Co-op Academy Priesthorpe

Key Stage 4 Information Evening 2023

Engineering Design

Links to key websites

https://www.technologystudent.com/

https://designmuseum.org/

Engineering Design Specification

https://www.bbc.co.uk/bitesize/examspecs/zdvb2sg

https://www.designcouncil.org.uk/

IS THE COURSE RIGHT FOR ME?

The skills required to be successful in Engineering at Key Stage 4 are no different that those in the workplace: Good punctuality, observing health and safety at all times and wear the correct protective equipment.

WHERE NEXT?

There are many jobs available in the Engineering sector: Aerospace engineer / Automotive engineer / Biomedical engineer Chemical engineer / Communications / Civil engineering Control and instrumentation engineer / Drilling engineer Electrical engineer / Electronics engineer / Energy engineer Engineering geologist / Geochemist / Maintenance engineer Manufacturing engineer / Manufacturing systems engineer Materials engineer / Mechanical engineer / Naval architect Petroleum engineer / Production manager / Structural engineer

ENGINEERING DESIGN

Engineering design is a process that engineers follow to come up with a solution to a problem. Many times the solution involves designing a product that meets certain criteria and/or accomplishes a certain task. You will learn how to use new and emerging technologies to design products that solve problems.

Units Studied

R038: Principles of engineering design - In this unit, students will learn about the different design strategies and where they are used, as well as the stages that are involved in iterative design, which is currently one of the most widely used design strategies. They will learn about the type of information needed to develop a design brief and specification, and the manufacturing and other considerations that can influence a design.Students will develop knowledge of the types of drawing used in engineering to communicate designs, as well as the techniques used to evaluate design ideas and outcomes, including modelling methods.

R039: Communicating designs - In this unit, students will learn how to develop their techniques in sketching, and gain industrial skills in engineering drawing using standard conventions that include dimensioning, line types, abbreviations, and representation of mechanical features.Students will enhance their confidence and capabilities by using computer aided design (CAD), 2D and 3D software, to produce accurate and detailed drawings and models that visually communicate their designs.

R040: Design, evaluation and modelling - In this unit, students will learn how designers can quickly create and test models to develop a working prototype of a design. They will develop their virtual modelling skills using computer aided design (CAD) 3D software, to produce a high-quality model that will be able to simulate their design prototype.Students will also develop their physical modelling skills using modelling materials or rapid-prototyping processes to produce a physical prototype.