

Engineering Design at Bristol

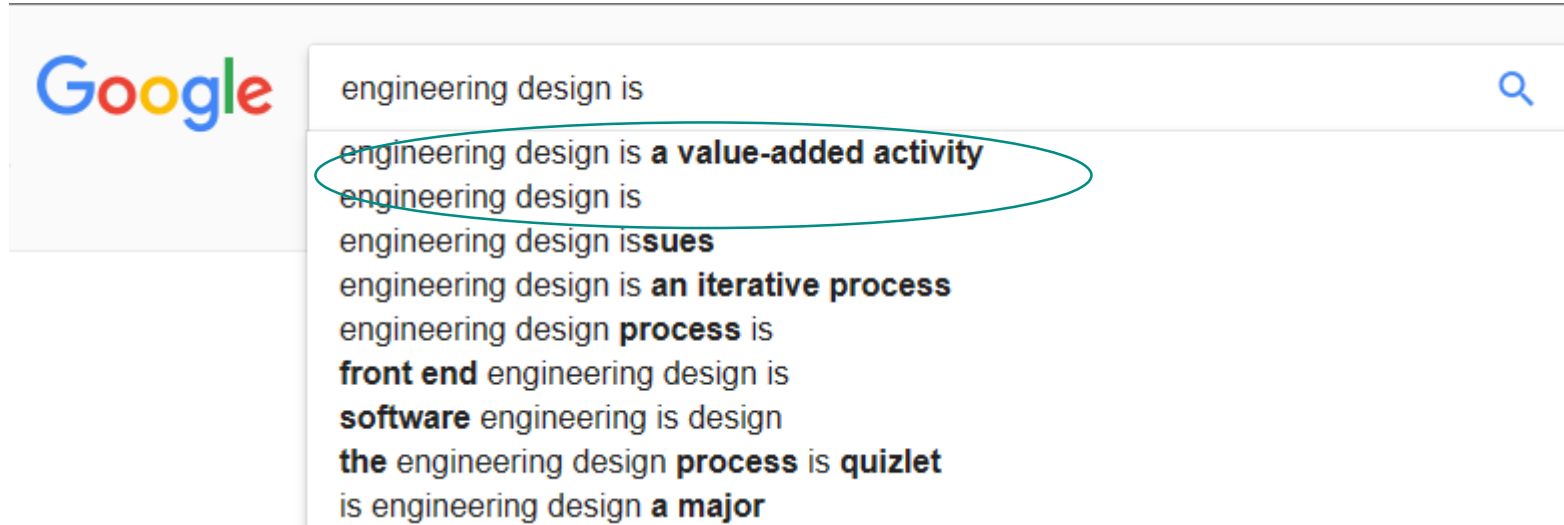
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Design is at the heart of the engineering curriculum

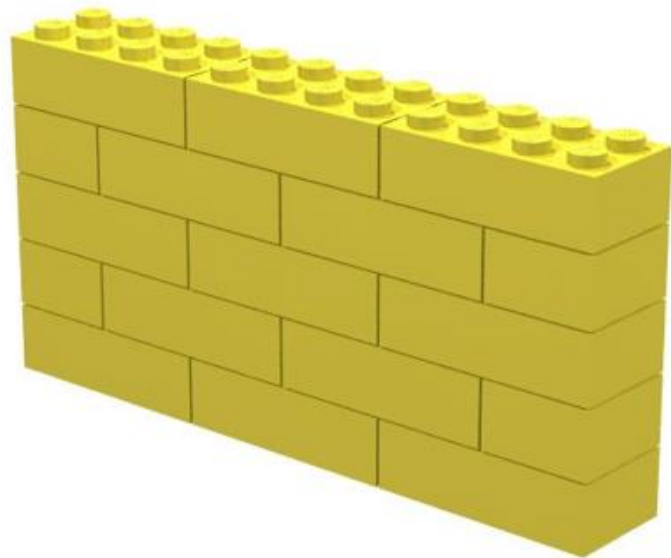
- We are the School of Civil, Aero and Mechanical Engineering (CAME)
- We are part of the Faculty of Engineering
- Engineering Design is a multi-disciplinary, in-depth programme
- Developed to deliver high-calibre engineers who can lead complex engineering projects that are vital to modern society.



What is engineering design?

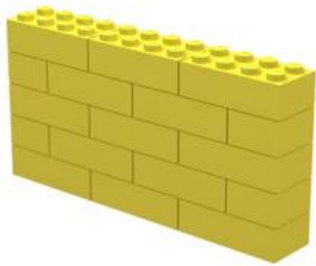


Design

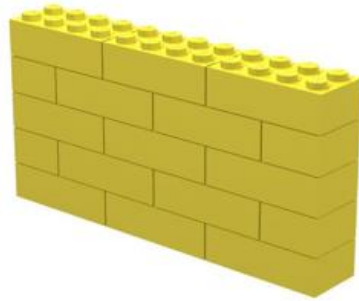


Manufacture

Design



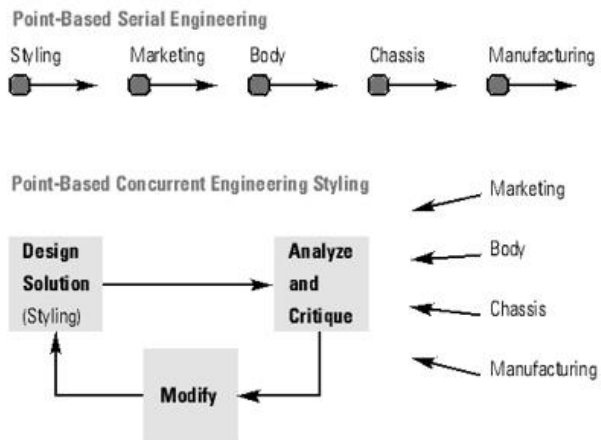
Engineering



Manufacture



Figure 1
Traditional Point-Based Approaches to Product Development



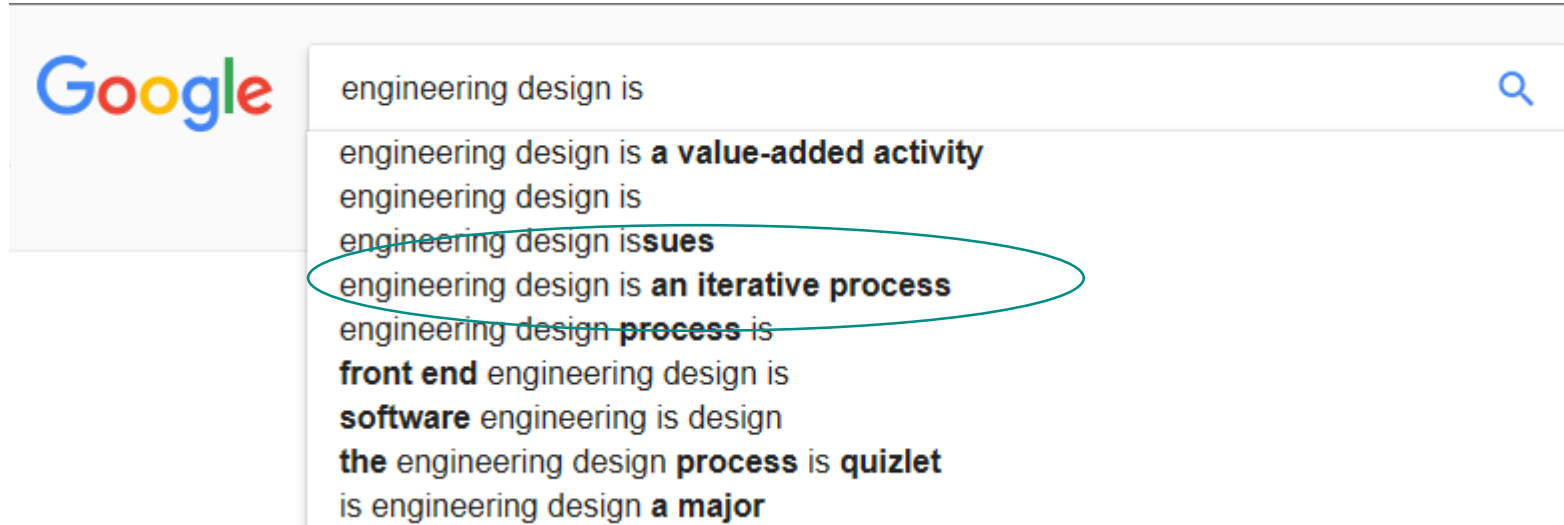


EXPECTATION



REALITY

What is engineering design?





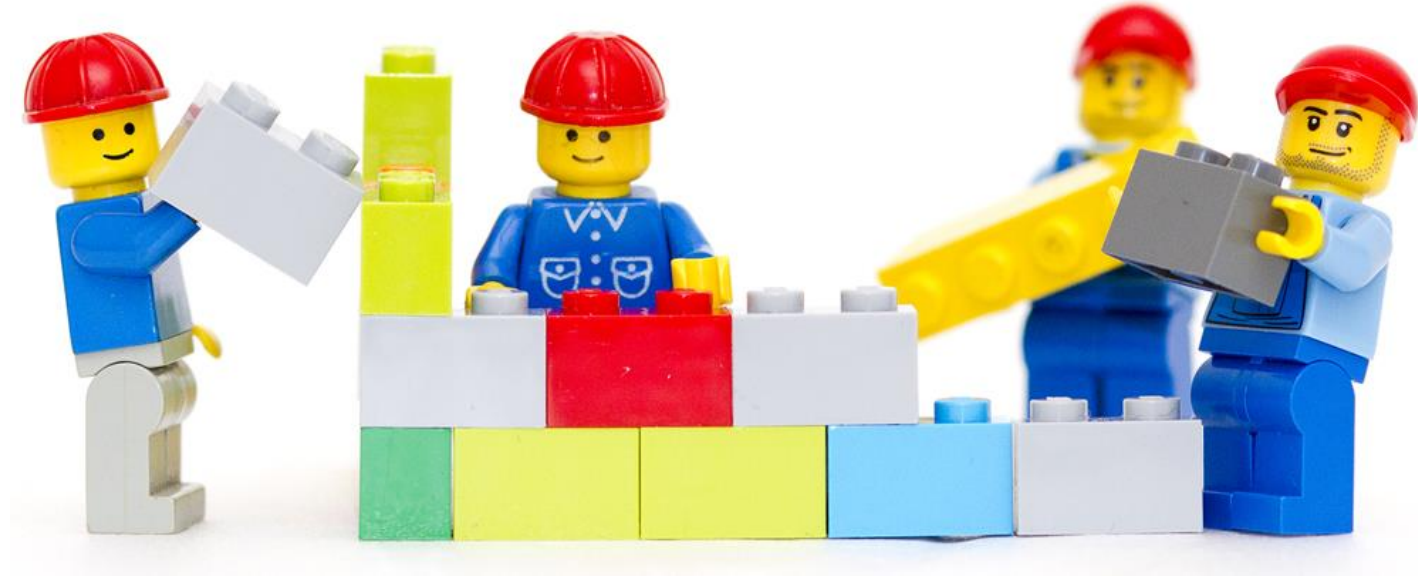
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Why design is important in engineering



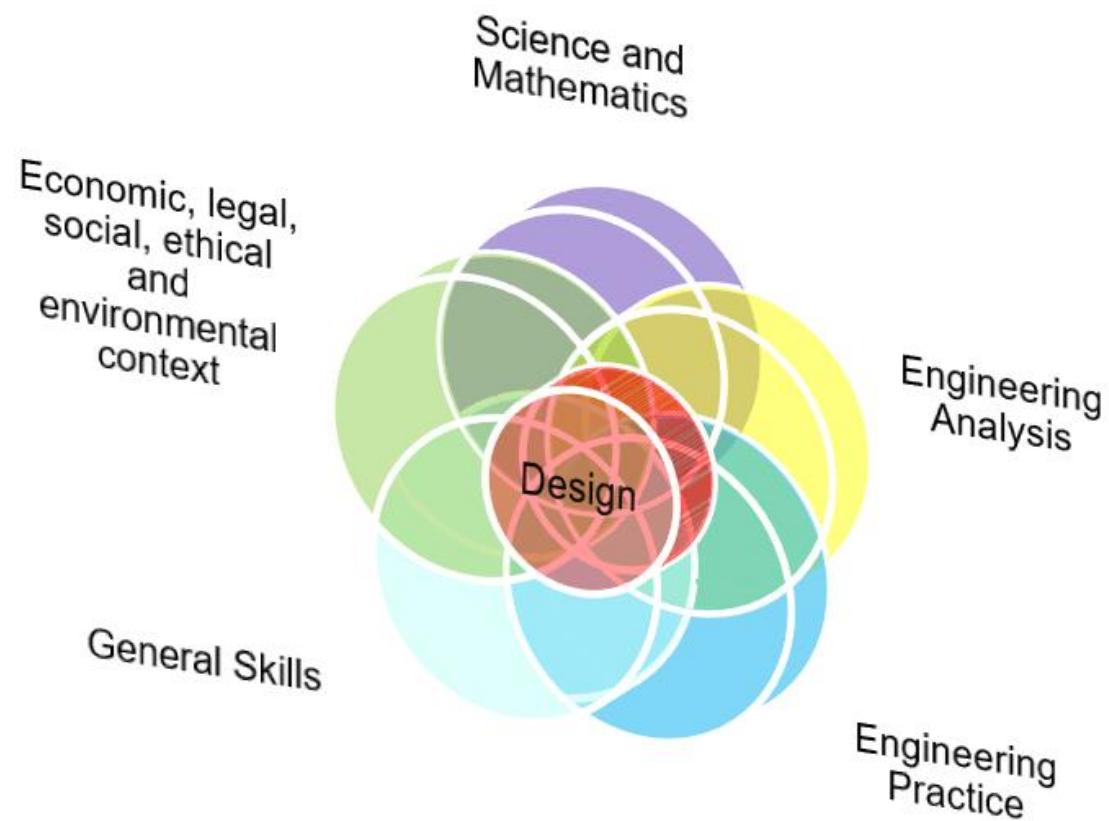
Integrated Masters (MEng) Degrees

- SCIENCE & MATHEMATICS
- ENGINEERING ANALYSIS
- DESIGN
- ECONOMIC, LEGAL, SOCIAL, ETHICAL & ENVIRONMENTAL CONTEXT
- ENGINEERING PRACTICE
- ADDITIONAL GENERAL SKILLS

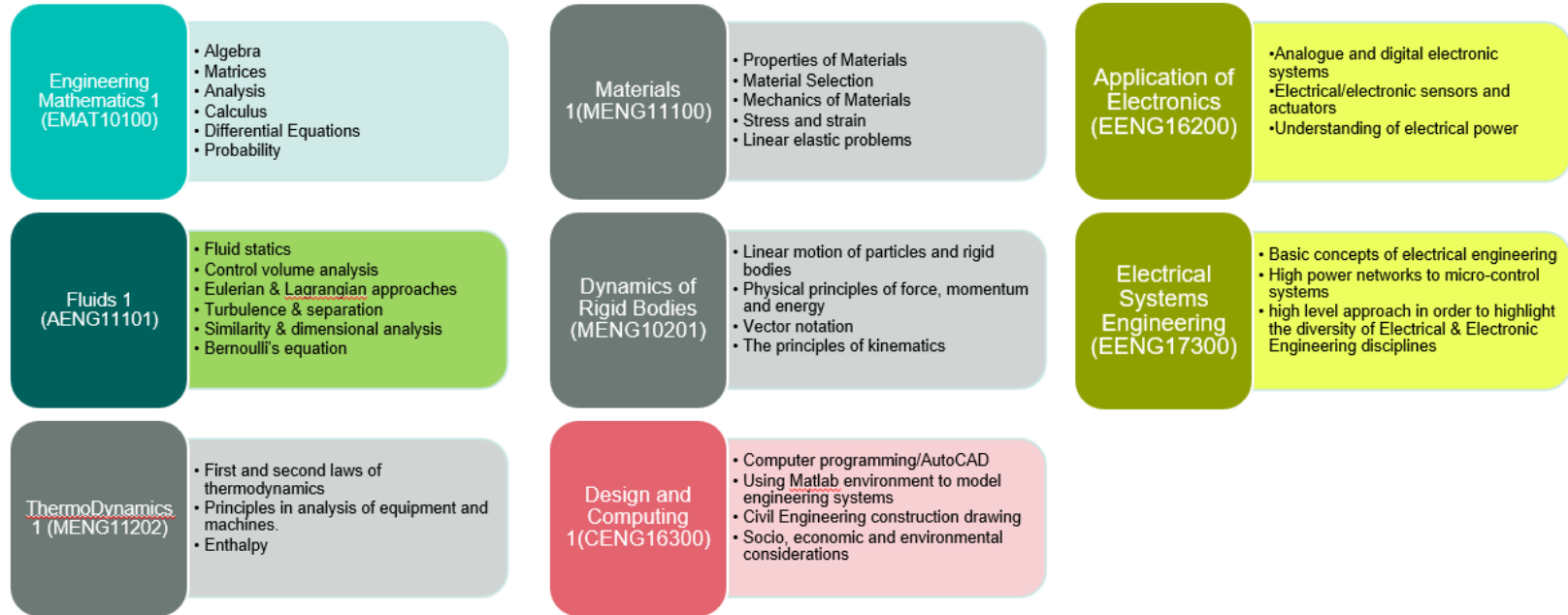
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- Design at this level is the creation and development of an economically viable product, process or system to meet a defined need.
- It involves significant technical and intellectual challenges and can be used to integrate all engineering understanding, knowledge and skills to the solution of real and complex problems



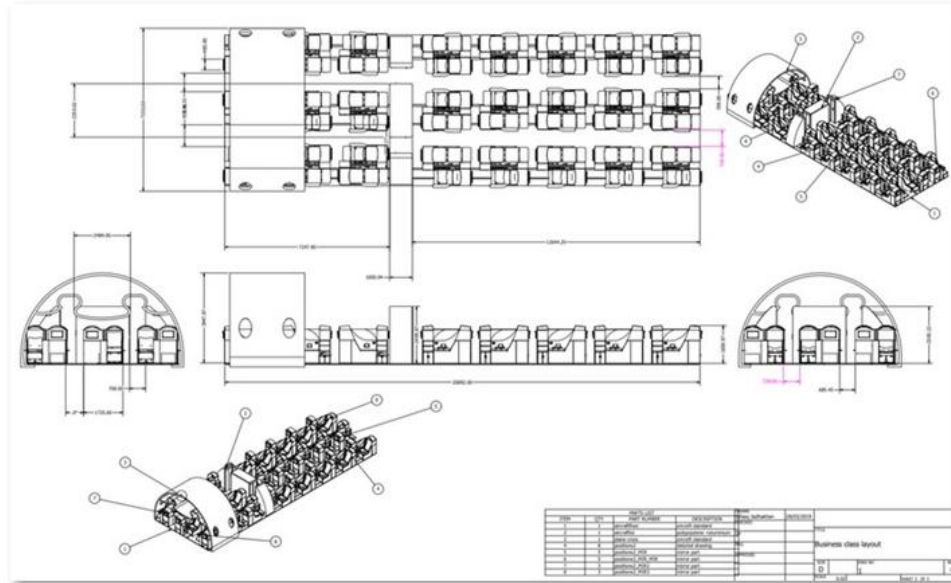
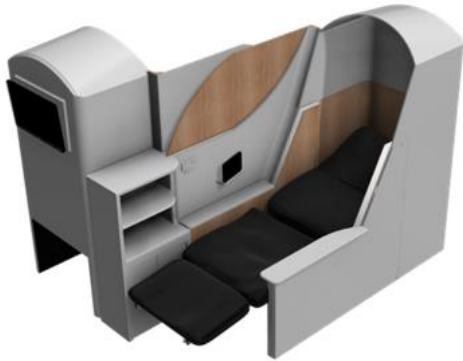
Your first year - the Engineering Design programme 2020



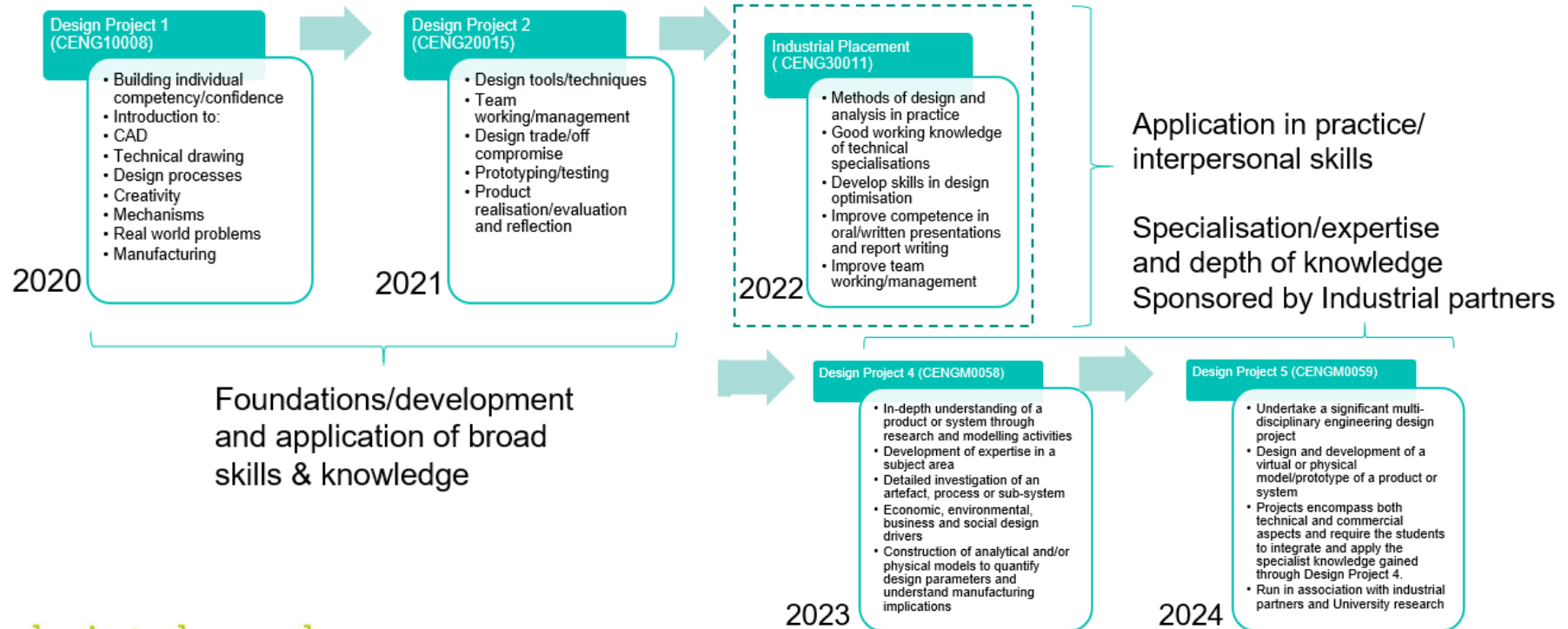
Your first year - the Engineering Design programme 2020

Design Project 1 (CENG10008)

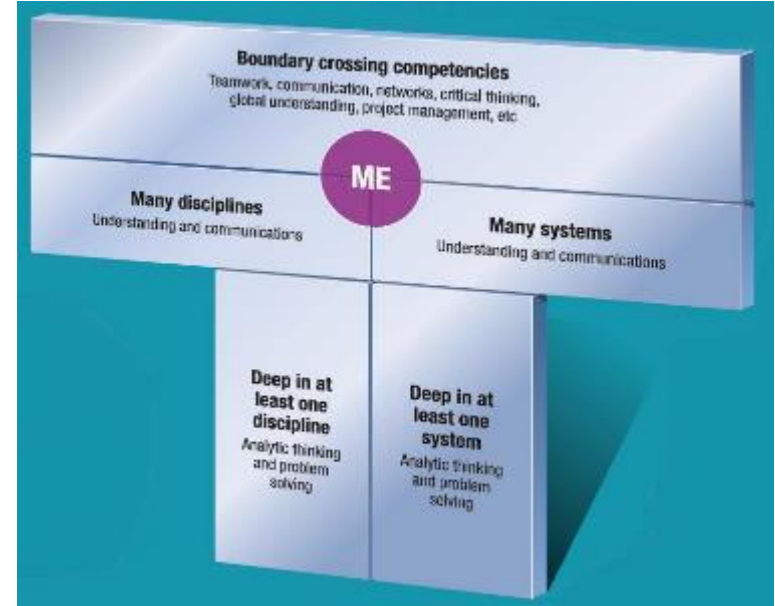
- CAD (Fusion 360/Inventor)
- Understanding of mechanical devices and mechanisms
- Introduction to the design process
- Presenting concepts and producing manufacturing drawings
- Manufacturing processes



Your first year - the Engineering Design programme 2020



Your first year - the Engineering Design programme 2020



Our staff and partners



Paul Harper



Jeff Barrie



Andy Greener



Will Clements



Mike McCann



Chris McMahon



ATKINS

Member of the SNC-Lavalin Group

Nathan Halewood

MEng Engineering Design

- Graduated 2019
- Summer Placement Atkins Nuclear 2015
- Industrial Placement at Atkins Infrastructure 2016-2017
- Networks and Drainage Engineer
- I work on surface water management and clean water distribution system design

Joined forces

On July 3 2017, SNC-Lavalin and Atkins joined forces



ATKINS

Member of the SNC-Lavalin Group

= Our Vision

- › A leading engineering and construction group in the world offering services in oil and gas, mining and metallurgy, infrastructure and power
- › Major player in the ownership of infrastructure
- › One of the world's most respected design, engineering and project management consultancies serving infrastructure, transportation and energy sectors
- › We strive to be the premier engineering solution partner, committed to delivering complex projects from vision to reality for a sustainable lifespan



MEng Engineering Design - Atkins



HPC

- › Surface Water Channel Design
- › Highly complex integrated gravity networks design
- › Multi discipline team
- › BIM compliant design using Civil3D and NavisWorks



Thames Valley Mains Rehabilitation

- › Clean water distribution main scheme design
- › ArcGIS skills developed for design purposes
- › Regular focused client and contractor liaison.

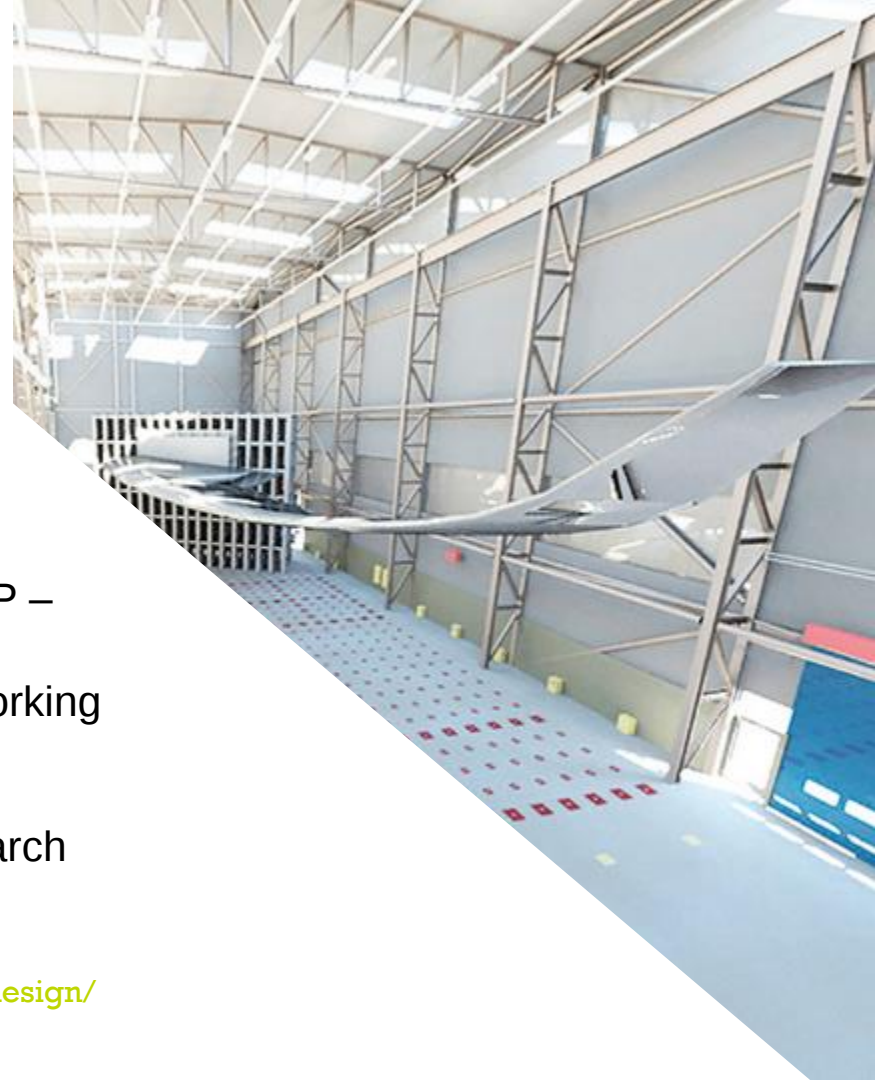
MEng Engineering Design

Claudia J Martin

Airbus / University of Bristol

- Graduated in 2018
- EngD Research Engineer in Composites Manufacturing
- Summer placement between 1st/2nd year – ARUP – Engineering Intern in rail team
- Placement at DNV GL – Engineer/Consultant working in renewable energy
- Summer placement between 4th/5th year – Rolls Royce UTC at TU Dresden – Composites Research Engineer

www.bristol.ac.uk/engineering/interdisciplinary/engineering-design/



Airbus Wing of Tomorrow

- Airbus programme aimed at developing a composite wing manufacturing concept for a next-generation single-aisle aircraft
- Composite materials open up new possibilities for wing configuration and construction
- However new challenges arise e.g. highly complex parts difficult to manufacture



MEng Engineering Design

The EngD

- Four-year postgraduate research programme for researchers who aspire to key leadership positions in industry
- Industry based project
- Technical training
- Professional career development

www.bristol.ac.uk/engineering/interdisciplinary/engineering-design/

