



Module Handbook

Incoming Students

Academic year 2024/2025

Part 2

Department of Engineering

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A: THE DEPARTMENT

The Department of Engineering covers the range of engineering disciplines within a single “Department”. The majority of the 800 students studying Engineering follow a 4-year undergraduate MEng degree programme often described as “General Engineering”. This has a common first two years with progressive specialisation into streams at Level 3 and Level 4. The Department is consistently ranked among the top in the UK. In 2024 the Department was ranked 5th by the Complete University Guide for multiple discipline-specific rankings and 5th for student satisfaction by the Guardian University Guide.

The Department is located on the University's Science Site, within easy reach of the city centre and all the Durham colleges. Lectures take place within the Department and in lecture theatres across the Science Site.

A1: Exchange Coordinator

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B: DEGREE PROGRAMMES OFFERED

The Department offers undergraduate MEng (4 year) and BEng (3 year) programmes with the majority of students following the MEng programme.

B1: Degree Structure

All students at Durham take a total of 120 module credits in a year, these generally span across all three terms (October-June). Usually the majority of teaching takes place in terms 1 and 2 (Michaelmas and Epiphany) with exams in term 3 (Easter). Exchange students therefore need to be in Durham from October to June if they wish to complete any lecture modules.

The modules available to students studying Engineering are closely prescribed. At Level 3 students select one of the four streams (Civil, Electrical, Electronic and Mechanical) and this determines the modules that they will study. At Level 4 there are seven streams (Aeronautical, Bioengineering, Civil, Electrical, Electronics, Mechanical and Renewable Energy) with some choice of modules within some streams. Level 4 students do a major individual project which typically counts for either 40 or 60 module credits. Exchange students are not constrained on their choice of modules in the same way as Durham Engineering students however timetabling classes may limit some module combinations (note that the online timetable checker does not capture all of the scheduled activities for Engineers).

C: REQUIREMENTS AND RESTRICTIONS

This section contains important information for setting up your academic programme at Durham University. Please read through this section carefully before considering your modules and filling in the Learning Agreement!

C1: General

Choice of Modules

IMPORTANT NOTE FOR STUDENTS: PLEASE READ BEFORE COMPLETING YOUR LEARNING AGREEMENT

At Durham University Exchange agreements are signed by individual university departments and are not university-wide agreements. This means that, in general, students will have to choose modules (courses) within the Durham University department through which the Exchange agreement with their home university has been signed (students should check with the Exchange Coordinator in their university if they are not sure which department this is). Students studying Engineering at Durham will not generally be able to take modules from outside of the standard streams (ie: from other departments) due to timetable constraints.

Please note:

- i. Due to limitations within the Department the **following modules are not available to incoming exchange students**: ENGI 2201 Engineering Design 2 and ENGI 3351 Engineering Design 3.
- ii. To enable allocation of an appropriately qualified Project Supervisor, incoming exchange students wishing to undertake an individual Research and Development Project (e.g. ENGI 3262 BEng Engineering Project, ENGI 4093 MEng Research & Development Project, ENGI 4112 MEng Technical Report) are required to contact engineering.landt@durham.ac.uk providing a detailed draft research proposal by no later than **30 June 2024**. Students undertaking an individual Research and Development Project will work under the direction of a member of academic staff, often within one of the Department's research laboratories.

Coursework for ENGI 3301 Structures and Geomatics 3 and ENGI 3371 Electrical Engineering 3 is comprises Practical Training which is completed in June 2024. ENGI 3301 Structures and Geomatics 3 and ENGI 3371 Electrical Engineering 3 are available on a 70% basis only, assessment of the 70 is by examination assessment.

- iii. ENGI 4321 Engineering into Schools is administered by Faculty. The module requires DBS Clearance, unfortunately for this reason ENGI 4321 is not available to Exchange Students.

Please clearly indicate the modules you wish to take on your Learning Agreement (included in your application package) for approval by the respective department(s). Before completing your Learning Agreement, it is very important that you read carefully the relevant departmental section(s) of the Module Handbook to check which modules are available to you and any restrictions which may apply. It is imperative that a properly completed Learning Agreement is submitted as part of the application form. Only complete applications can be processed.

Section *D: Module Details* provides a list of modules available for Exchange students in the department. Please choose from these modules only!

D: MODULE DETAILS

D1 Modules available to Exchange students coming on a departmental link:

At Level 1, 2 and 3 single modules equate to 20 module credits, this is equivalent to 10 ECTS credits. Modules will often contain multiple (most often 2) lecture courses, assessments typically takes place via a combination of exam and coursework.

The following Level 1 modules are available:

ENGI 1091 Solid Mechanics and Structures 1 (20 credits)
ENGI 1111 Thermodynamics and Fluid Mechanics 1 (20 credits)
ENGI 1151 Computational Tools for Engineers and Scientists 1 (20 credits)
ENGI 1161 Electronics and Electrical Systems 1 (20 credits)

The following Level 2 modules are available:

ENGI 2181 Electronics 2 (20 credits)
ENGI 2191 Electrical Engineering 2 (20 credits)
ENGI 2211 Engineering Mathematics 2 (20 credits)
ENGI 2221 Solid Mechanics and Structures 2 (20 credits)
ENGI 2231 Thermodynamics and Fluid Mechanics 2 (20 credits)

At Level 3, modules are available across four streams:

- Civil
- Electrical
- Electronic
- Mechanical

The following L3 modules are available:

ENGI 3291 Thermodynamics and Fluid Mechanics 3
ENGI 3301 Structures and Geomatics 3 (see notes above)
ENGI 3311 Geotechnics 3
ENGI 3331 Semiconductor Physics and Devices 3
ENGI 3341 Environmental Engineering 3
ENGI 3371 Electrical Engineering 3 (see notes above)
ENGI 3391 Control and Signal Processing 3
ENGI 3341 Solid Mechanics 3
ENGI 3451 Electronics and Communications 3
ENGI 3471 Materials 3
ENGI 3481 Power Semiconductor Devices 3
ENGI 3491 Digital Electronics & Digital Signal Processing 3
ENGI 3262 BEng Engineering Project 3 **(to enable eligibility a draft research proposal must be received by 30 June 2024)**

The ENGI 3262 BEng Engineering Project module equates to 40 module credits, this is equivalent to 20 ECTS credits.

At Level 4, modules are available across seven streams:

- Aeronautical
- Bioengineering
- Civil
- Electrical
- Electronic
- Mechanical
- Renewable Energy

The following Level 4 modules are available:

ENGI 4093 MEng Research & Development Project **(60 credits) (to enable eligibility a draft research proposal must be received by 30 June 2024)**

ENGI 4112 MEng Technical Report **(40 credits) (to enable eligibility a draft research proposal must be received by 30 June 2024)**

ENGI 4337 Advanced Geotechnical Engineering 4

ENGI 4347 Planning and Contract Law 4

ENGI 4357 Structural Design 4

ENGI 4367 Transportation Infrastructure 4

ENGI 4377 Structures 4

ENGI 4387 Hydrology & Water Resources 4

ENGI 4397 Non-Linear Solid Mechanics 4

ENGI 4407 Aircraft Structures 4

ENGI 4417 Aeromechanics 4

ENGI 4427 Fluid Mechanics 4

ENGI 4437 Turbomachinery and Propulsion 4

ENGI 4447 Renewable Energy Technologies 4

ENGI 4457 Future Vehicles 4

ENGI 4467 Electrical Energy Conversion 4

ENGI 4477 Power Electronics 4

ENGI 4487 Smart Energy Networks 4

ENGI 4497 Decarbonisation of Heating & Cooling 4

ENGI 4507 Radio & Digital Communications 4

ENGI 4527 Communication Networks 4

ENGI 4537 Advanced Electronic Measurements 4

ENGI 4547 Advanced Electronics 4

ENGI 4557 Photonics 4

ENGI 4577 Optimisation 4

ENGI 4597 Environmental Engineering 4

ENGI 4607 Artificial Intelligence and Deep Learning 4

ENGI 4617 Artificial Organs 4

ENGI 4637 Physiological Fluid Mechanics 4

At Level 4 single modules equate to 10 module credits, this is equivalent to 5 ECTS credits. Some modules will contain multiple (most often 2) lecture courses, others comprise a single lecture course. Assessments for these modules is either by coursework or exam.

The ENGI 4112 MEng Engineering Technical Project module equates to 40 module credits, this is equivalent to 20 ECTS credits. The ENGI 4093 MEng Research and Development Project module equates to 60 module credits, this is equivalent to 30 ECTS credits. **To enable eligibility for ENGI 4112 and/or ENGI 4093 a draft research proposal must be received by 30 June 2024)**

More detailed information, including links to individual modules, is available online in the Faculty Handbook:

MEng:

<https://www.dur.ac.uk/resources/faculty.handbook/degrees/frameworks/h100.pdf>

BEng:

<https://www.dur.ac.uk/resources/faculty.handbook/degrees/frameworks/h103.pdf>

D1 Modules available to Exchange students coming on an external link (through a different department)

It is unusual for non-engineering students to take modules from within Engineering as this is not normally practical within the timetable. To note, all Engineering modules require prior learning of Engineering concepts and principles. Students from other programmes wishing to take Engineering modules are required to contact engineering.landt@durham.ac.uk in advance of making their module selections.