UNIVERSITY Apprenticeships

HIGHER EDUCATION

BTEC NATIONAL EXTENDED CERTIFICATE IN

ENGINEERING

UNIT C - Modelling
Develop a 3D CAD model for a thin walled product and a fabricated product that can be used as part of other engineering processes

UNIT B - 2D Drawing
Develop 2D detailed CAD drawings of an engineered product that can be used as part of other engineering processes

UNIT A - 3D Drawing
Develop a 3D CAD model of an engineered product that can be used as part of other engineering processes

AO2 Engineering Design
Apply knowledge and understanding of engineering methods, processes, features and procedures to iterative design

AO3 Engineering Analysis
Look at information and data to find connections between different engineering ideas, processes, materials, and rules.

AO5 Communicating Designs
Develop and communicate design solutions with appropriate justification

COMPUTER AIDED DESIGN IN ENGINEERING

Learners develop 2D detailed drawings and 3D models using CAD

Internal assessment.

AO1 Basic Knowledge
Demonstrate knowledge and understanding of engineering products and design

AO4 Evaluations
Evaluate engineering product design ideas, manufacturing processes and other design choices

AO3 Basic Knowledge
Demonstrate an understanding of electrical, electronic and mechanical principles to solve engineering problems

ENGINEERING PRODUCT DESIGN AND MANUFACTURE

Learners will explore engineering product design and manufacturing processes and will complete activities that consider function, sustainability, materials, form and other factors.

External assessment.

AO5 Application Of Skills
Integrate and apply electronic and mechanical principles to develop an engineering solution

AO4 Problem Solving
Analyse information and systems to solve engineering problems

AO2 Mathematics
Perform mathematical procedures to solve engineering problems.

ENGINEERING PRINCIPLES

UNIT C – Application of Safety
Carry out engineering processes safely to manufacture a product or to deliver a service effectively as a team

Learners apply mathematical and physical science principles to solve electrical, electronic and mechanical based engineering problems.

External assessment.

AO1 Introduction to Engineering
Recall basic engineering principles and mathematical methods and formulae.

DELIVERY OF ENGINEERING PROCESSES SAFELY

YEARS 12 /13

UNIT B – Computer Aided Design
Develop two-dimensional computer-aided drawings that can be used in engineering processes

UNIT A – Safety Awareness
Examine common engineering processes to create products or deliver services safely and effectively as a team

Learners explore how processes are undertaken by teams to create engineered products or to deliver engineering services safely.

Internal assessment.

CHURCHMEAD SCHOOL