

Core technical qualification

OCR Level 3 Cambridge Technical Certificate in Engineering Principles (180GLH)

What will you be learning?

- Mathematics for engineering
 - the use of algebra, geometry, trigonometry and graphs
 - exponentials, logarithms and calculus
 - application of statistics and probability in engineering problems
- Science for engineering
 - basic scientific principles of mechanical, electrical and electronic engineering
 - properties of materials
 - basic principles of fluid mechanics and thermal physics
- Principles of mechanical engineering
 - systems of forces and types of loading on mechanical components
 - levers, pulleys and gearing
 - the properties of beams and the principles of dynamic systems

Methods of assessment

All units are externally assessed in separate 90-minute written exams. There are no internally assessed units (no coursework).

What are lessons like?

Lessons will be a mixture of theoretical and practical work. The “hands-on” activities will allow students to test theories and to deepen their understanding by allowing them to experience directly the application of engineering principles. It is ideally suited to students who are organised, motivated and who are competent in both maths and physics.

How will we work with employers and the community?

Employers will support teaching and learning by:

- sharing industrial experience and expertise
- providing opportunities to visit engineering workplaces
- setting projects or providing the context for project work
- running workshops in school

There are industrial links with:

- Angus Fire
- Arrow Energy
- Atkinson Vos
- Gilkes
- Hughes Electrical Contractors
- James Cropper Ltd.
- Mardix
- Siemens
- Thomas Consulting
- WDP chartered architects

Where can this pathway lead?

This qualification could provide entry to employment through an apprenticeship in engineering, for example an advanced apprenticeship.

This qualification could also support an application to a higher education course such as a degree in engineering if taken alongside complementary subjects, such as A-levels in maths and physics (or another relevant subject). However, this qualification is the equivalent of half an A-level and therefore will only carry half the UCAS tariff points. Check individual university entry requirements.