UCD Engineering
Electronic & Electrical Engineering

Welcome for Stage 2 Students
September 2024
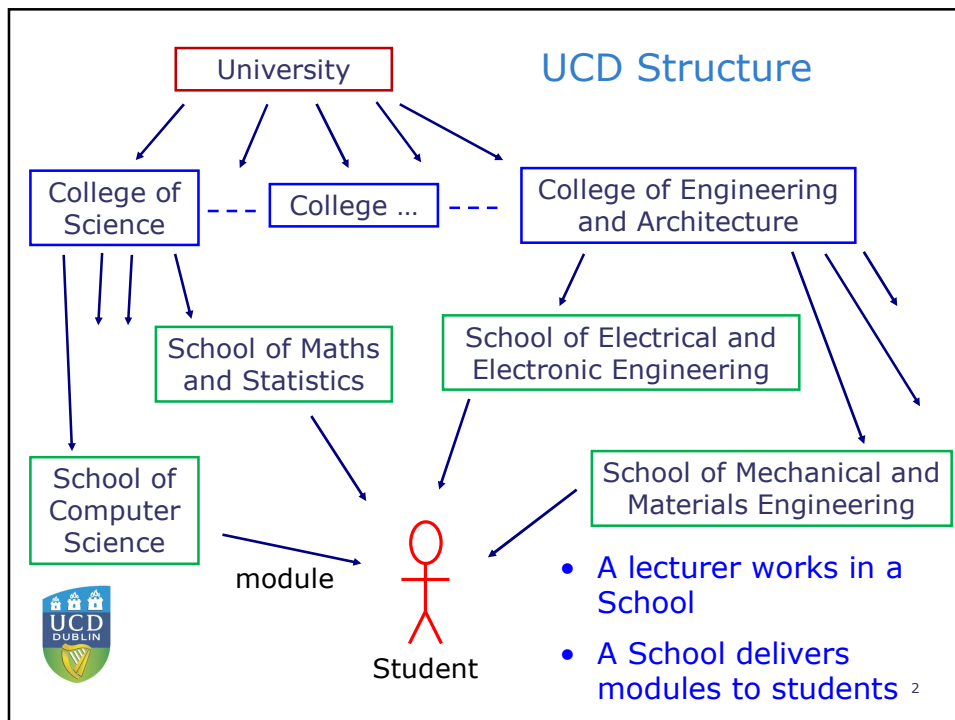
Brian Mulkeen

Programme Director
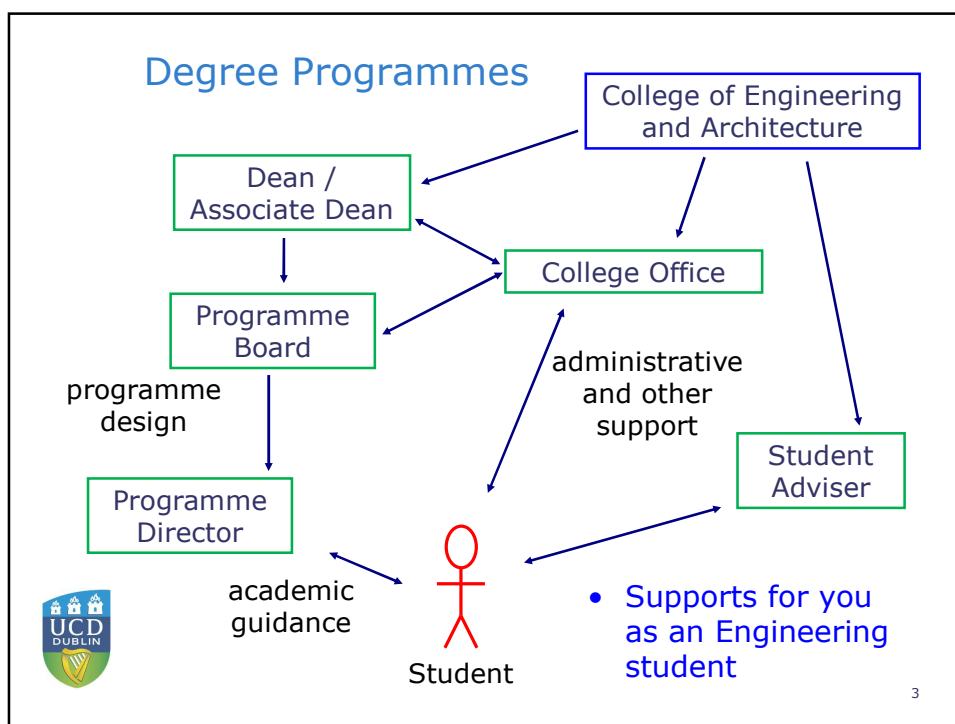
UCD School of Electrical and Electronic Engineering

Scoil na hInnealtóireachta Leictrí agus Leictreonaí UCD

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University

UCD Structure

College of Science

College …

College of Engineering and Architecture

School of Maths and Statistics

School of Electrical and Electronic Engineering

School of Mechanical and Materials Engineering

School of Computer Science

module

Student

- A lecturer works in a School
- A School delivers modules to students

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Degree Programmes

College of Engineering and Architecture

Dean / Associate Dean

College Office

Programme Board

programme design

administrative and other support

Student Adviser

Programme Director

academic guidance

Student

- Supports for you as an Engineering student

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UCD Engineering & Architecture College Office

Room 122, Engineering and Materials Science Centre

Ms Sue Philpott
College Office Director

Ms Debra Heeney
Programme and Operations Manager - Engineering

Ms Shelly Smith
Programme Manager

Ms Carolyne Dillon

Ms Niamh Fitzgerald

Ms Claudia Schmid
College Office Team

Use the **Student Connector** for fastest response:
www.ucd.ie/engineer
      - follow the link...

WELCOME TO
UCD
IRELAND'S GLOBAL UNIVERSITY

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Names and Faces

- ## College of Engineering and Architecture
  - College Principal: Professor Aoife Ahern
    - also has the role of Dean of Engineering

  - Associate Dean for Engineering:
    Professor James O'Donnell

- ## Student Adviser
  - Julia Maher   Julia.Maher@ucd.ie
  - room 130A in Engineering

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Names and Faces

- ## School of Electrical and Electronic Engineering
  - responsible for all EEEN modules
  - head of school: Professor Paul Curran

- ## Programme Director, Electrical Engineering
  - Stage 4 of BE Electrical, ME Electrical Power
  - Professor Damian Flynn
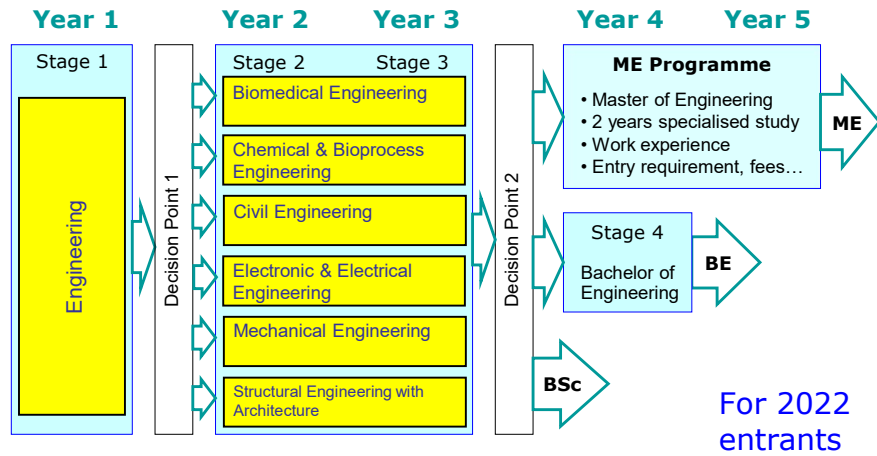
- ## Programme Director, BE Electrical/Electronic
  - Brian Mulkeen   brian.mulkeen@ucd.ie
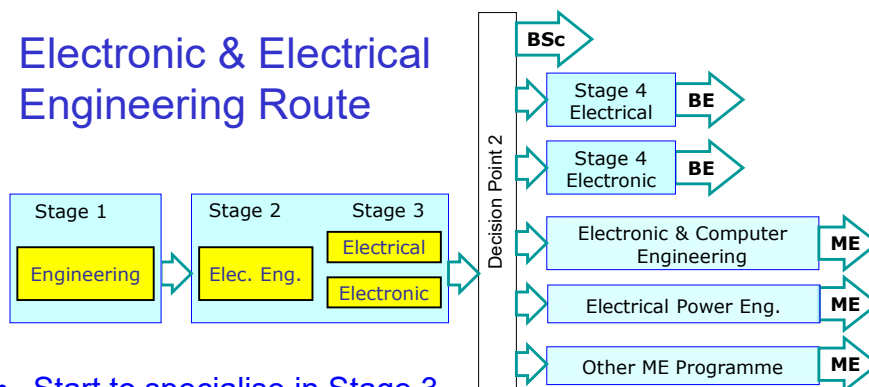 - Engineering, room 332

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UCD Engineering Pathways – DN150

Year 1 **Year 2** **Year 3** **Year 4** **Year 5**

Stage 1

Engineering

Decision Point 1

Stage 2   Stage 3
- Biomedical Engineering
- Chemical & Bioprocess Engineering
- Civil Engineering
- Electronic & Electrical Engineering
- Mechanical Engineering
- Structural Engineering with Architecture

Decision Point 2

ME Programme
- Master of Engineering
- 2 years specialised study
- Work experience
- Entry requirement, fees…

ME

Stage 4
Bachelor of Engineering

BE

BSc

For 2022 entrants

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Electronic & Electrical Engineering Route

BSc

Decision Point 2

Stage 4 Electrical **BE**

Stage 4 Electronic **BE**

Electronic & Computer Engineering **ME**

Electrical Power Eng. **ME**

Other ME Programme **ME**

Stage 1

Engineering

Stage 2   Stage 3

Elec. Eng.

Electrical

Electronic

- **Start to specialise in Stage 3**
  - choose options relevant to electrical or electronic engineering
- **At end of stage 3, choose:**
  - progress to stage 4 of BE in Electrical Engineering
  - progress to stage 4 of BE in Electronic Engineering
  - graduate with BSc (Engineering Science)
  - or, if eligible, enter ME programme in area of interest…
    - need GPA $\geq$ 2.8 (stages 2 & 3, weighted by factors 3 and 7) 8

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Stage 2 Core Modules

- Foundations of electrical & electronic engineering
- Autumn trimester
  - EEEN20010   Computer Engineering
  - EEEN20020   Electrical and Electronic Circuits
  - EEEN20050   Digital Electronics
  - EEEN20070   Solid-State Devices
  - MATH20290   Multivariable Calculus for Engineers
- Spring trimester
  - EEEN20030   Electromagnetic Fields
  - EEEN20040   Electronic Circuits
  - EEEN20060   Communication Systems
  - EEEN20090   Electrical Energy Systems
  - STAT20060   Statistics and Probability
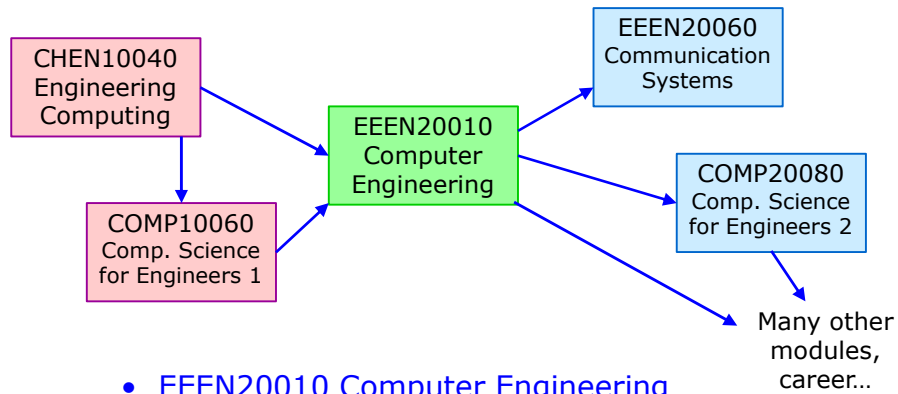
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Stage 2 Elective Modules

- Choose one in each trimester, to balance load
  - subject to prerequisites and timetable clashes
- Some relevant modules that fit your timetable:
  - COMP20200   UNIX Programming (spring)
  - IA20010   Creative Thinking and Innovation (autumn and spring, in blocks)
  - MEEN20030   Applied Dynamics I (spring)
  - SCI20020   Introduction to Project Management and Leadership (autumn only, some clashes)

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Module Details – Autumn Modules

CHEN10040
Engineering
Computing

COMP10060
Comp. Science
for Engineers 1

EEEN20010
Computer
Engineering

EEEN20060
Communication
Systems

COMP20080
Comp. Science
for Engineers 2

Many other
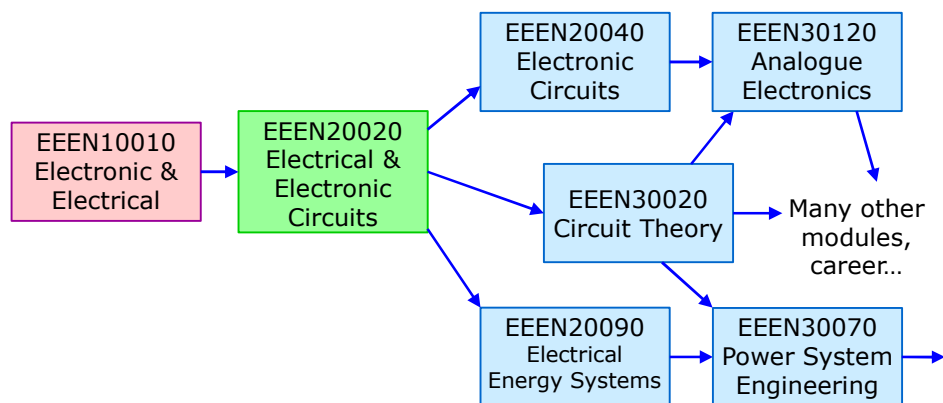modules,
career…

- EEEN20010 Computer Engineering
  - programming in C
  - lab: one 2-hour session each week (from week 2)
    - 2 offerings: Thursday 15:00 – bring your own laptop
      Friday 15:00 – desktop computers available

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Module Details - Autumn Modules

EEEN10010
Electronic &
Electrical

EEEN20020
Electrical &
Electronic
Circuits

EEEN20040
Electronic
Circuits

EEEN30120
Analogue
Electronics

EEEN30020
Circuit Theory

Many other
modules,
career…

EEEN20090
Electrical
Energy Systems

EEEN30070
Power System
Engineering
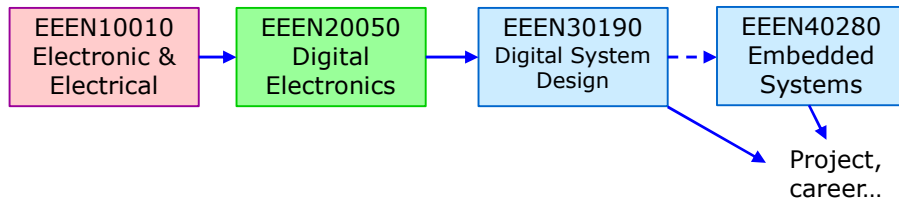
- EEEN20020 Electrical & Electronic Circuits
  - key concepts in electrical circuits, foundation for many things, also some electronics: amplifiers etc.
  - 3 lab sessions and 3 tutorials during the trimester

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Module Details - Autumn Modules

| EEEN10010 Electronic & Electrical | → | EEEN20050 Digital Electronics | → | EEEN30190 Digital System Design | --→ | EEEN40280 Embedded Systems |

Project, career…
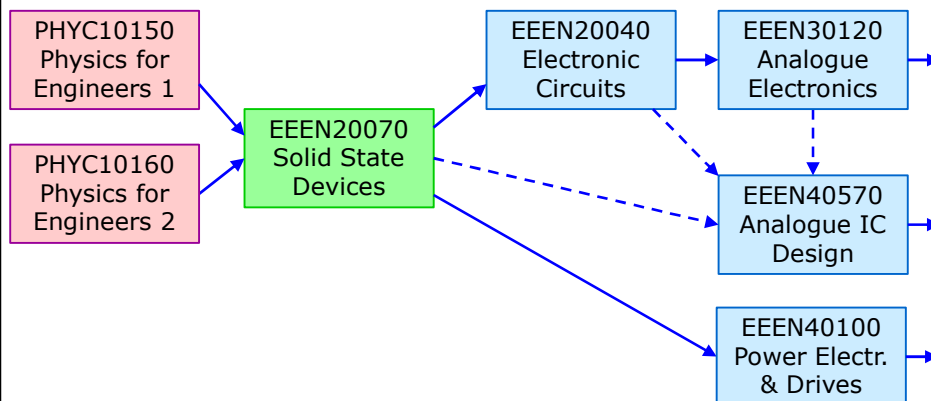
- EEEN20050 Digital Electronics
  - foundation for digital systems, computer hardware…
  - tutorials in weeks 1 and 2, Wednesday 9-11
  - lab from week 3, Wednesday 9-11

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Module Details - Autumn Modules

PHYC10150 Physics for Engineers 1

PHYC10160 Physics for Engineers 2

EEEN20070 Solid State Devices

EEEN20040 Electronic Circuits

EEEN30120 Analogue Electronics

EEEN40570 Analogue IC Design

EEEN40100 Power Electr. & Drives

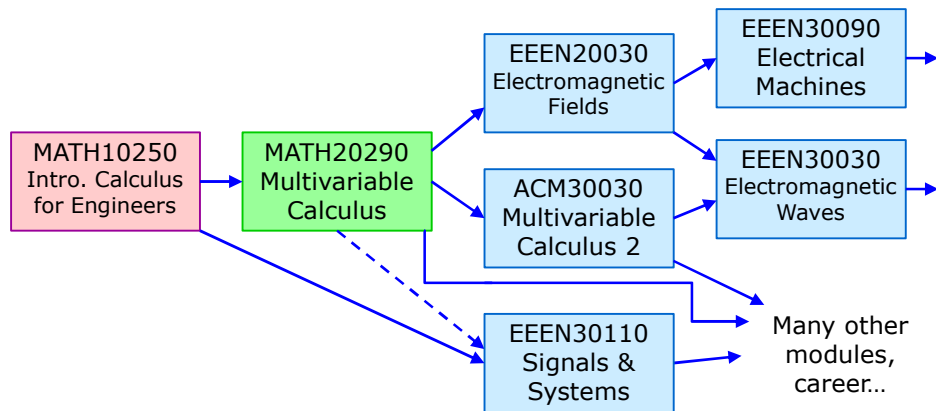- EEEN20070 Solid State Devices
  - devices like diodes, transistors
  - how are they made, how do they work internally…

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Module Details - Autumn Modules

- **MATH20290 Multivariable Calculus for Engineers**
  - calculus with more than one variable
  - important techniques for many engineering problems

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Assessment - Autumn Modules

Module	Exam at end of trimester	Quiz or Test	Lab, Assignment or Homework
EEEN20010	60%		Lab assignments 40%
EEEN20020	40% *	week 6, 20% *	3 labs 20%, homework assignments 20%
EEEN20050	30%	week 5, 10%	Lab assignments 30%, homework assignments 30%
EEEN20070	65% *		Assignments 35%
MATH20290	85%	class test 15%	

- **Assignment details usually in Brightspace**
  - instructions, deadlines, etc.
- *** = open-book exam**

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Things to Watch

- Stage 2 modules significantly harder than stage 1
  - was stage 1 easy?   maybe some familiar material?
  - all new material in stage 2…
  - understanding is important!
    - laying the foundation for more advanced modules…

- Lots of continuous assessment
  - labs in many modules
  - need to plan your time – clashing deadlines
    - no penalties for early submission of assignments…

- Grades matter…
  - for BSc in Engineering Science
    - degree based on grades in stages 2 and 3, weighted
    - this is also the entry criterion for ME programmes
  - eligibility for study abroad in stage 3…

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Academic Integrity

- Basic rules apply – no cheating!
  - want to keep assessments fair for all students

- Most submissions start with a declaration
  - this is all my own work, except where I state that it was done by someone else – citation, referencing
  - or, for a team, this is all our own work, except…

- If that declaration is not true, you get penalised
  - grade reduced, maybe to zero (NM), record kept
  - serious or repeated cases go to Registrar…

- See the detailed information
  - Student Conduct:
    https://www.ucd.ie/secca/studentconduct/
  - UCD Library:
    https://libguides.ucd.ie/academicintegrity

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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 Munich, Lausanne, Lyon
- Non-EU exchange
  - to a university outside Europe
  - recent exchanges to USA (various cities), Canada, Singapore, Australia, New Zealand
- Our exchange coordinator: Prof. Stephen Redmond
  - need his approval for the modules that you propose to take on exchange – don't leave to last minute!

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UCD Study Abroad

Exchange Opportunities

When?	Requirements for Engineering Study Abroad
• Stage 3 • Autumn Trimester • Spring Trimester • Full Year	• Stage 1 complete, minimum GPA of 3.00 • 30 credits in Autumn trimester of Stage 2, minimum GPA of 3.00 • No grade less than C- in any core module in those 3 trimesters **Note:** Students with a grade less than C- may be considered under other criteria. Contact College Office for further details on this.

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Class Representative(s)

- Engineering staff-student committee
  - needs student representatives from each stage and from each stream of engineering
- Students' Union
  - election for class representatives
- Point of contact for me
- Choose 1 or 2 people to represent you
  - when you get to know each other better?
- Class communication channel?

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Talk to Us!

- If you find yourself in any difficulty, or have any problem, talk to someone
  - sooner is better – easier to solve problems earlier
- Module Coordinator (lecturer)
  - if the problem relates to a particular module
- College Office (use the student connector)
  - registration problems, extenuating circumstances, leave of absence, reduced workload, etc.
- Student Adviser
  - Julia Maher – general and pastoral advice
- Programme Director
  - Brian Mulkeen – academic advice

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