

KS4 Curriculum handbook subject page

1. Subject

Engineering - Cambridge National

2. Syllabus

OCR

3. What will I learn?

There are 3 main units in this program of study

- R038: Principles of engineering design
- R039: Communicating designs
- R040: Design, evaluation and modelling

4. How will I be assessed?

- R038: Principles of engineering design (External Assessment)
- R039: Communicating designs (Centre Assessed Project)
- R040: Design, evaluation and modelling (Centre Assessed Project)

Unit R038 is worth 40%, with the two Centre assessed projects worth 30% each. You will be graded between Level 1 pass through to Level 2 Distinction*

5. How will this prepare me for my next steps?

Students will develop skills, knowledge and understanding through these qualifications which are relevant to both work and further study. It will support progression into employment through work-placed or college-based apprenticeships in areas such as Engineering and Manufacturing. It will also support students progressing to A Levels or to Cambridge Technical Level 3 in engineering.

6. Contribution to UTC/Studio aims

We provide this course to make sure that the next generation of young engineers is equipped with the skills demanded by employers in the engineering community. The Cambridge Nationals in Engineering provide sufficient breadth to maintain the skills central to engineering while also allowing specialist skills to be developed.

Within this qualification we aim to create a series of real-world engineering projects, tied to our employer partners, giving each learner the skills that will help them adapt to the challenges of working in a real-life engineering environment.

7. Careers/job ideas

There are lots of different careers in engineering. Some examples of areas of work are

- Defense
- Space
- Energy
- Transport
- Environmental
- Medical and pharmaceutical
- Construction
- Marine
- Food and drink.

And the following potential main areas of expertise are

- Design
- Research and prototype development
- Production
- Installation and maintenance
- Safety and quality assurance.

KS5 Curriculum handbook subject page

1. Subject

L3 Engineering – Cambridge Technical

2. Syllabus

OCR

3. What will I learn?

Within the Engineering suite there are a number of units. These are listed below

Mandatory units

01 Mathematics for Engineering

02 Science for Engineering

03 Principles of Mechanical Engineering

04 Principles of Electrical and Electronic Engineering

2 optional units – from the below list

05 Electrical and Electronic Design

09 Mechanical Design

10 Computer Aided Design (CAD)

11 Materials Science

17 Computer Aided Manufacture (CAM)

20 Business for Engineering

22 Engineering and the Environment

4. How will I be assessed?

The assessment of the suite of units is straight forward:

The mandatory units are external examination assessment, made of a 60 mark 1hr 30 minute assessment, and are graded from near pass through to distinction

The Optional units are all internally assessed projects. They are awarded grades pass through to distinction.

The 6 units are equally weighted and will go together to form an overall qualification graded from pass through to distinction*

5. How will this prepare me for my next steps?

Students will develop skills, knowledge and understanding through these qualifications which are relevant to both work and further study

This qualification could provide entry to employment through an apprenticeship in engineering. For example: Advanced Apprenticeships in Manufacturing Engineering, Power Engineering or Engineering Environmental Technologies.

The qualification could also lead directly to employment in engineering such as electrical and electronic engineering, mechanical engineering and design, automation, systems and control and manufacturing.

As part of an academic study programme, this qualification could also form part of the learner's basis for application to a Higher Education course in Engineering, alongside complementary subjects, such as GCEs in Maths and/or Physics or other applied qualifications.

6. Contribution to UTC/Studio aims

The Cambridge Technicals course allows us to prepare students for an ever-expanding career field. Here at UTC/Studio we make sure students learn the key principles, as well as develop up-to-date skills, so they are equipped to stay at the forefront of developments and technological advancements in engineering.

We ensure that students progress, not only their knowledge of engineering, but how to work in a professional real-life environment through our vast career links. This allows students to be in a great position in terms of their future prospects.

7. Careers/job ideas

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- Construction
- Marine
- Food and drink.

And the following potential main areas of expertise are

- Design
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- Installation and maintenance
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