



Engineering across the curriculum

Engineering is a huge field and encompasses many job roles. It is predominantly using mathematical and scientific theories to solve problems; however, many other curriculum areas provide young people with transferable skills to use in their future careers

Here is how key skills and knowledge from academic subjects can link

Art

Creative inspiration, visual problem solving, Designing products, systems and concepts

Visualising how things work to take apart or improve and solve problems

Communicating ideas and methods

Presenting designs and information. Can also support version control of working documents and prototyping

DT/Engineering

Practical skills and use of tools and equipment

Health and safety awareness and understanding

Design and recording skills, problem solving techniques

Awareness of the design process. Use of advanced technologies and packages

Prototyping and modelling

Critical evaluation

Presenting information

English

Understanding specifications and designs



Recording, logging and report writing
Communications with stakeholders
English is a worldwide language in Engineering
Research skills
Use of Technical language and supports understanding of technical concepts
Ability to understand and interpret drawings and visual materials

Geography

Supports context and knowledge in fields like geotechnical engineering, constructions and environmental engineering
Geographical analysis for planning and resource management
Analysis of spatial data relating to infrastructure projects
understanding and analysis of human activities and solutions to these
Designing urban layouts
Data analysis, interpretation and communication

Computing

Use of workstations and desktops
CAD and other specialist software operating systems
Understanding of version control
Email and diaries and systems
Control and automation, robotics and coding

Sport

Understanding of design equipment and facilities
Understanding of performance analysis systems
Supports materials science
Understanding of Biomechanics
Safety and injury prevention



Performance technology
Physical skills and discipline

Languages

Understanding of global teams and language use
Understanding of general engineering language
Communication and customer relationship management

History

Research and reading skills
Understanding context and constraints globally
Historical awareness supports informing design and construction choices
Understanding human context and societal issues

Business

Critical thinking
Analytical skills
Understanding business operations
Awareness of market needs and influences
Understanding of product viability and management

Religious studies

Can provide an ethical framework for business
Understanding life questions
Understanding diversity and attitudes towards change and development



Maths

Awareness and understanding of theories

Analytical skills

Problem solving

Calculations

Measurement, probability

Algebra, stats, trigonometry

Predicting and modelling

Sciences

Theories

Periodic table and chemical awareness

Problem solving, Challenging and testing

Biomedical development and products

Materials science and performance

Many students may wish to undertake A level study and then move into an engineering or construction field. To support them when selecting A levels subjects please remember STEM Subjects for STEM Careers.

Maths based subjects (not economics), Physics and Chemistry are key entry requirements for Apprenticeships and traditional Higher and Degree courses. Advise students to check University entry requirements prior to selecting A levels. Where students haven't studied maths and sciences they may have to start at a lower level in their chosen career area.