Engineering Programme Briefing – DN150

Thursday, 05 September, 9am

Programme Director:

Dr Neal Murphy

neal.murphy@ucd.ie

ACADEMIC

VIRTUAL

SOCIAL

UCD PEER MENTOR

Other Important College Contacts

Dean of Engineering, College Principal

Professor Aoife Ahern

College of Engineering & Architecture Office

Director
Ms Sue Philpott

Senior Programme and Operations Manager
Ms Debra Heeney

Student Advisor
Dr Julia Maher

UCD Engineering & Architecture College Office Team

Ms Sue Philpott	College Office Director
Ms Debra Heeney	Senior Programme & Operations Manager
Ms Shelly Smith	Programme Manager
Mr Daniel Earls	Programme Manager
Ms Carolyne Dillon	Senior Programme Administrator
Ms Janine Smart	Senior Programme Administrator
Ms Catherine Bodey	Senior Programme Administrator

See:
https://www.ucd.ie/eacollege/contact/collegeadministration/

How to contact the College Office Team

2024/2025 Opening Hours:

- **Office Hours** are 10am to 1pm and from 1.30pm until 4pm, Monday to Thursday for:

    - **drop in** quick queries
    - pre booked **face-to-face meetings**
    - We can also have meetings online via Zoom.

- **Email contact office hours** are:
- 8.30am - 4.30pm, Monday to Friday.

Contacting the College Office Team continued..

Contact us via the Connector: https://www.ucd.ie/eacollege/connector/

UCD Eng Arch Office Student Connector

Please provide the information as requested below and your query will be submitted directly to the UCD Engineering & Architecture Office.

You'll receive an email confirmation including details of when you can expect a reply.

Which of the following are you? *

[dropdown]

[Next Page]

We are also happy to arrange meetings online via Zoom.

UCD New Students Website

Use this website to find really useful information such as:

- Brightspace Module: Introduction to UCD
- Welcome to UCD Guide
- How-to Guide Videos
- Orientation Timetables

https://www.ucd.ie/newstudents/

Dedicated Incoming Stage One Engineering Website:

https://www.ucd.ie/eacollege/currentstudents/informationforincomingfirstyears/

Important Dates!

Fee Payment deadline (first installment):
Sunday 08 September

First day of lectures:
Monday, 09 September

Online Registration <u>closes:</u> Friday, 20 SEPT

*Any Autumn trimester modules dropped after that date will be <u>subject to fees</u> and will appear on your academic record.

Stage 1 Autumn Trimester Engineering DN150 2024-25 Academic Year

- **Labs/Tutorials pre-selected for Autumn (you will be automatically registered to your Labs & Tutorials on Monday 9th).**

- **You will need to refresh your personal timetable on Monday or Tuesday to include your Labs & Tutorials.**

NO ELECTIVES IN AUTUMN.

Autumn Trimester

Trimester	Module Code
Autumn	CHEM10030
Autumn	CVEN10040
Autumn	EEEN10010
Autumn	MATH10250
Autumn	CHEN10040
Autumn	PHYC10150

Timetable

Set up as follows:

Weekly on campus lectures **BUT lecture timetables can vary from week to week!**

Make sure to check your timetable in SISWeb before you commence your studies.

Keep an eye on your UCD Connect email for updates!

Assessment

Final Exam in 5 modules:

- CHEN10040 - Intro. to Eng. Computing (worth 50%)
- CHEM10030 - Chemistry for Engineers (worth 60%)
- PHYC10150 - Physics for Eng. 1 (worth 60%)
- EEEN10010 - Electronic & Elec. Eng. 1 (worth 65%)
- MATH10250 - Intro. To Calculus for Eng. (worth 70%)

All modules have a substantial amount of Continuous Assessment spread over the the trimester (Design Projects, Lab Reports, Computer Programs, MCQ Quizzes, etc.)

Assessment Continued….

Continuous Assessment:

Takes place in all modules over the Trimester,
eg. MCQ's; in-class tests/quizzes; lab practicals, open book

Exams at end of Autumn Trimester:

Revision week: **30 November - 06 December**

Most modules use **2-hour examinations**

- Exams take place: **07 December to 21 December inclusive**

Exams at end of Spring Trimester:

- Fieldwork/Study period: **10 March to 23 March**

- Revision week: **26 April to 02 May**

- Exams take place: **03 May to 17 May**

Stage 1 Spring Trimester Engineering DN150 2024-25 Academic Year

Spring	MATH 10260	Linear Algebra for Engineers
Spring	**PHYC 10160**	Physics for Engineers II
Spring	MEEN 10050	Energy Engineering
Spring	MEEN 10030	Mechanics for Engineers

Spring	EEEN 10050	Introduction to Biomedical Engineering
Spring	CHEN 10010	Chem Eng Proc Principles
Spring	CVEN 10060	Engineering and Architecture of Structures
Spring	COMP 10060	Computer Sci for Engineers I

One free Elective (taken from within or outside Engineering).

Remember!

Practicals / Tutorials: You need to register to the associated practical/tutorial sessions to suit your timetable.

Selecting Option Modules

Option Module	What will be covered?	Who should take this?
EEEN 10050 Introduction to Biomedical Engineering	This module will introduce students to the subject area of biomedical engineering and the basic principles of physiology, biomechanics, medical devices, tissue engineering, biomedical sensors, electrophysiology and clinical engineering.	Strongly recommended for student's heading towards **Biomedical Engineering.**
CHEN 10010 Chemical Engineering Process Principle	This module introduces the principles and techniques that are used in the analysis of chemical and biochemical engineering processes.	Strongly recommended for student's heading towards **Chemical & Bioprocess Engineering.**
COMP 10060 Computer Science for Engineers I	This module provides students with a formal and structured introduction to computer programming using the C programming language, which underpins the Windows, Linux and MacOS operating systems in addition to a wide range of embedded systems in everyday products.	Strongly recommended for students heading towards **Mechanical, Electrical & Electronic Engineering** - useful for all Engineering students.
CVEN 10060 Engineering and Architecture of Structures	This module provides students with a core understanding of what makes buildings, and other structures, stand up. Engineering and Architecture students will work in together in groups to explore these issues.	Strongly recommended for student heading towards **Civil Engineering** or **Structural Engineering with Architecture.**

Select one Elective
OR
ADDITIONAL OPTION per below

Trimester	Module Code	Module Title	Credits
Spring	BMOL10030	Understanding Human Disease	5 Credits
Spring	BSEN10010	Biosys Eng Design Challenge	5 Credits
Spring	BSEN10020	How Sustainable is my Food?	5 Credits
Spring	CHEN10010	Chem Eng Proc Principles	5 Credits
Spring	CVEN10050	Introduction to Civil and Environmental Engineering	5 Credits
Spring	CVEN10060	Engineering and Architecture of Structures	5 Credits
Spring	COMP10060	Computer Sci for Engineers I	5 Credits
Spring	DSCY10060	Energy, Climate & Policy	5 Credits
Spring	DSCY10070	Materials in Society	5 Credits
Spring	EEEN10020	Robotics Design Project	5 Credits

Creativity in Design Module materials needed for First Lecture

Individual Requirements

- Creativity kit, excluding object for film production in <mark>**LIBRARY Union Shop**</mark>, excluding object for sketch study
- Drawing Pad – A3 Cartridge (pages approx. 115 g/m^2 but not less than 100g/m^2)
- A5 Sketch Book (pages approx. 100 g/m^2)
- Pencils – B, 2B
- Pencil sharpener
- Set square – 30°/60° 300mm side with mm gradation measurement
- Eraser
- Non-permanent marker (med. black)
- A small-ish inorganic object for sketch study (e.g. corkscrew, tin-opener, pepper mill, small hand tool, scissors)

Creativity in Design Module Group requirements

- **<u>Additionally, for your Group work, the following equipment may be helpful for prototype creation* and can be purchased from the <mark>LIBRARY SU Shop for €45.</mark></u>**
- *This list is not exhaustive, and some items may be replaced with other common household items
- Coloured markers – pack of 5 Faber Castell, Staedtler or Sharpie fine nib
- Plasticine – One 500g pack variety of colours
- Coloured A4 Card – $250g/m^2$ variety of colours (5 colours, 10 sheets of each colour)
- Post-it blocks – pack 5 colours, small square (76mmx76m)
- Post-it blocks – pack 5 colours, rectangular (76mmx127mm)
- Scissors - 1 stainless steel
- Masking tape – 1 roll
- Stapler (1) and staples
- Rainbow craft sticks – small sticks pack of 100, large sticks pack of 50

Recommended Specifications for Engineering Student Laptops

See:

https://www.ucd.ie/eacollege/currentstudents/informationforincomingfirstyears/dn150stage1engineeringprogrammeinformation/recommendedspecificationsforengineeringstudentlaptops/

Should I buy a new laptop? Not yet!!

If you have an existing laptop or can use an existing laptop for a minimum of 30 hours per week it will probably be fine for the modules in Stage 1. Start using what you have and upgrade later if necessary, that way you have a better laptop later in the programme, when you need it most.

For stage 1 students some modules may have components which are online. Some of these will be pre-recorded and can be watched in your own time. For others you will be expected to join a class, tutorial or practical online at a specific time therefore having a working laptop will make this easier for you. Most laptops will suffice for your first year. In stage 1 the software you will use is available free online or through UCD and consists of:

- Excel/Word MS Office (Available through UCD Connect)
- Antivirus (Available through UCD Connect)
- Python/Matlab (Available through UCD Connect)
- Video Conferencing software e.g. zoom(Available online)
- Web Browser (Chrome/edge) (Available online)

It is recommended that your laptop has:

- Camera
- Microphone
- WiFi
- Speakers/headphone connectivity

Can I use a tablet?

No, not as your primary IT device. It will take longer to carry out assignments using a tablet.

MODULE LEVELS

LEVEL	SUMMARY DESCRIPTION
0	Foundation/Access
1	**Introductory (e.g........)**
2	Intermediate
3	Degree
4	Masters
5	Doctoral

CREDITS & WORKLOAD

- The **CREDIT** is a unit of currency, part of the **European Credit Transfer System** (ECTS), which is designed to allow movement of students between European Universities.

- Each 5-credit module corresponds to about **100-125 hours of student effort** (including attendance at lectures, tutorials, practical work, and time spent on assignments, study, examinations, etc.)

- Taking six 5-credit modules over a 15 week trimester (12 weeks teaching, 1 week revision, 2 weeks exams) implies an **average of 40 to 50 hours per week** – of overall student effort.

Essential Advice!

- **Attend** Lectures & Tutorials.

- **Aim for an 'A'** in Lab Reports & Assignments.

- **Be Organized** – have a plan & stick to it.

- **Download** recent Exam Papers
  & use these as a study guide.

REMEMBER!

You <u>MUST PASS every module</u>!

Resit Exam in Autumn, Spring or Summer – check Module Descriptor!

Module Grades

MODULE GRADES		
MODULE GRADE	**GRADE POINT**	**DESCRIPTION**
A+	4.2	**Excellent**
A	4.0	
A-	3.8	
B+	3.6	**Very good**
B	3.4	
B-	3.2	
C+	3.0	**Good**
C	2.8	
C-	2.6	
D+	2.4	**Acceptable**
D	2.2	
D-	2.0	
FM+	0.0	**Fail**
FM	0.0	
FM-	0.0	
NM	0.0	No grade - work submitted did not merit a grade
ABS	0.0	No work was submitted by the student or the student was absent from assessment

GRADE POINT AVERAGE (GPA)

- At the end of a Stage, all the grade points are averaged to get a **Grade Point Average**.

"Honours" Grades for a Degree

Degree "Honours" classification is based on weighted calculation:

Weighted by a factor of 7 for the final Stage and weighted by a factor of 3 for the penultimate Stage.

However, your performance in all Stages is important for progression and your overall degree GPA!

"Honours" Grades for a Degree

GPA	AWARD
> 3.68	First Class honours
3.08 to 3.67	Second Class Honours, Grade 1
2.48 to 3.07	Second Class Honours, Grade 2
2.00 to 2.47	Pass

Becoming a Chartered Engineer
(C.Eng)

1. Complete a degree programme which is accredited by *Engineers Ireland**, and

2. Have a minimum of four years postgraduate training and engineering experience.

   * Graduates of accredited programmes are recognised in 29 European countries and are accepted as equivalent by professional bodies in Australia, Canada, Hong Kong, Japan, New Zealand, South Africa, UK and USA.

Chartered Engineers of the Future

The registered professional title of Chartered Engineer is recognised internationally.

"Engineers Ireland" regulations:

Engineers graduating from 2013 onwards will need a 5-year accredited Master degree (or equivalent).

UCD Engineering Degree Programmes

4-Year BE Degree

5-Year BSc + ME Degrees (with specialisations)

Graduate with BSc (Engineering Science) + ME (Master of Engineering) degrees.

Accredited professional engineering qualification.

5-Year BE + ME

Graduate with BE + ME Chemical & Bioprocess Engineering

5-Year BSc + ME (Structural Engineering with Architecture)

Graduate with BSc (Engineering Science) +
ME (Master of Engineering) degrees.

- Accredited Professional Engineering qualification.

Engineering Pathways to BE / ME

Year 1 — **Stage 1 Engineering (Common) - Core Modules**

Physics	Chemistry	Mathematics

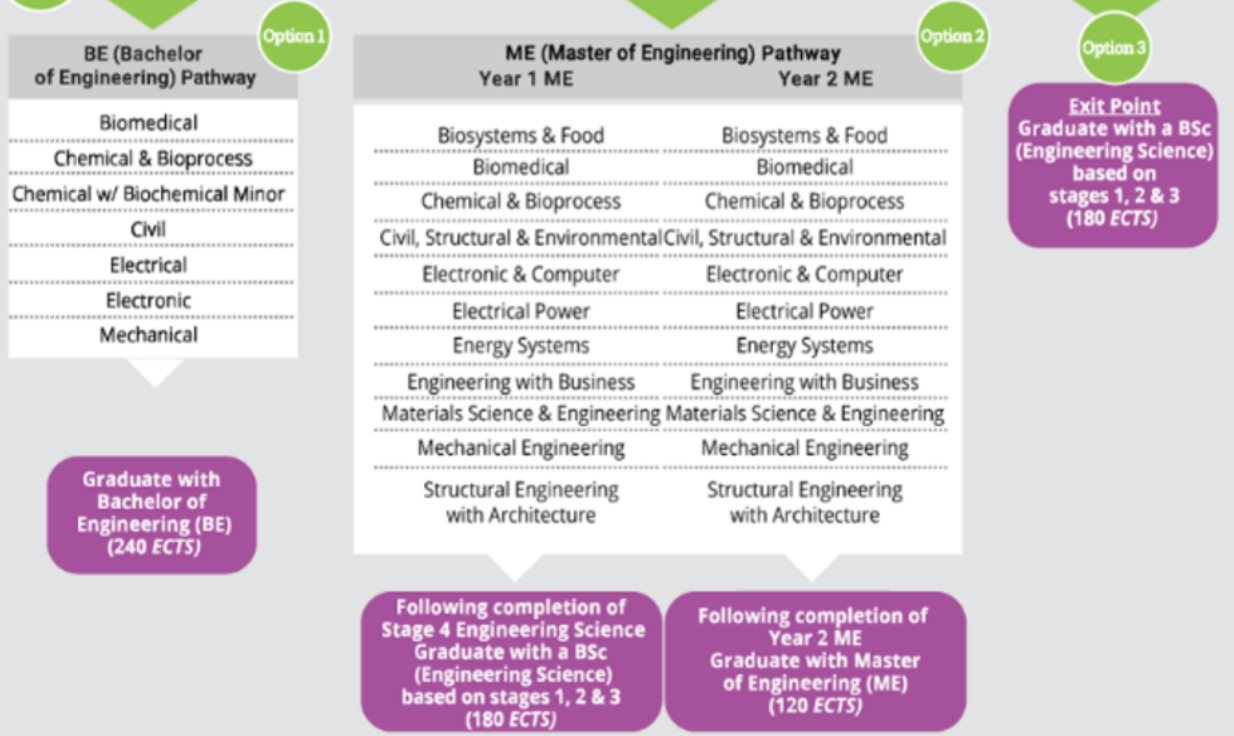| Energy Engineering	Mechanics	Electrical/Electronic	Creativity in Design	Engineering Computing

Years 2 & 3 — **Stage 2 & 3 Engineering - Programme Majors**

Biomedical	Chemical & Bioprocess	Civil	Electrical/Electronic	Mechanical	Structural Engineering with Architecture

Years 4 & 5 — **Decision Point**

Option 1

BE (Bachelor of Engineering) Pathway

- Biomedical
- Chemical & Bioprocess
- Chemical w/ Biochemical Minor
- Civil
- Electrical
- Electronic
- Mechanical

Graduate with Bachelor of Engineering (BE) (240 ECTS)

Option 2

ME (Master of Engineering) Pathway

Year 1 ME	Year 2 ME
Biosystems & Food	Biosystems & Food
Biomedical	Biomedical
Chemical & Bioprocess	Chemical & Bioprocess
Civil, Structural & Environmental	Civil, Structural & Environmental
Electronic & Computer	Electronic & Computer
Electrical Power	Electrical Power
Energy Systems	Energy Systems
Engineering with Business	Engineering with Business
Materials Science & Engineering	Materials Science & Engineering
Mechanical Engineering	Mechanical Engineering
Structural Engineering with Architecture	Structural Engineering with Architecture

Following completion of Stage 4 Engineering Science Graduate with a BSc (Engineering Science) based on stages 1, 2 & 3 (180 ECTS)

Following completion of Year 2 ME Graduate with Master of Engineering (ME) (120 ECTS)

Option 3

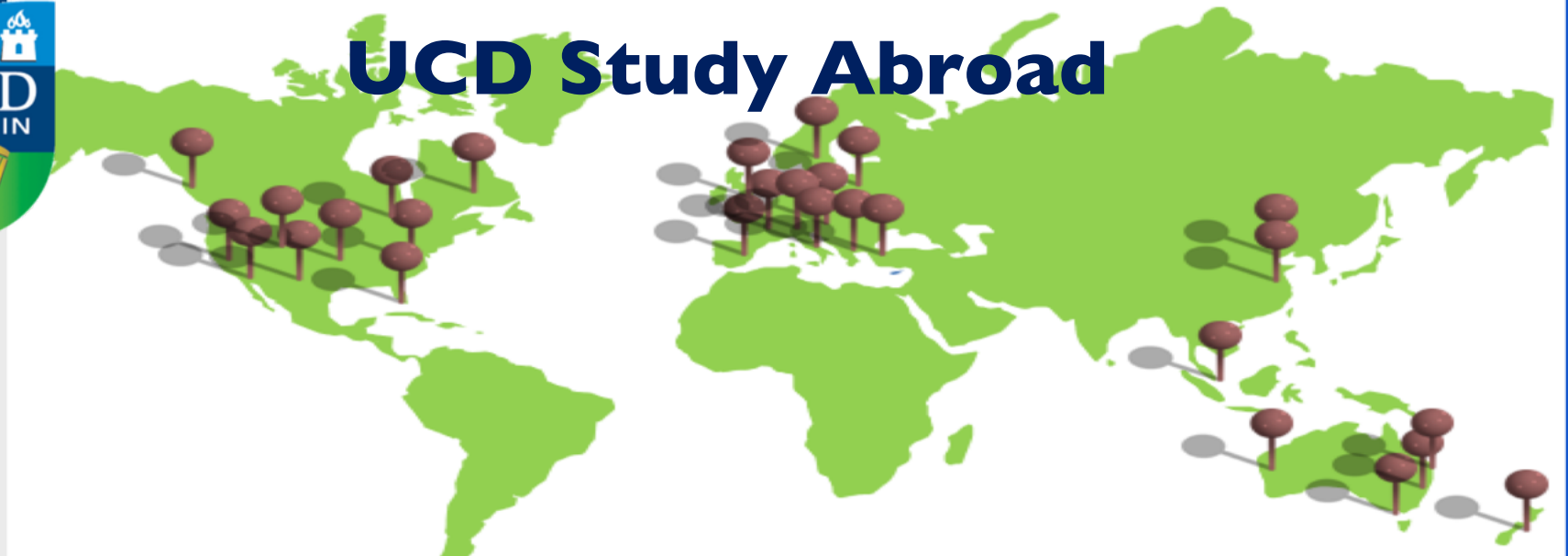**Exit Point Graduate with a BSc (Engineering Science) based on stages 1, 2 & 3 (180 ECTS)**

BE Degrees Available (for 2024 entrants)

- Biomedical Engineering

  Chemical and Bioprocess Engineering

  Civil Engineering

  Electrical Engineering

  Electronic Engineering

  Mechanical Engineering

UCD Study Abroad

Exchange Opportunities

Available – Depending on Programme	Requirements for Engineering Stage 1
Engineering – Stage 3 **For one trimester or full year**	**Complete Stage 1 with a minimum GPA of 3.00** **Earn 30 credits in Autumn Trimester of Stage 2 with minimum GPA of 3.00** **No grade less than C- in any core module**

Study Abroad

Arranged through UCD Global www.ucd.ie/global

Watch for information sessions this autumn

Erasmus exchange to a university in another European country

- So most lectures will be in the local language!
- recent exchanges to Paris, Lyon, Stuttgart

Non-EU exchange

- to a university outside Europe
- to USA, Canada, China, Singapore, Australia, New Zealand

The full details of the Exchange Rules can be found at:

https://www.ucd.ie/eacollege/study/engineeringinternationalprogrammes/

ME Degrees Available (for 2024 entrants)

Biomedical Engineering

Biosystems & Food Engineering

Chemical & Bioprocess

Civil, Structural & Environmental Engineering

Electrical Power Engineering

Electronic and Computer Engineering

Energy Systems Engineering

Engineering with Business

Materials Science Engineering

Mechanical Engineering

Structural Engineering with Architecture

Which Discipline Should I Choose?

- We will run **Information Sessions** later in the Autumn Trimester

  Introduction to the disciplines and course overviews

  Speakers (UCD Engineering Graduates) will describe their careers

  More sessions in the Spring Trimester - more details about the courses & you will meet a selection of students to tell you the 'Real Story'!

Introduction to UCD Library
https://libguides.ucd.ie/newstudents

Introduction to the Student Desk

https://www.ucd.ie/students/studentdesk/

New Students →	Registration →	Fees & Grants →	Frequently Asked Questions →
Freshers Guide →	Exams & Assessments →	Official Documents →	Admissions →

Communications

- **UCD Connect email** is the primary channel for official UCD communications. You will have received information regarding your email account when offered your place in UCD.

- It is the **responsibility** of each student to regularly check their **UCD Connect email** account.

- When setting up your Mail Accounts; **CHANGE YOUR PASSWORD TO SOMETHING MORE SECURE.**

- In email exchanges, always include your student ID otherwise it can delay your query!

Thank You for Your Attention!

- **Contact Details:** Dr Neal Murphy (Programme Director)

- **Office:** Room 313
  Eng & Materials Science Centre

- **Email:** neal.murphy@ucd.ie

Trust me I'm an Engineer!