

Engineering Studies

(VCert Engineering)



KS4 Curriculum Breakdown



Year 10 NCFE Level ½ Technical Award		Year 11 NCFE Level 2 Technical Award.	
HT1	Unit 1 LO1.1 Understand engineering disciplines- <ul style="list-style-type: none"> • Mechanical • Electrical/electronic • Aerospace • Communications • Chemical • Civil • Automotive • Biomedical • Software 	Unit 2 – Introduction to engineering drawing External examined assessment. <ul style="list-style-type: none"> • Systems of measurements • Units of measurements • Measuring devices • Scale and proportion • 2D orthographic drawing • 3D Isometric drawing • CAD Programme 	
HT2	Unit 1 LO1.2 The Health and Safety Legislation Governing Engineering <ul style="list-style-type: none"> • Health and Safety at work Act • PPE at work regulations • Manual Handling operations 	Preparation and revision for exam. Sit 1 st attempt of unit 2 exam. Unit 3 and 4 combined,	

	<ul style="list-style-type: none"> Control of Substances Hazardous to Health (COSHH) Reporting of Injuries, Disease and Dangerous Occurrences Regulations (RIDDOR) <p>Unit 1 LO3: Understand how to read engineering drawings</p> <ul style="list-style-type: none"> Drawing Conventions British Standards <p>Unit 1 LO5: Understand engineering tools, equipment and machines</p> <ul style="list-style-type: none"> Tools, Equipment and Machines Marking out Modification Joining Finishing Safe and correct use Control Measures 	<p>Students will complete practical pieces alongside written evidence to show understanding of tools and equipment for engineering and materials and their properties within engineering,</p> <ul style="list-style-type: none"> Use common hand tools Use common portable/ power tools Use common fixed equipment Work safely in the workshop Identify materials and their properties Preparing materials Marking out Modifying materials Joining materials Finishing techniques
HT3	<p>Unit 1 LO4: Understand the properties and characteristics of engineering materials and why specific materials are selected for engineering applications.</p> <ul style="list-style-type: none"> Identification of Materials Properties of materials Characteristics of materials <p>Unit 1 L02 Understand how science and mathematics is applied in engineering</p> <ul style="list-style-type: none"> SI units of Measurement Application of SI units of Measurement in products Equations used and application 	<p>Preparation and revision for exam resit. Sit 2nd and final attempt of unit 2 exam.</p> <p>Unit 3 and 4 combined, Students will complete practical pieces alongside written evidence to show understanding of tools and equipment for engineering and materials and their properties within engineering,</p> <ul style="list-style-type: none"> Use common hand tools Use common portable/ power tools Use common fixed equipment Work safely in the workshop Identify materials and their properties Preparing materials Marking out Modifying materials Joining materials <p>Finishing techniques</p> <p>Unit 3 and 4 combined, Students will complete practical pieces alongside written evidence to show understanding of tools and equipment for engineering and materials and their properties within engineering,</p>

		<ul style="list-style-type: none"> • Use common hand tools • Use common portable/ power tools • Use common fixed equipment • Work safely in the workshop • Identify materials and their properties • Preparing materials • Marking out • Modifying materials • Joining materials
HT4	<ul style="list-style-type: none"> • Unit 1 Mock Paper • Revision for Unit 1 exam • Unit 1 Exam – 40% of course <p>Unit 2 LO1 Produce hand drawn engineering drawings</p> <ul style="list-style-type: none"> • Freehand sketches • Isometric drawing • Orthographic drawing 	<p>Finishing techniques</p> <p>Unit 3 and 4 combined, Students will complete practical pieces alongside written evidence to show understanding of tools and equipment for engineering and materials and their properties within engineering,</p> <ul style="list-style-type: none"> • Use common hand tools • Use common portable/ power tools • Use common fixed equipment • Work safely in the workshop • Identify materials and their properties • Preparing materials • Marking out • Modifying materials • Joining materials • Finishing techniques <p>Submission for unit 3 and 4</p>
HT5	<p>Unit 2 LO2: Produce Computer Aided Design (CAD) engineering drawings</p> <ul style="list-style-type: none"> • Isometric drawing • Orthographic drawing <p>Synoptic assessment practice 1 –</p> <ul style="list-style-type: none"> • Application of drawing techniques. <p>Unit 2 LO3: Demonstrate production planning techniques</p> <ul style="list-style-type: none"> • Risk Assessment • Production Plan 	<p>Unit 1 Introduction to engineering and industry.</p> <p>LO1: Know what engineering is</p> <ul style="list-style-type: none"> • Explain engineering • Identify engineering sectors • Skills needed to be an effective engineer • Health safety in the workplace. <p>LO2: Understand the advantages and disadvantages of engineering on society</p> <ul style="list-style-type: none"> • Engineering organisations • Manufacturing in industry • Impact on society

	<p>Synoptic assessment practice 1 –</p> <ul style="list-style-type: none"> • Application of production planning. 	<p>LO3: Understand the use of science, technology and maths in engineering.</p> <p>Submission for unit 1</p>
<p>HT6</p>	<p>Unit 2 LO4: Demonstrate processing skills and techniques applied to materials for a manufacturing task.</p> <ul style="list-style-type: none"> • Prepare materials • Modify shape • Join materials • Finish materials • Preparation and use in a safe manor of machines • Control measures for machines <p>Synoptic assessment practice 1 –</p> <ul style="list-style-type: none"> • Application of skills and techniques and safe application in the classroom 	<p>Additional time and support for students who have not completed or met criteria for their target grade.</p>