevant to historical, current and future developments and technologies in a biological, pharmaceutical and medical context.

[KU3] Give examples of a wide range of innovative and creative engineering solutions applied to healthcare problems and quality-of-life issues and discuss these examples in terms of their commercial, economic and social implications.

[KU4] Recognise and explain the need for a high level of professional and ethical conduct in engineering, based on a knowledge of professional codes of conduct and how ethical dilemmas can arise.

[IA1] Apply a range of engineering principles, tools and notations proficiently.

[IA2] Critically select engineering principles and tools for the analysis and solution of familiar and unfamiliar bioengineering problems.

[IA3] Apply diagnostic skills, technical knowledge and understanding of engineering design processes to establish rigorous and creative solutions to complex Bioengineering problems.

[IA4] Extract pertinent data and critically evaluate information gathered from academic and technical resources.

[PT1] Plan and safely execute experiments in diverse types of laboratories.

[PT2] Demonstrate advanced practical skills in Chemistry, Molecular Biology, and Analytical Sciences using a range of current and cutting-edge laboratory and analysis techniques.

[PT3] Demonstrate advanced leadership, teamwork and communication skills.

[PT4] Exercise judgement in a range of situations and accept accountability for decisions made and the quality of outcomes produced.

[PT5] Employ advanced skills to plan and conduct research, advanced technical and professional activities.

Upon successful completion of the BEng Molecular Bioengineering programme you will be able to:

[KU1] Describe and explain the underlying scientific principles, engineering mathematics, computational tools and models, and laboratory and analysis techniques that underpin Molecular Bioengineering.

[KU2] Describe and explain the core concepts, principles and theories of Molecular Bioengineering, Biomolecular Analysis, Biomimetic Design, Synthetic Biology and Materials Engineering and how these are relevant to historical, current and future developments and technologies in a biological, pharmaceutical and medical context.

[KU3] Give examples of innovative and creative engineering solutions applied to healthcare problems and quality-of-life issues and discuss these examples in terms of their commercial, economic and social implications.

[KU4] Recognise and explain the need for a high level of professional and ethical conduct in engineering, based on a knowledge of professional codes of conduct and how ethical dilemmas can arise.

[IA1] Apply a range of engineering principles, tools and notations proficiently.

[IA2] Critically select engineering principles and tools for the analysis and solution of familiar bioengineering problems.

[IA3] Apply diagnostic skills, technical knowledge and understanding of engineering design processes to establish creative solutions to complex Bioengineering problems.

[IA4] Extract pertinent data and critically evaluate information gathered from academic and technical resources.

[PT1] Plan and safely execute experiments in diverse types of laboratories.

[PT2] Demonstrate advanced practical skills in Chemistry, Molecular Biology, and Analytical Sciences using a range of current and cutting-edge laboratory and analysis techniques.

[PT3] Demonstrate leadership, teamwork and communication skills.

[PT4] Exercise judgement in a range of situations and accept accountability for achieving personal and/or group outcomes.

Upon successful completion of the DipHE Molecular Bioengineering programme you will be able to:

[KU1] Describe and explain the underlying scientific principles, engineering mathematics, computational tools and models, and laboratory and analysis techniques that underpin Molecular Bioengineering.

[KU2] Describe and explain the core concepts, principles and theories of Molecular Bioengineering, Biomolecular Analysis, Biomimetic Design, Synthetic Biology and Materials Engineering and how these are relevant to historical and current developments and technologies in a biological, pharmaceutical and medical context.

[KU3] Give examples of innovative and creative engineering solutions applied to healthcare problems and quality-of-life issues.

[KU4] Recognise and explain the need for a high level of professional and ethical conduct in engineering.

[IA1] Apply a range of engineering principles, tools and notations proficiently.

[IA2] Select engineering principles and tools for the analysis and solution of familiar bioengineering problems.

[IA3] Apply diagnostic skills, technical knowledge and understanding of engineering design processes to establish creative solutions to complex Bioengineering problems.

[IA5] Extract pertinent data and information gathered from academic and technical resources.

[PT1] Plan and safely execute experiments in a defined range of laboratories.

[PT2] Demonstrate good practical skills in Chemistry, Molecular Biology, and Analytical Sciences using a range of current laboratory and analysis techniques.

[PT3] Demonstrate leadership, teamwork and communication skills.

[PT4] Accept accountability for achieving personal and/or group outcomes.

Upon successful completion of the CertHE Molecular Bioengineering programme you will be able to:

[KU1] Describe and explain some of the underlying scientific principles, engineering mathematics, computational tools and models, and laboratory and analysis techniques that underpin Molecular Bioengineering.

[KU2] Describe and explain the basic concepts, principles and theories of Molecular Bioengineering, Biomolecular Analysis and Materials Engineering and how these are relevant to historical and current developments and technologies in a biological, pharmaceutical and medical context.

[KU3] Give examples of engineering solutions applied to healthcare problems and quality-of-life issues.

[KU4] Recognise and explain the need for a high level of professional and ethical conduct in engineering.

[IA1] Apply a range of engineering principles, tools and notations.

[IA2] Select engineering principles and tools for the analysis and solution of familiar bioengineering problems.

[PT1] Safely execute experiments in a defined range of laboratories.

[PT2] Demonstrate practical skills in Chemistry, Molecular Biology, and Analytical Sciences.

[PT3] Demonstrate teamwork and communication skills.

[PT4] Accept responsibility for outputs.

The Imperial Graduate Attributes are a set of core competencies which we expect students to achieve through completion of any Imperial degree programme. The Graduate Attributes are available at: www.imperial.ac.uk/about/education/our-graduates/

Entry Requirements	
Academic Requirement A- Level IB	The minimum requirement is normally A*AA overall at A-level This usually comprises of: A* in Mathematics A in Chemistry A in a third subject General Studies and Critical Thinking are not accepted. Students taking English exam board science A-levels will be required to pass the practical endorsement. Minimum **39** points (or a comparable qualification recognised by the university

	6 in Mathematics* at higher level **6** in Chemistry at higher level **6** in another subject at higher level *Mathematics Analysis and Approaches or the Applications and Interpretation syllabi will be accepted at higher level, but Analysis and Approaches is preferred.
Non-academic Requirements	N/A
English Language Requirement	Higher requirement IELTS score of 7.0 overall (minimum 6.5 in all elements)
Admissions Test/Interview	Selected applicants are invited to an interview day online. This usually involves an introduction talk about the department, followed by group activities and individual interviews. Further information on the interview process can be found here: Interview Guidance.

The programme's competency standards documents can be found at: www.imperial.ac.uk/media/imperial-college/faculty-of-engineering/bioengineering/public/student/Competency-Standards---Bioengineering-UG-PG---June-2016-Final.pdf

Learning & Teaching Approach

Scheduled Learning & Teaching

You are taught through a combination of lectures, study groups and tutorials, laboratories and computing labs, guest lectures and presentations. Study groups and tutorials will enable you to discuss and develop your understanding of topics covered in lectures whilst in smaller groups of around 30 students. Dry laboratories in electronics, mechanics and bioengineering will allow you to develop practical skills and gain experience in the application of the theory discussed in lectures and study groups. Wet laboratories will allow you to develop practical skills and develop an understanding of how to handle biological and chemical materials. You will undergo extensive amounts of wet laboratory work throughout this programme and so become familiar with routine methods and analysis techniques. Computing labs will support the maths and computational content of the course. In laboratories you will work in pairs or trios.

The Virtual learning environment will be used as a repository for teaching materials including recordings of all lectures, lecture notes and problem sheets. Learning technologies will be used to support teaching activities including in-class polling with Mentimeter, online self-diagnostic quizzes and online class forums.

The first two years of the programme will be made up of compulsory modules which all students on the programme will study. In years three and four, there will be a number of compulsory modules and you will be able to choose the remainder of modules you study.

Independent Learning

You are expected to spend significant time on independent study outside of face to face contact time. From our experience, students that undertake independent learning have improved academic performance, increased motivation and confidence in themselves and their abilities. By undertaking independent learning you are also preparing yourself for professional practice where it is expected that you will manage your own continued professional development. Independent learning activities that you will be expected to undertake will typically include accessing online resources, completing problem sheets, reading journal articles and books, undertaking research in the library, reviewing lecture notes and watching lecture recordings, working on individual and group projects, working on coursework assignments and revising for exams.

Bioengineering uses flipped teaching for some modules, meaning that you need to actively engage with on-line eModules ahead of attending timetabled sessions. This independent learning is followed by sessions lead by the lecturer where all students work in small groups to apply that knowledge to more practical examples. This helps you to further consolidate and enhance your understanding of the topics you study and allows us the time to focus on more challenging concepts in the taught sessions

Design and Research Projects

A key part of this programme are the second and third year group projects and the fourth year individual research project. In second and third year you will work in a small group to design, make and test a solution to a bioengineering problem. These projects will allow you to develop professional engineering skills and appreciate the subtleties of working in a team. You will also be given support in managing a team and giving effective feedback to others, which includes training and practice with the process of peer review which will form part of the assessment for these projects. For the process of peer review each member of a team is asked to provide relative effort marks for their team members via an anonymous on-line form. We guide you through this process, including an early practice run to ensure that this is fair and informative. In fourth year you are required to undertake a substantial research project embedded in a research team within the Bioengineering department. Whilst this project will be based in Bioengineering it may involve collaboration with groups in other Imperial departments or with Industry.

Overall Workload

Your overall workload consists of face-to-face sessions and independent learning. While your actual contact hours may vary according to the optional modules you choose to study, the following gives an indication of how much time you will need to allocate to different activities at each level of the programme. At Imperial, each ECTS credit taken equates to an expected total study time of 25 hours. Therefore, the expected total study time is 1500 hours per year.

Typically, in the first two years (levels 4 and 5) you will spend around 25% of your time on lectures, seminars and other scheduled activity (around 400 hours) and around 75% of your time on independent study (around 1100 hours).

In the third and fourth years (level 6 and 7), you will spend less time in scheduled activity (around 250 hours) with the reminder in independent study, a significant proportion of which will be the 3rd year group project and 4th year individual research project.

Assessment Strategy

Assessment Methods

A variety of assessment methods will be used to test your understanding. Assessments are grouped as formative and summative.

Formative assessments do not contribute to the module mark but provide information on your progress as an individual and in the context of the class. This allows you to learn by using your new skills to solve problems and receive feedback on your performance to guide your future learning. This supports you to achieve a better performance in the summative assessments which do count towards your module marks. Formative assessments also provide feedback to the teaching staff which allow us to adapt our teaching.

Summative assessments are used to assess your learning against the intended module learning outcomes and contribute towards your achievement of the programme learning outcomes, detailed above. There is summative assessment during and/or at the end of each module and these assessments will contribute towards your mark for each year.

The choice of assessment method is largely determined by the learning objectives being assessed and includes:

Assessed Coursework

- Problem sheets
- Laboratory reports – individually or as part of a portfolio.
- Practical demonstrations
- Project reports
- Oral presentations
- Poster presentations
- Academic tutorials

Examinations

- In class progress tests
- Mastery examinations (online/written)
- Written examinations

The design of our programme will allow you to test your understanding of the subject using formative assessments such as problem sheets, on-line diagnostic tests and mock examinations before you complete the summative assessments that count towards your final mark.

The table below is indicative of the balance of assessment based on a typical pathway through the course.

	Year 1	Year 2	Year 3	Year 4
Coursework	34 %	53 %	47 %	59 %
Examinations	66 %	47 %	53 %	41 %

Academic Feedback Policy

Feedback will be provided in one of many formats, including:

- Oral (during or after lectures, personally or as a group feedback session)
- Personal (discussion with academics during office hours, meetings with Personal Tutors)
- Interactive (problem solving with GTAs & study groups, peer feedback)
- Written (solutions/model answers to coursework, notes on submitted reports)
- Online (results of online tests with correct answers provided)
- Self-reflective (personal journals, reflective essays and class discussion)

It is department policy to provide feedback to students within 10 working days of assessment submission. This timeframe may be extended for significantly large assessments or for final examinations. In this case the date when feedback will be available by will be communicated to you.

Individual feedback will not be provided on written examinations. However, feedback on the general performance of the cohort on the exam questions will be given. Numerical results will be published after the meeting of the final Board of Examiners.

Imperial's Policy on Academic Feedback and guidance on issuing provisional marks to students is available at: www.imperial.ac.uk/about/governance/academic-governance/academic-policy/exams-and-assessment/

Re-sit Policy

As an accredited degree, students on this programme are subject to the standards set by the Engineering Council in relation to compensation: a maximum of 15 ECTS credits can be compensated across the entire programme*.

Years 1 and 2

Years 1 and 2 In the absence of approved mitigating circumstances, and following any application of allowed compensation, Year 1 and Year 2 students who have failed modules at first attempt will normally be:

▪ offered a capped in-year re-assessment opportunity of failed modules, if they have passed at least 45 ECTS in that year of programme;

▪ required to retake the year in attendance as if for the first time (can only be offered once), retake the failed modules, or resit the failed modules' assessments in the following year, if they have passed at least 30 ECTS (but fewer than 45) in that year of programme;

▪ required to withdraw from the programme if they have passed fewer than 30 ECTS in that year of programme. At the discretion of the Board of Examiners, an exit award may be offered provided that you have met the requirements for that award.

Years 3 and 4

In the absence of approved mitigating circumstances, and following any application of allowed compensation, Year 3 and Year 4 students who have failed modules at first attempt will normally be:

▪ offered a capped in-year re-assessment opportunity of failed modules if they have passed at least 45 ECTS in that year of the programme;

▪ required to retake the modules they have failed in attendance, or resit the failed modules' assessments next year, if they have passed at least 30 ECTS (but fewer than 45) in that year of the programme;

▪ required to withdraw from the programme if they have passed fewer than 30 ECTS in that year of the programme. At the discretion of the Board of Examiners, an exit award may be offered provided that you have met the requirements for that award

For non-progressing students after in-year re-assessments have taken place, the Board of Examiners' decisions will be dictated by clauses 11.5 and 11.7 of the Regulations of Taught Programmes of Study.

For students with accepted MCs, in-year uncapped deferrals will be offered to give them the opportunity to progress. You can choose to take all or some of these during the summer re-assessment period. However, advice will be offered to you by Board of Examiners, the Director of Teaching, the Academic Tutor and the Student Well-being Adviser.

Imperial's Policy on Re-sits is available at: www.imperial.ac.uk/about/governance/academic-governance/academic-policy/exams-and-assessment/

Mitigating Circumstances Policy
Imperial's policy on mitigating circumstances makes provision for the Departmental Board of Examiners to use their discretion where extenuating circumstances are independently corroborated and are judged by the Departmental Mitigating Circumstances Board to be of sufficient severity to have substantially affected a student's performance. Imperial's Policy on Mitigating Circumstances is available at: www.imperial.ac.uk/about/governance/academic-governance/academic-policy/exams-and-assessment/

Additional Programme Costs		
This section should outline any additional costs relevant to this programme which are not included in students' tuition fees.		
Description	Mandatory/Optional	Approximate cost
Course materials - Electronics textbook	Optional	£40
Personal Protective Equipment – Bioengineering Overalls	Mandatory	£26

Programme Structure

Year 1 – FHEQ Level 4
You will study all modules.

Code	Module Title	Core/ Compulsory/ Elective	Group*	Term	Credits
BIOE40007	Medical and Biochemical science 1	Compulsory	N/A	Autumn-Spring	15
BIOE40008	Molecules and Energetics 1	Compulsory	N/A	Autumn-Spring	15
BIOE40005	Mathematics and Engineering 1	Compulsory	N/A	Autumn-Spring	15
BIOE40003	Design and Professional Practice 1	Compulsory	N/A	Autumn-Summer	5
BIOE40002	Computer Fundamentals and Programming 1	Compulsory	N/A	Spring-Summer	10
				Credit Total	60

Year 2 - FHEQ Level 5
You will study all modules.

Code	Module Title	Core/ Compulsory/ Elective	Group	Term	Credits
BIOE50010	Programming 2	Compulsory	N/A	Autumn	5
BIOE50005	Mathematics and Engineering 2	Compulsory	N/A	Autumn-Spring	15
BIOE50007	Medical and Biochemical Science 2	Compulsory	N/A	Autumn-Spring	15
BIOE50009	Molecules, Materials and Measurement 2	Compulsory	N/A	Autumn-Spring	15
BIOE50002	Design and Professional Practice 2	Compulsory	N/A	Autumn-Summer	10
				Credit Total	60

Year 3 - FHEQ Level 6
You will study all compulsory modules. *Students on the MEng Programme can then choose 3 elective modules from groups A & B, across FHEQ level 6 & 7 modules – subject to sitting at least 60 ECTS at level 7 modules (including the Individual project) in years 3 and 4. Students on the BEng programme choose 3 elective modules from group A*

Code	Module Title	Core/ Compulsory/ Elective	Group	Term	Credits
BIOE60034	Biomaterials for Bioengineers	Compulsory	N/A	Autumn	5

BIOE60011	Probability, Statistics and Data Analysis	Compulsory	N/A	Autumn	5
BIOE60024	Modelling in Biology	Compulsory	N/A	Autumn-Spring	5
BIOE60005	Bioengineering Group Project	Compulsory	N/A	Autumn-Summer	20
BIOE60012	Foundations of Synthetic Biology	compulsory	N/A	Spring	5
	I-Explore	Compulsory	N/A	Autumn and/or Spring	5
BIOE60015	Advanced Imaging Technologies for Systems Biology and Biomedical Research	Elective	A	Autumn	5
BIOE60006	Digital Biosignal Processing	Elective	A	Autumn	5
BIOE60010	Software Engineering for Bioengineers	Elective	A	Autumn	5
BIOE60007	Human Centred Design of Assistive and Rehabilitation Devices	Elective	A	Spring	5
BIOE60008	Image Processing	Elective	A	Spring	5
BIOE60019	Industrial Applications of Cellular Engineering L6	Elective	A	Spring	5
BIOE60013	Tissue Engineering and Regenerative Medicine	Elective	A	Spring	5
ELEC60008	Control Engineering**	Elective	B	Autumn	5
ELEC60004	Machine Reasoning**	Elective	B	Autumn	5
ELEC60002	Statistical Signal Processing and Inference**	Elective	B	Spring	5

Year 3 - FHEQ Level 7

Code	Module Title	Core/ Compulsory/ Elective	Group	Term	Credits
BIOE70008	Advanced Physiological Monitoring and Data Analysis	Elective	A	Autumn	5
BIOE70049	Bioengineering Approaches to Cancer	Elective	A	Autumn	5
BIOE70012	Biomimetics	Elective	A	Spring	5
BIOE70005	Cellular and Molecular Mechanotransduction	Elective	A	Spring	5
BIOE70076	Communicating Biomedical Science and Engineering	Elective	A	Spring	5
				Credit Total	60

Year 4 - FHEQ Level 7 (except Ŧ)

You must complete the compulsory Individual Project module (35 ECTS)

You can then choose 4 elective modules from Group C, and 1 from Group D, across levels 6 and 7 (25 ECTS). A maximum of 1 elective module can be from the spring term (term 2).'

Please note: You must accumulate 60 ECTS of level 7 modules by the end of Year 4.

ŦLevel 6 modules

****Modules hosted by other departments. These are subject to availability.**

Code	Module Title	Core/ Compulsory/ Elective	Group	Term	Credits
BIOE70057	MEng Molecular Bioengineering Individual Project	Compulsory	N/A	Autumn-Summer	35
BIOE70006	Advanced Chemical Sensors	Elective	C	Autumn	5
BIOE70008	Advanced physiological monitoring and data analysis	Elective	C	Autumn	5
BIOE70056	Advanced Biomaterials for Bioengineers	Elective	C	Autumn	5
BIOE70149	Nanotechnologies for Cancer Diagnosis and Cancer Therapy (not running in 2026-27)	Elective	C	Autumn	5
BIOE70020	Neuroscience	Elective	C	Autumn	5
BIOE70010	Principles of Biomedical Imaging	Elective	C	Autumn	5
BIOE70077	Reinforcement Learning for Bioengineers	Elective	C	Autumn	5
BIOE70078	Alternative Protein	Elective	C	Autumn	5
BIOE70007	Advanced Synthetic Biology	Elective	C	Spring	5
BIOE70003	Animal Locomotion and Bioinspired Robots (not running in 2026-27)	Elective	C	Spring	5
BIOE70150	Artificial Intelligence for Drug Discovery	Elective	C	Spring	5
BIOE70012	Biomimetics	Elective	C	Spring	5
BIOE70005	Cellular and Molecular Mechanotransduction	Elective	C	Spring	5
BIOE70022	Industrial Applications of Cellular Engineering L7	Elective	C	Spring	5
BIOE70035	Non-ionising Functional and Tissue Imaging	Elective	C	Spring	5
	Business for Professional Engineers and Scientists (BPES)Ŧ	Elective	D	Autumn	5
COMP70006	Computational Finance**	Elective	D	Autumn	5
BIOE70028	Medical Device Certification	Elective	D	Spring	5
BIOE70014	Medical Device Entrepreneurship	Elective	D	Autumn	5
				Credit Total	60

* ‘Group’ refers to module grouping (e.g. a group of electives from which one/two module(s) must be chosen).

** Modules hosted in other departments are subject to availability.

Progression and Classification

Progression

Year One
You must:

- Achieve a mark of at least 40% in each module. You may be compensated in modules up to the value of 15 ECTS across the entire programme, with a qualifying mark of at least 30%.

Year Two
You must:

- Achieve a mark of at least 40% in each module. You may be compensated in modules up to the value of 15 ECTS across the entire programme, with a qualifying mark of at least 30%.
- Achieve an overall aggregate mark of at least 60% to remain on the MEng pathway.
- If you achieve between 55% and 60% you may, at the discretion of the Director of Teaching, be allowed to remain on the MEng program subject to agreed module choices, provided a case is made.
- If you achieve an overall aggregate mark of less than 55% but satisfy all other requirements, you will be transferred to the programme (BEng Molecular Bioengineering H161). Module choices in the third year of this course must be agreed with the Director of Teaching and will not normally include modules outside the department of Bioengineering.

Year Three
You must:

- Achieve a mark of at least 40% in each level 6 module and 50% in each level 7 module. You may be compensated in modules up to the value of 15 ECTS across the entire programme, with a qualifying mark of at least 30% for level 6 modules and 40% for level 7 modules.
- <u>If you have previously transferred to the programme H161 (BEng Molecular Bioengineering), you will be eligible to transfer to the H160 (MEng Molecular Bioengineering) if you meet the following criteria:</u>

  Have a 2nd year aggregate mark at 55% or above

  AND

  Have achieved marks equivalent to a 2:1 at BEng level based on weightings of year 1, year 2 and year 3 at 7.5 : 35 : 57.5

  AND

  Have a 3rd year aggregate mark of 60 % or above

Students with accepted mitigating circumstances that impacted a significant proportion of year 2 and/or year 3 should refer to the department regulations for details of how these are normally taken into account.

Year Four
You must:

- Achieve a mark of at least 40% in each level 6 module and 50% in each level 7 module. You may be compensated in modules up to the value of 15 ECTS across the entire programme with a qualifying mark of at least 30% for level 6 modules and 40% for level 7 modules.

Classification

The marks from modules in each year contribute towards the final degree classification.

In order to be considered for an award, you must have achieved the minimum number of credits at the required levels prescribed for that award and met any programme specific requirements as set out in the Programme Specification.

Your classification will be determined through:

i) Aggregate Module marks for all modules
ii) Year Weightings

This is known as the Programme Overall Weighted Average.

For the MEng award, Year One is weighted at 7.5%, Year Two at 20% and Years Three and Four at 36.25%.
For the BEng award, Year One is weighted at 7.5%, Year Two at 35% and Year Three at 57.5%.

The university sets the class of undergraduate degree that may be awarded as follows:

i) First 70% or above for the average weighted module results

ii) Upper Second 60% or above for the average weighted module results

iii) Lower Second 50% or above for the average weighted module results

iv) Third 40% or above for the average weighted module results

Programme Specific Regulations

You must complete a Business based elective at level 6 or above to meet the learning outcomes set by the professional engineering bodies for accreditation. This can be achieved by selecting in year 4 a group D Module (BPES module, Medical Device Design and Entrepreneurship, Medical Device Certification or Computational Finance). If your choice of an iExplore module in year 3 was a BPES module, you are exempt from this requirement and can select another technical elective module from group C in year 4.

To allow you the greatest range of flexibility in technical elective options we also allow you to take some level 7 modules in year 3 and some level 6 modules in year 4 as detailed in the programme structure section of this document.

As an accredited degree, students on this programme are subject to the standards set by the UK Engineering Council in relation to compensation: a maximum of 15 ECTS credits can be compensated across the entire programme.

Supporting Information
The Programme Handbook is available at: www.imperial.ac.uk/bioengineering/admin/current-ug
The Module Handbook is available at: www.imperial.ac.uk/bioengineering/admin/current-ug/
Imperial's entry requirements for postgraduate programmes can be found at: www.imperial.ac.uk/study/apply/postgraduate-taught/entry-requirements/
Imperial's Quality & Enhancement Framework is available at: www.imperial.ac.uk/registry/proceduresandregulations/qualityassurance
Imperial's Academic and Examination Regulations can be found at: www.imperial.ac.uk/about/governance/academic-governance/regulations
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Imperial College London is regulated by the Office for Students (OfS) www.officeforstudents.org.uk/advice-and-guidance/the-register/
This document provides a definitive record of the main features of the programme and the learning outcomes that you may reasonably be expected to achieve and demonstrate if you take full advantage of the learning opportunities provided. This programme specification is primarily intended as a reference point for prospective and current students, academic and support staff involved in delivering the programme and enabling student development and achievement, for its assessment by internal and external examiners, and in subsequent monitoring and review.