

GCSE Engineering Department 2023-2024

	YEAR 10	YEAR 11
TERM 1	<p>NCFE: UNIT 1 ENGINEERING DISCIPLINES Students will understand a variety of engineering disciplines, how they have shaped our world and what they involve.</p> <ul style="list-style-type: none"> • Mechanical Engineering • Electrical Engineering • Electronic Engineering • Aerospace Engineering • Telecommunications Engineering • Chemical Engineering • Civil Engineering • Biomedical Engineering • Software Engineering 	<p>APPROACH TO UNIT 2. Application of course content covered in year 10:</p> <ul style="list-style-type: none"> • Focus on Engineering drawings • Practical development of engineering skills. • Overview of past synoptic challenges and their layout. • Evaluation and analysing of processes. • Scaffolded examples of layout, expectations & content.

<p>TERM 2</p>	<p>APPLICATION OF SCIENCE & MATHS IN ENGINEERING. Students will understand how Science and Math's are applied in engineering, Health & safety legislation and how to read engineering drawings. Students will be encouraged to work together in teams to overcome engineering challenges in order to develop the necessary skills of problem solving as well as team work.</p> <ul style="list-style-type: none"> • Si Units • Scientific calculations • Mathematical calculations 	<p>APPROACH TO UNIT 2. Application of course content covered in year 10:</p> <ul style="list-style-type: none"> • Material testing and data collecting. • Overview of past synoptic challenges and their layout. • Testing and selection of materials. • Content • Layout • Evidence • Testing • Evaluating • Standards
<p>TERM 3</p>	<p>PROPERTIES & CHARACTERISTICS OF MATERIALS. Students will gain knowledge in the following areas: Properties and characteristics of engineering materials and know why specific materials are selected for engineering applications, engineering tools, equipment and machines.</p> <ul style="list-style-type: none"> • Application of Science in testing for mechanical properties and collecting data to identify what materials will be better suited. 	<p>NCFE SYNOPTIC TASK: NEA UNIT 2. Students will be working on their Synoptic task set out by NCFE. This task makes up 60% of their overall grade for this qualification. The task will be completed within lesson time on the school premises. Students will complete this task independently using all the knowledge and experience gained over the course of this qualification.</p>



<p>TERM 4</p>	<p>ENGINEERING DRAWINGS. Students will learn to produce hand-drawn engineering drawings, Computer Aided Design (CAD) engineering drawings, demonstrate production planning techniques, demonstrate processing skills and techniques applied to materials for a manufacturing task and produce a risk assessment.</p> <ul style="list-style-type: none"> • Third angle orthographic • Isometric • 3D & 2D • Freehand • British standards • Scales (Math's) 	<p>NCFE SYNOPTIC TASK: NEA UNIT 2 Students will be completing work on their Synoptic task set out by NCFE and handing it in for grading. This task makes up 60% of their overall grade for this qualification. The task will be completed within lesson time on the school premises.</p>
<p>TERM 5</p>	<p>UNIT 2: MOCK SYNOPTIC TASK Students will use the knowledge and skills gained over the course of the year to answer a Mock Engineering brief. They will be required to produce a portfolio of evidence while answering this brief along the way developing the necessary skills needed to complete the practical segment of the level 1/2 Engineering qualification.</p>	