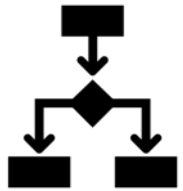
Mechanical Engineering

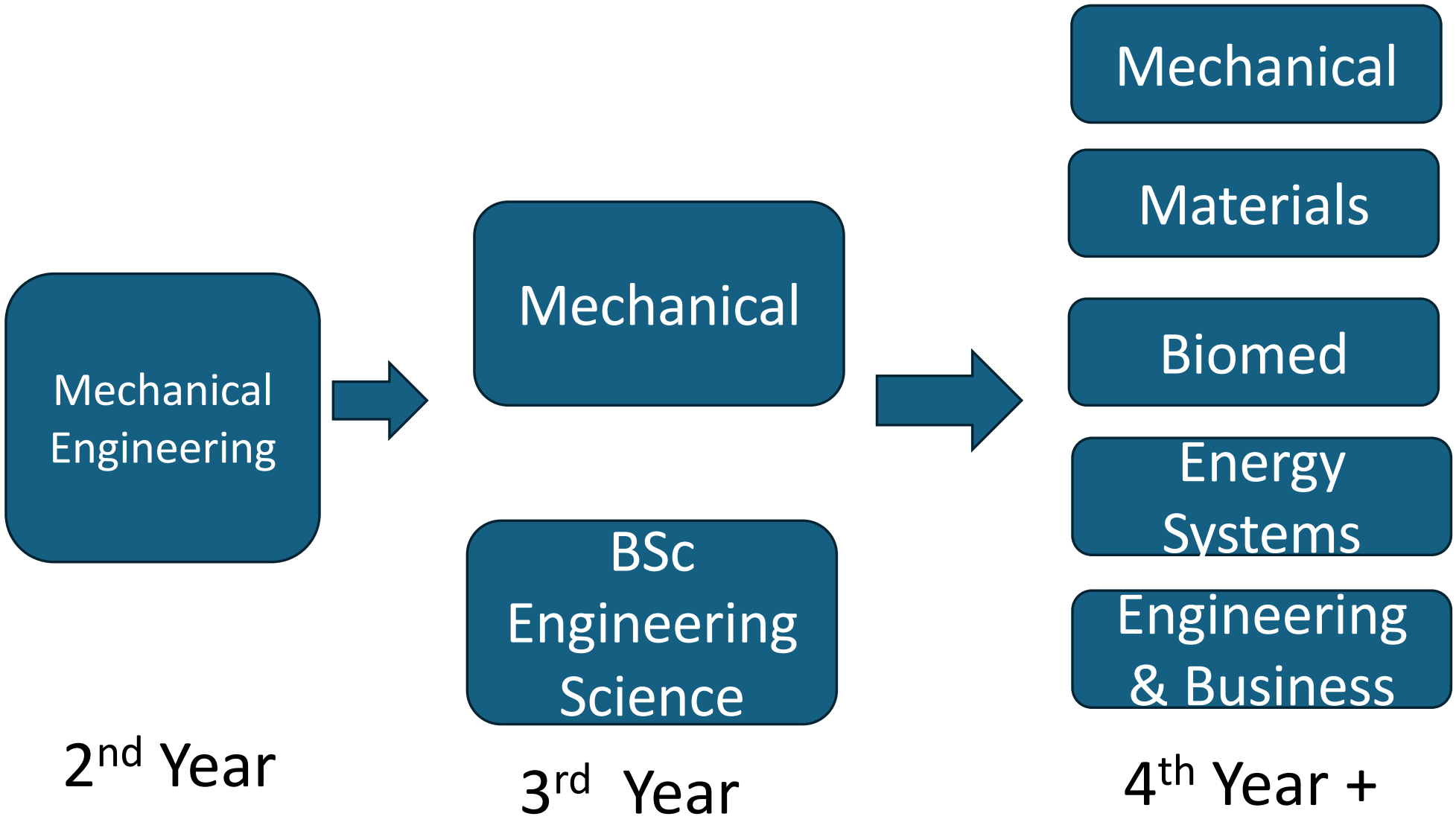
Why Mech Eng?

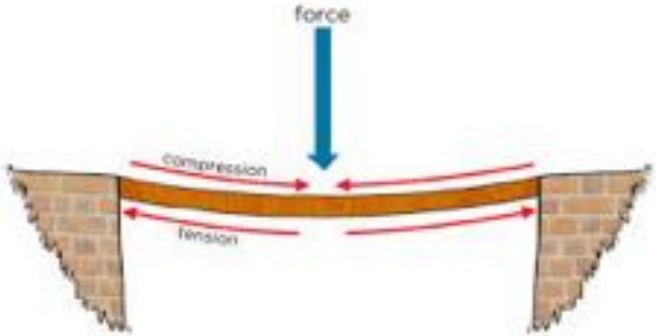


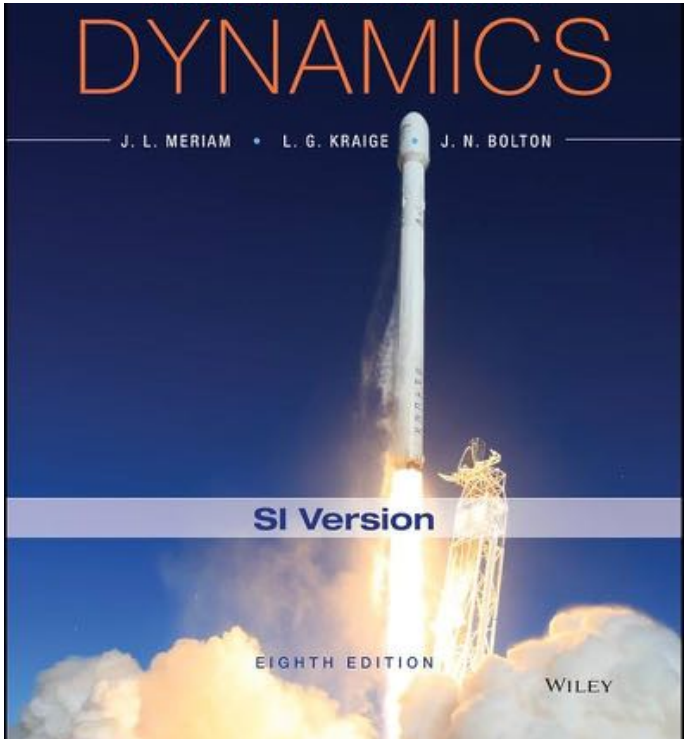
Unsure

Math's & Physics

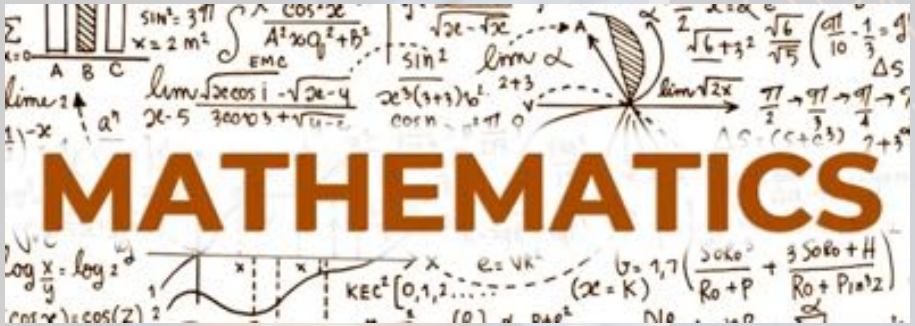
Lots of Choice

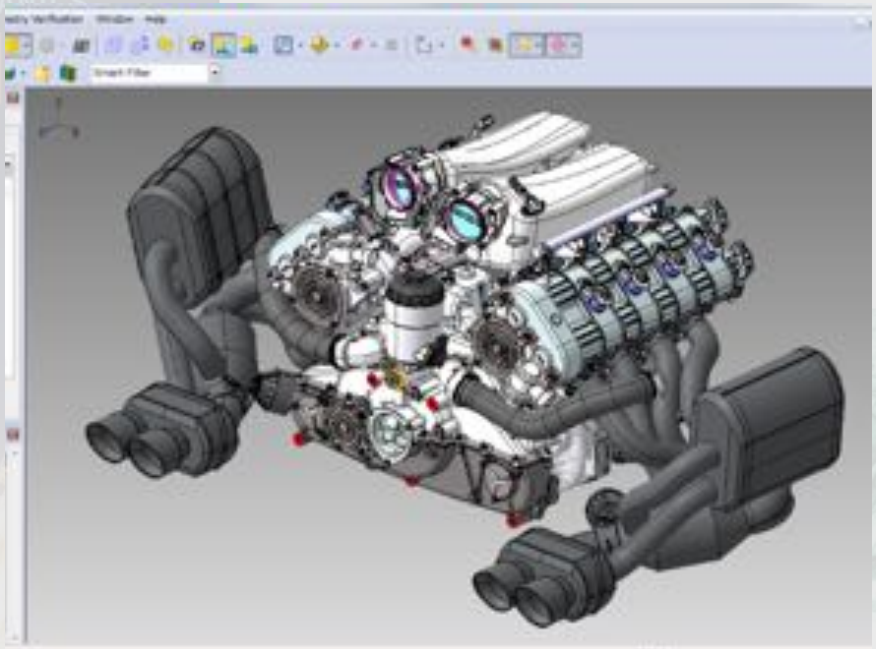

Mechanical Engineering
Mechanical
BSc Engineering Science
Mechanical
Materials
Biomed
Energy Systems
Engineering & Business
2nd Year
3rd Year
4th Year +

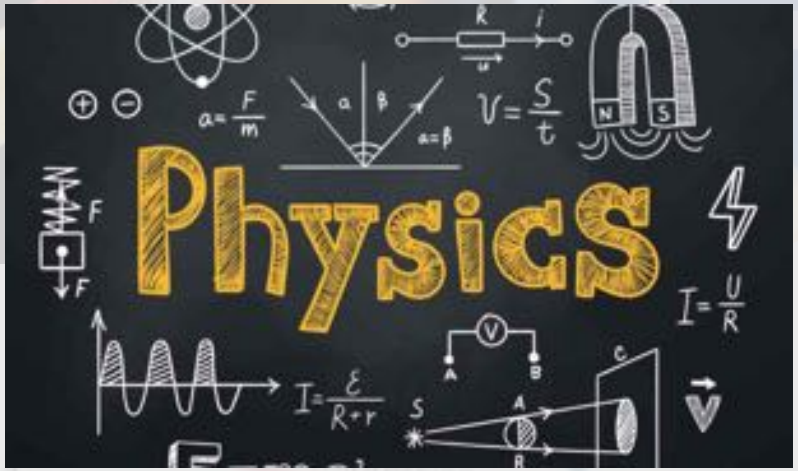




What will you Study?





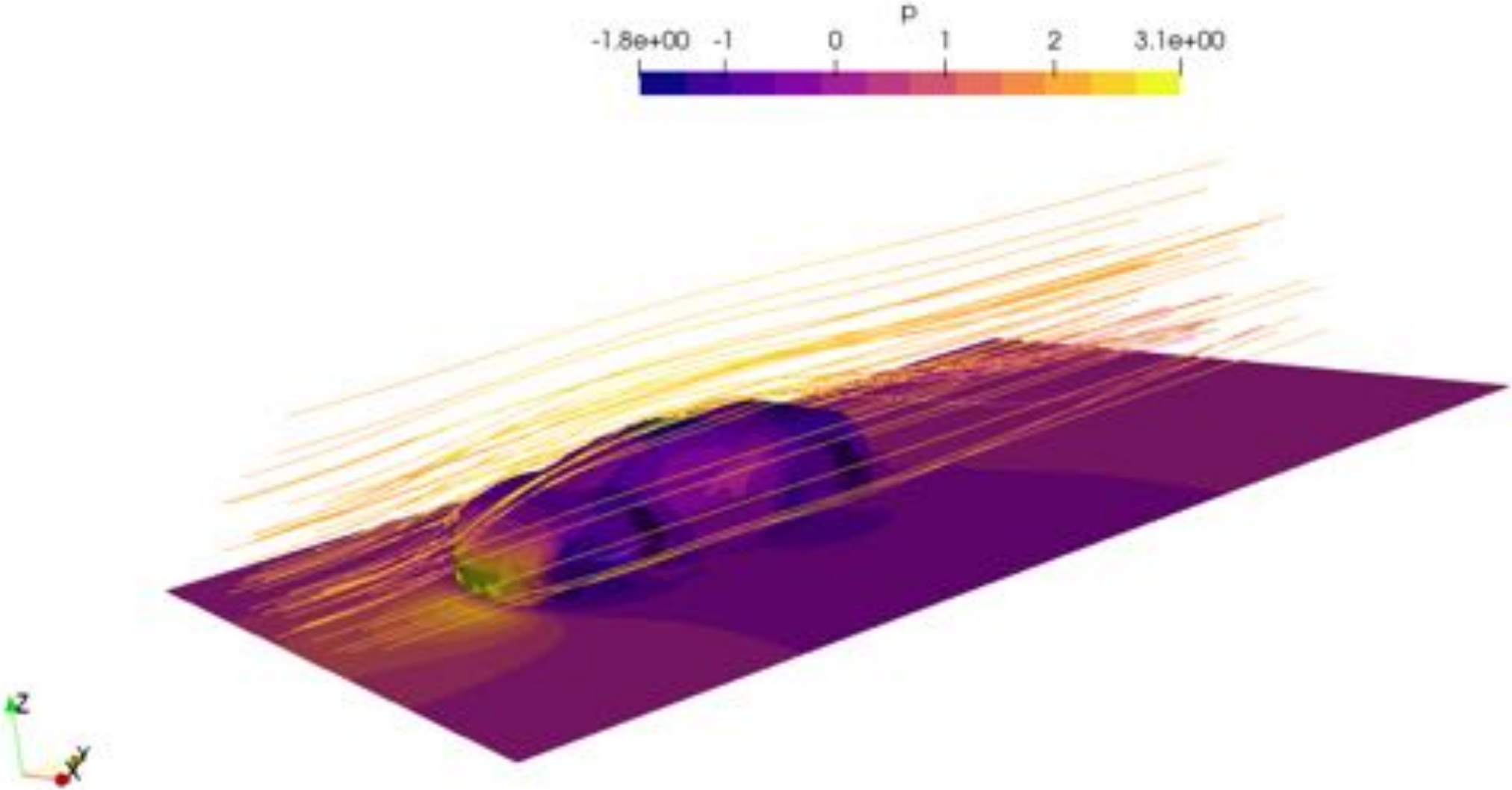



```base64.cc
void base64_encode(const uint8_t * data, size_t length, char * dst)
{
    size_t src_idx = 0;
    size_t dst_idx = 0;
    for (; (src_idx + 2) < length; src_idx += 3, dst_idx += 4)
    {
        uint8_t s0 = data[src_idx];
        uint8_t s1 = data[src_idx + 1];
        uint8_t s2 = data[src_idx + 2];

        dst[dst_idx + 0] = charset[(s0 & 0xfc) >> 2];
        dst[dst_idx + 1] = charset[((s0 & 0x03) << 4) | ((s1 & 0xf0) >> 4)];
        dst[dst_idx + 2] = charset[((s1 & 0x0f) << 2) | (s2 & 0xc0) >> 6];
        dst[dst_idx + 3] = charset[s2 & 0x3f)];
    }

    if (src_idx < length)
    {
        uint8_t s0 = data[src_idx];
        uint8_t s1 = (src_idx + 1 < length) ? data[src_idx + 1] : 0;

        dst[dst_idx++] = charset[(s0 & 0xfc) >> 2];
        dst[dst_idx++] = charset[((s0 & 0x03) << 4) | ((s1 & 0xf0) >> 4)];
        if (src_idx + 1 < length)
            dst[dst_idx++] = charset[((s1 & 0x0f) << 2)];
    }
```


P
-1.8e+00
-1
0
1
2
3.1e+00
Z
X

- 1 Semester or 1 Year.
- Can’t get a D!!!
- Avoiding 3rd Year
- Opportunity To Travel

Georgia Institute of Technology

University of Colorado Boulder

THE UNIVERSITY OF MELBOURNE

THE UNIVERSITY of EDINBURGH

UNIVERSITÉ DE LYON

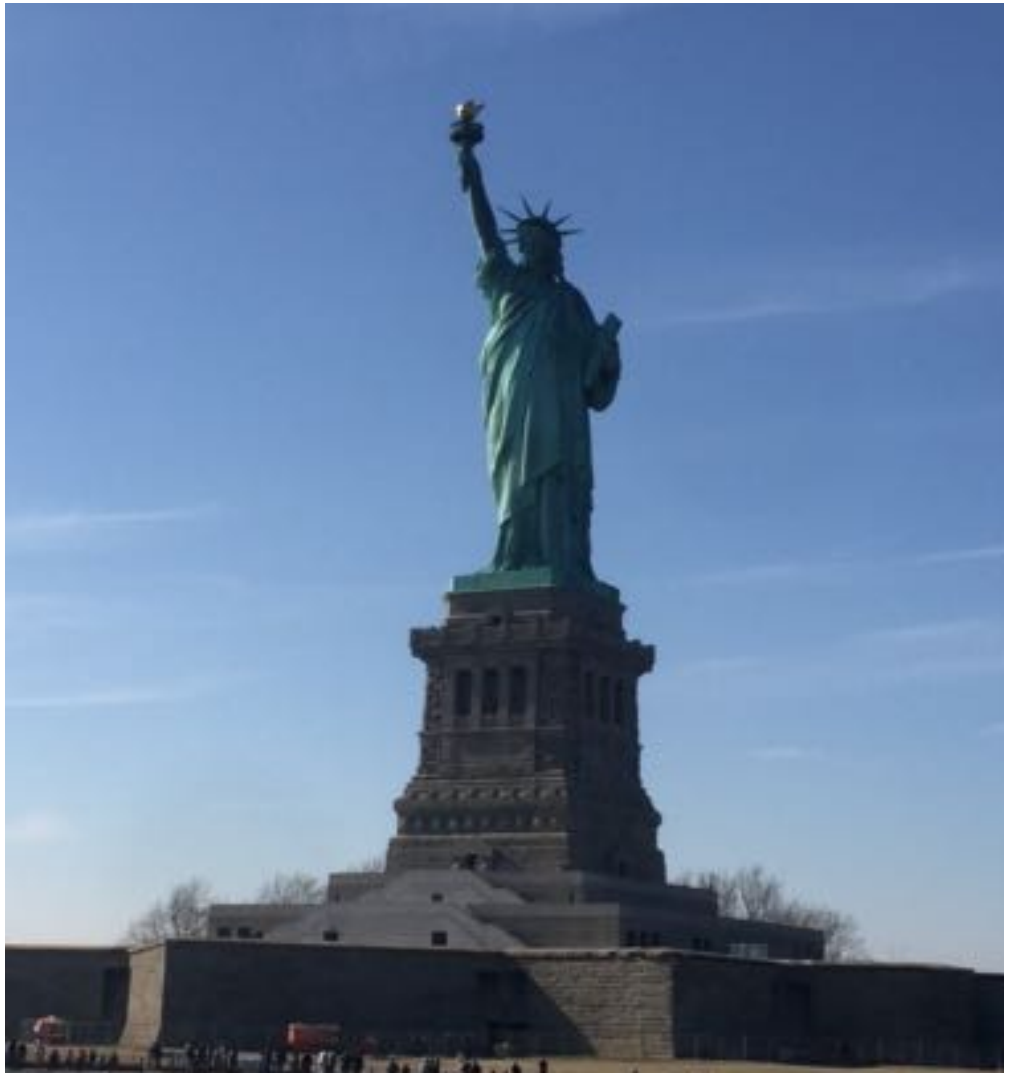
Queen's University

THE UNIVERSITY OF SYDNEY

UNIVERSITY OF BIRMINGHAM

- 4 Modules instead of 6
- Travelled lots around US
- Stay for the Summer
- Chance to Study in top University


20:00

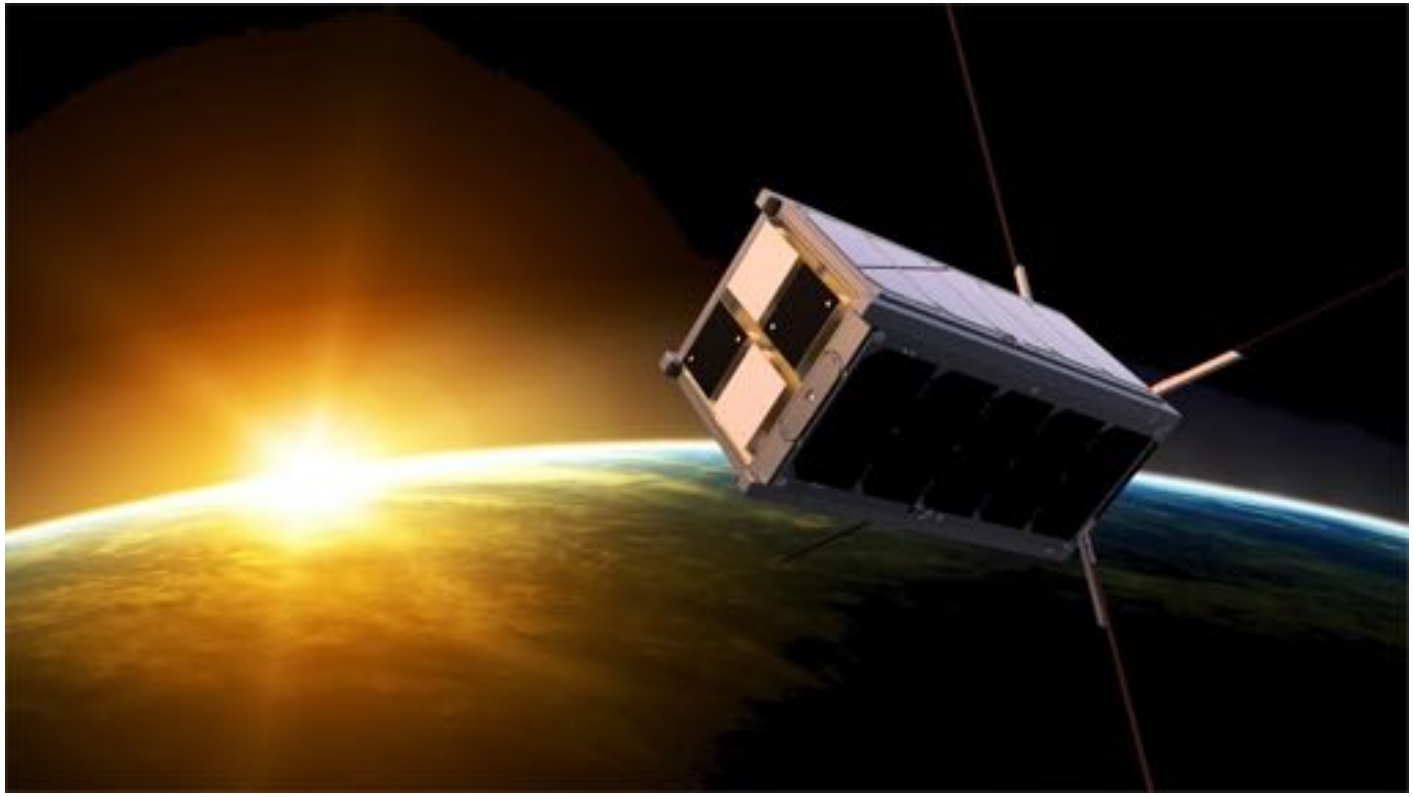


Internship

ARUP

8 Months → What you like/or what you don't like → Graduate work after

Thesis



BE & ME

Studying a Satellite Thermal systems

All of 5th year

Infrastructure

ARUP

waterman moylan

walls | w

Pharma & Med Devices

Pfizer

Medtronic

Other Industries

logitech

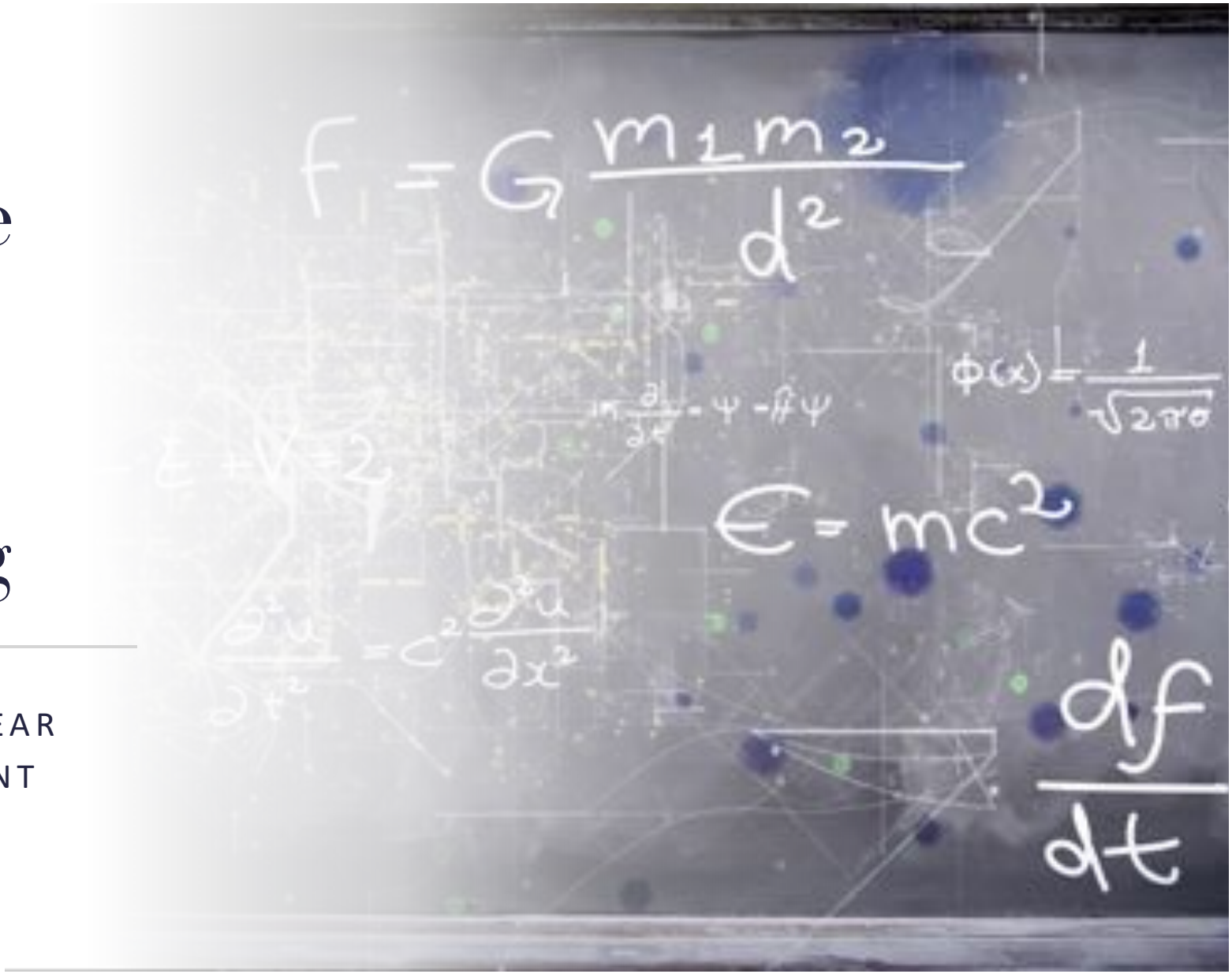
EY

ORIX

Future

Why I chose Material Science and Mechanical Engineering

HENRY START – 5TH YEAR ENGINEERING STUDENT



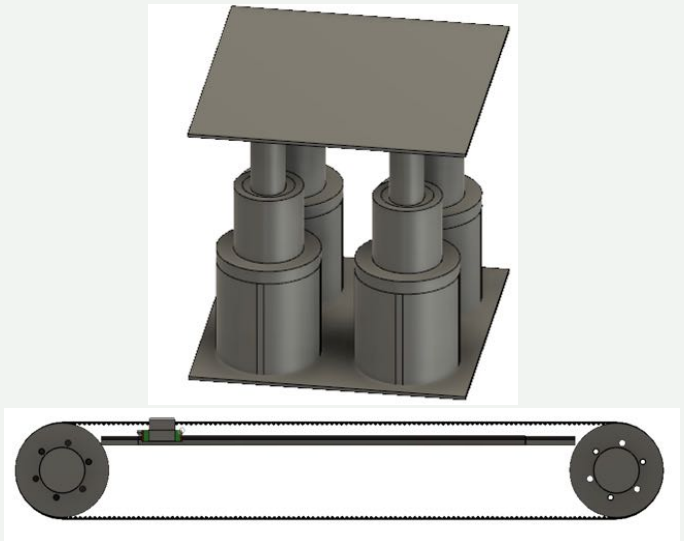
How to decide?

Where do I want to be in 5 years?

What kind of job do I want?

What do I enjoy? What do I not enjoy?

Why choose mechanical engineering for your undergrad



- Versitility
- Flexibility
- Design experience
- Interesting topics
  - Fluid dynamics
  - Thermodynamics
  - Material science
  - Applied dynamics
- To find the full module list google: UCD DN150

What can you do with a Mechanical engineering degree?

1) Mechanical Engineering

2) Engineering with business

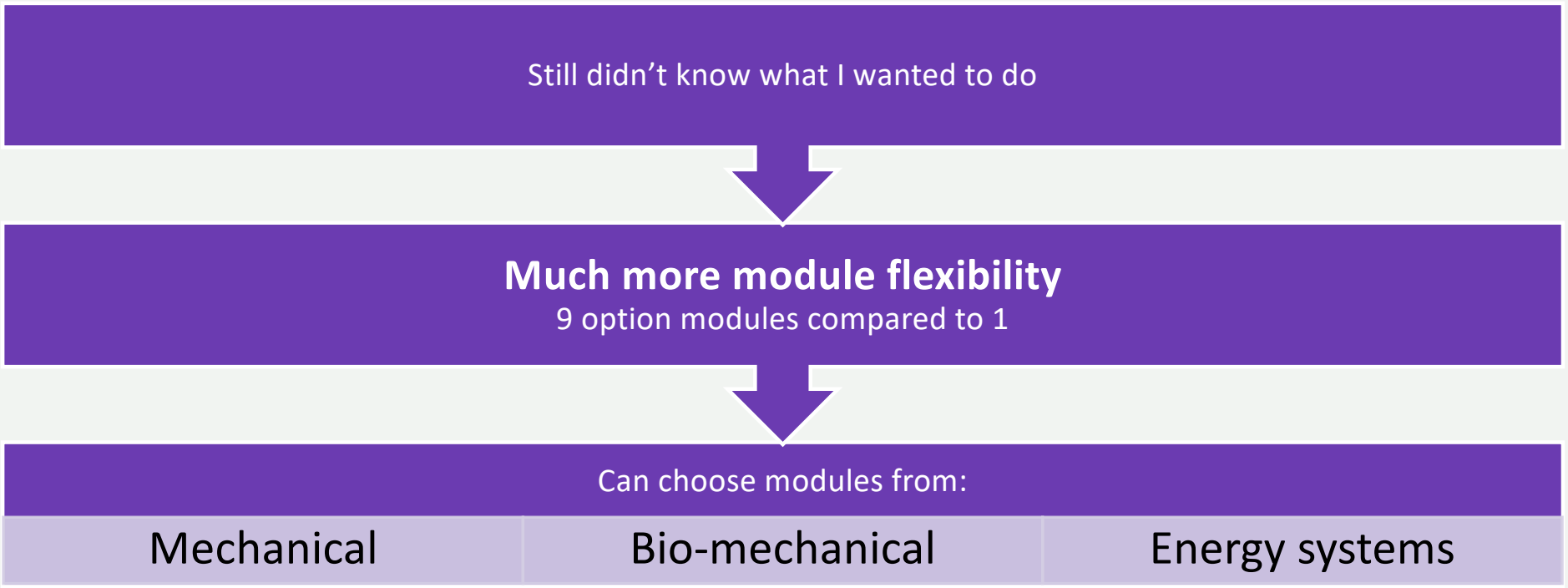
3) Material Science & Engineering

4) Energy Systems Engineering

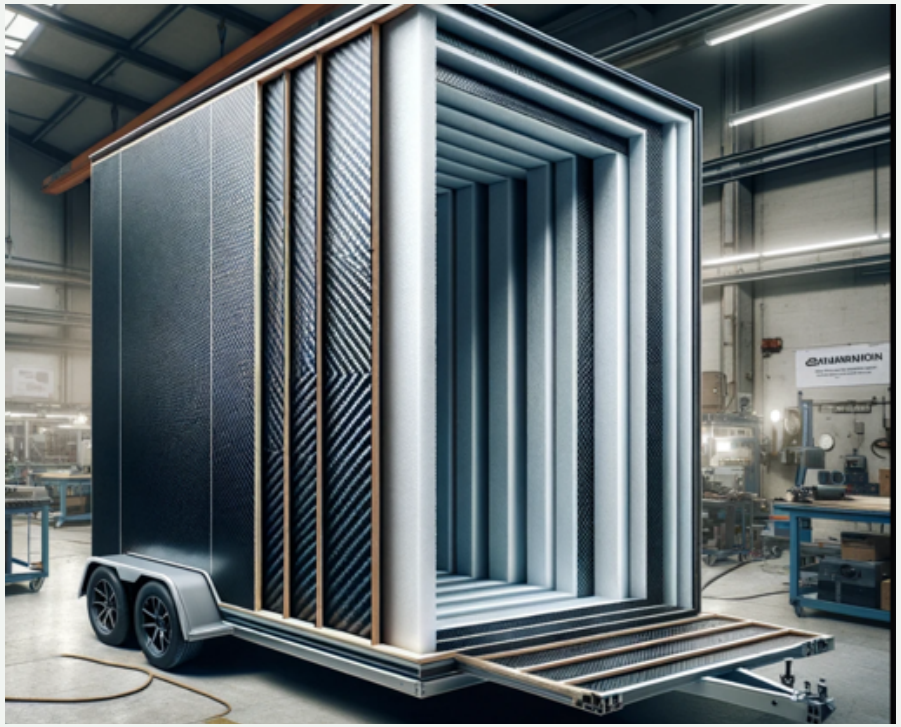
5) Biomedical Engineering

Not just studying

Why I chose the Materials Science Masters



Masters Project – Carbon fibre composite testing



Internship opportunities

Get access to more internships

I did mine in FoodMarble which is a med-tech start up working on product design and optimisation

Skills used:

- Coding
- Product design
- Device diagnosis and testing

Take home points

Enjoy college, join a society or sports club

If you feel overwhelmed talk to someone

Do a J1 or go on Erasmus, you wont get those opportunities once you leave college

Introduction

- Sarah Joyce
- 4th Year BE Mechanical Engineering
- Contact: sarah.joyce3@ucdconnect.ie

My Journey

2nd Year

- Biomedical Engineering

3rd Year

- Mechanical Engineering

4th Year

- Finishing with a BE

Why Mechanical?

- Most flexible/versatile
- Work in sustainability
- Modules that develop other skills

Work Experience

DIAGEO

DESIGNER GROUP
Engineering Contractors

JAE engineering Ltd
specialist consultants

Future Plans

Tips/Advice

- Don't be scared to be confused
- Look online:

  https://www.youtube.com/@ProfJeffreyChasnov

  https://www.youtube.com/@MichelvanBiezen
- Go to the talks/open days
- Enjoy your time here

Thank You

Questions?

Mechanical Engineering

Gráinne O’Reilly

About me

23

From Dublin

5th year mechanical engineer – masters

Why I chose mech

Favourite modules were mechanical based

Lots of Maths but not too abstract

Broad stream and can specialise further later on

- Mechanical
- Energy
- Biomedical
- Materials
- Mech & Business

Favourite modules

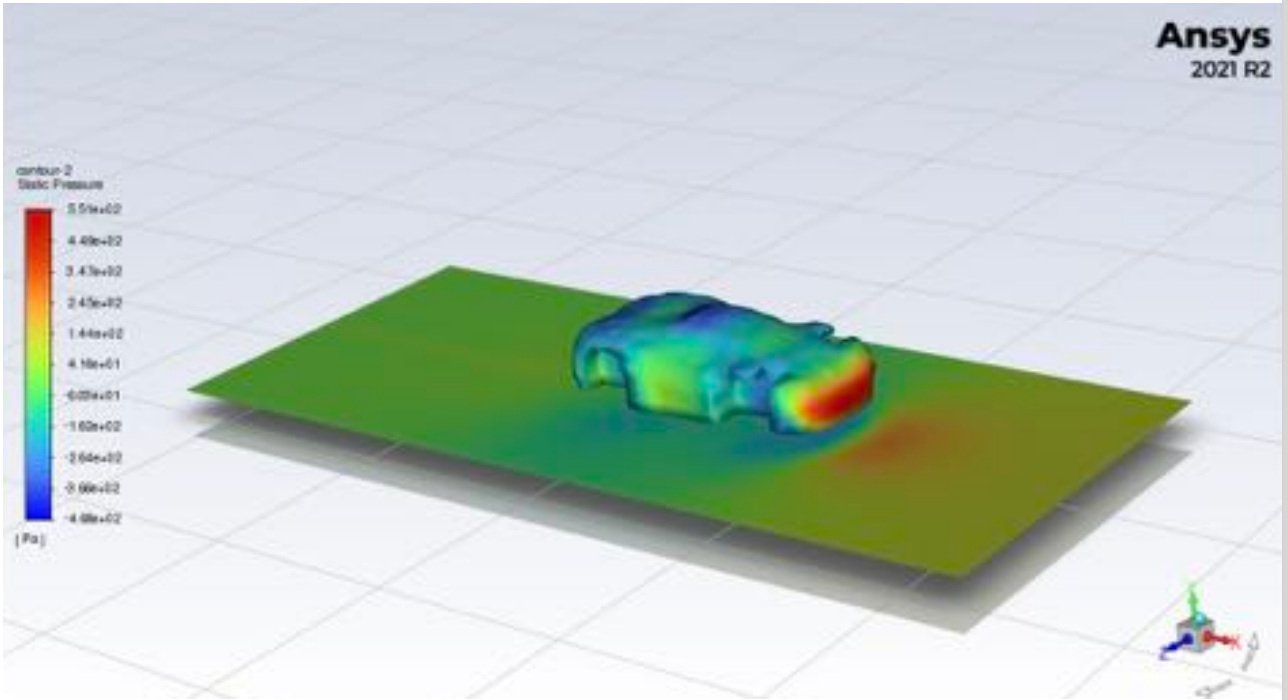
- First year
  - Physics for engineers
  - Linear algebra
  - Mechanics for engineers
- Second year
  - Materials science & engineering
  - Mechanics of solids I
  - Heat transfer
  - Electives -> French & Italian

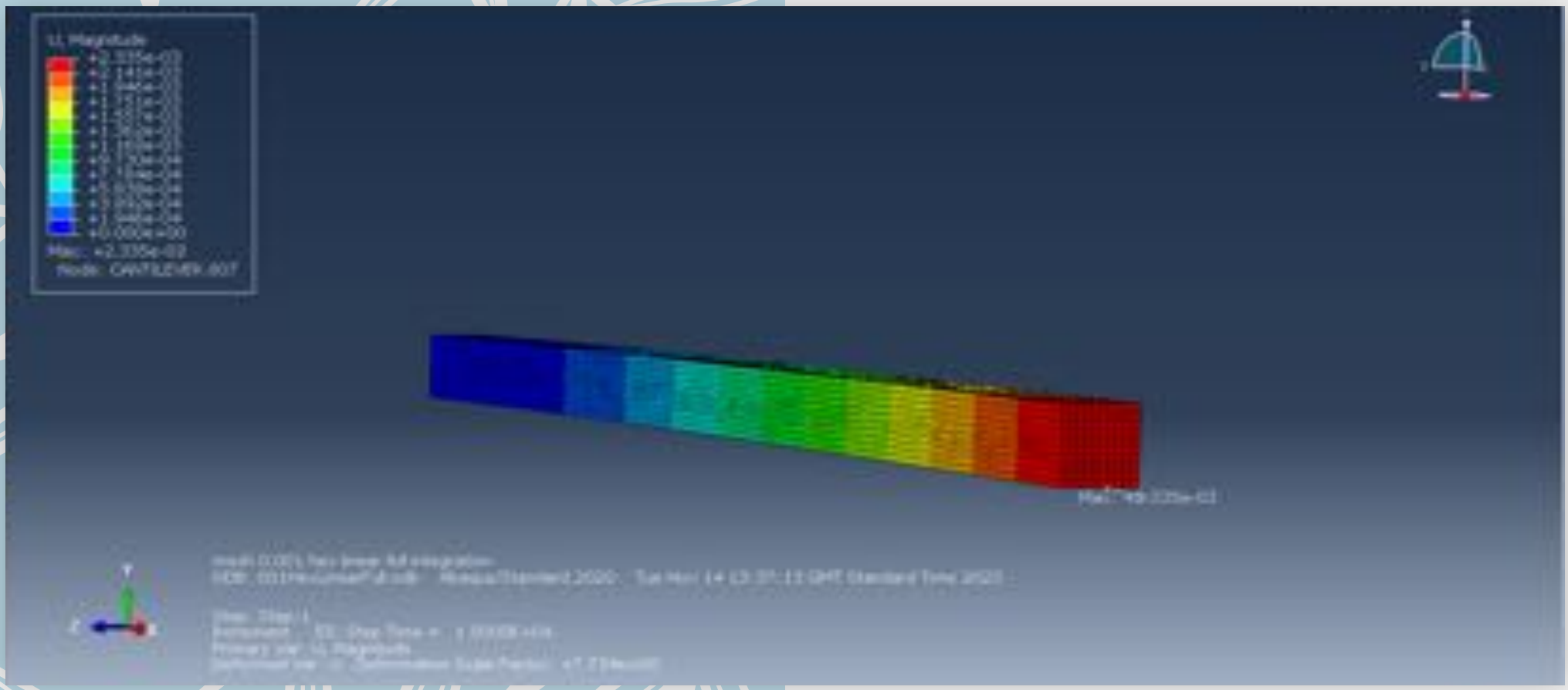
Favourite modules

- Third year
  - Thermodynamics
  - Mechanics of solids II
  - Mechanical engineering design
- Or Erasmus

Favourite modules

- Fourth year
  - Fracture mechanics
  - Computation continuum mechanics
  - Manufacturing engineering




U, Magnitude
Max: +2.335e-03
Node: CANTILEVER.807

Life outside UCD – jobs / internships

- Worked full time with Walls Construction
- January – August 2023

Other work experiences

- Pharmaceutical – AbbVie, Alexion
- Engineering infrastructure and manufacturing – Arup
- Consumer electronics – Logitech
- Energy engineering – Eirgrid, ESB

Life outside UCD – jobs / internships

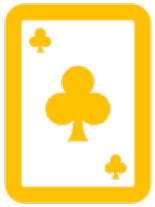
Worked part-time with Walls September 2023 – January 2024

Have been giving grinds in Maths & Irish since first year

Life outside UCD – hobbies

Main hobby – rock climbing

Other sports – hockey and swimming



Other hobbies – going out for dinner, pub quizzes

Life outside UCD – future plans

- Travelling 2023 -> South Africa, Paris
- Work with Walls Construction
- Travelling 2024 -> backpacking around Central America
- Work abroad for 2 years before returning to Ireland to work

Thank you!

Any questions?