

Engineering - Manufacture

Number of Exams:

1

Controlled Assessments:

3

What are the aims of this course?

Engineering manufacture is a discipline of engineering dealing with different manufacturing practices and processes using machines, tools and equipment that turn raw materials to new products.

What will I learn?

The Cambridge Nationals in Engineering Manufacture is aimed at learners who wish to study the processes involved in manufacturing new engineered products. Learners are provided with the knowledge and skills required to operate manufacturing tools and equipment used to make products from the requirements of a design specification. Learners will develop their understanding of the processes and systems required to transfer a design concept into a product.

Progression and Career Opportunities

The Cambridge Nationals in Engineering Manufacture Level 1/Level 2 provides a good foundation for learners in post-16 education, or to entry level job roles within the sector.

Achievement at Level 2 provides a suitable foundation for further study within the sector through progression on to other vocational qualifications at Level 3, such as the Technical Award Level 3 in Engineering or

Electrical/Electronic Engineering. Successful learners at level 2 may also consider general qualifications at Level 3 such as GCE AS or A Levels in Engineering or Design and Technology- Product Design.

Electrical/Electronic Engineering or Construction. Successful learners at level 2 may also consider general qualifications at Level 3 such as GCE AS or A Levels in Engineering or Design and Technology- Product Design.

Further Information

Engineering roles and employment: Public Works industrial Engineer, IT, Aviation and Aerospace, Water Resources, Civil Engineer, Power Engineer, Mechanical Power, Agriculture and Food , Material Engineer, Machinist , Computer Engineer, Electrical Engineer, Construction manager.

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Course Outline

The qualification has 4 components that focus on the assessment of knowledge, skills and practices. These are all essential to developing a basis for progression and therefore learners need to demonstrate attainment across all components in order to achieve the qualification.

Unit Titles	Content	% Unit is Worth
R109: Engineering materials, processes and production	Students develop their understanding of a wide range of engineering materials and how their properties and characteristics impact on a design specification. They also examine different production processes and their applications	25% (Exam with 1 resit)
R110: Preparing and planning for manufacture	Students plan and apply appropriate processes to make pre-production product using hand-held tools, measuring and marking equipment safely. They then carry out a range of manually controlled machining operations and perform quality control checks to review their finished pre-production product.	25%
R111: Computer aided manufacturing	Students explore the role of computer applications in the design and manufacture of engineered products by creating computer-aided design (CAD) drawings to produce a batch of computer numerical control (CNC) manufactured examples of a product. They investigate methods used to compare items manufactured by manually controlled and CNC production, and develop their understanding of how computer control is used to produce engineered products in high-volume.	25%
R112: Quality control of engineered products	Students develop their knowledge and understanding of the techniques and procedures used, including 'lean processes' to ensure the quality of engineered products. They produce and implement a detailed set of procedures for the quality control of engineered products in a 'real world' situation involving high-volume manufacture of products	25%