Level 1 / 2 Technical Award in Engineering	**Intent** NCFE Engineering gives students a focussed understanding of the 'world of engineering', its importance in society as a whole and the role that engineer's play within it. Students will develop knowledge and understanding of how different engineering disciplines have shaped the world we live in. This qualification will enable students to gain an understanding of how science and maths are applied to engineering solutions and how to read and interpret engineering drawings. There will opportunities for students to explore the properties and characteristics of materials in relation to why specific materials are selected for engineering applications. The learner will understand use of tools and equipment within the engineering industry which will provide engineering and workshop skills in addition to computer aided design and Computer Aided Manufacture.				
Year 10 (Unit 1)	**LO1: Understand engineering disciplines** **September - December**	**LO2: Understand how science and mathematics is applied in engineering September - December**	**LO3: Understand how to read engineering drawings** **December to February**	**LO4: Understand the properties and characteristics of engineering materials February - May**	**LO5: Understand engineering tools, equipment and machines** **May to June**
Knowledge (facts, information, concepts and key terminology)	Engineering disciplines through projects and products. • Mechanical, Electrical, Aerospace, Communications, Chemical, Civil, Automotive, Biomedical, Software. The Health and Safety Legislation Governing Engineering. • H&S at Work Act, PPE, MHOR, COSH, RIDDOR.	Application of SI Units of Measurements. • Current, Luminosity, Temperature, Mass, Length, Amount of substance, Time. Equations used to Describe and Calculate Energy, Forces and Motion, Electrical, Geometry. • Energy, Forces and motion, Electricity, Geometric.	Reading Engineering Drawings. • Lines, Tolerance, Title block, Scale, System of measurement, 2D projection, 3D projection, BS 8888.	Properties and Characteristics of Materials. • Chemical, Electrical and magnetic, mechanical, Optical, Thermal, Aesthetics, Environmental impact. • Metals, Polymers, Woods, Ceramics, Composites.	Tools, Equipment and Machines. • Marking-out, Modification, Joining, Finishing. Safe and Correct Use. • Control measures
Understanding (ability to connect and synthesise knowledge within a context)	In this learning outcome, the learner will know and understand how different engineering disciplines are applied to projects and products. The learner will know and understand the health and safety legislation that influences engineering. The learner will know and understand the personal safety measures for each engineering discipline including personal protective equipment and an understanding of the relevant health and safety requirements to ensure they comply with the following legislation	In this learning outcome the learner will understand how SI units of measurement are used in engineering products and projects. In this learning outcome the learner will understand how mathematical and scientific equations are used in engineering disciplines to calculate the properties of energy, forces and motion, electrical and geometry in the development of products and projects.	In this learning outcome the learner will be able to read and interpret engineering drawings accurately. The learner will be able to understand specific drawing conventions used throughout the engineering industry, and the purpose of using British Standards.	In this learning outcome, learners will know and understand the properties and characteristics of materials and why they are selected for engineering products and projects.	Learners will know and understand the health and safety, control measures, safe and correct use of common tools, equipment and machines used in the engineering industry for manufacturing including those used for marking-out, cutting, modifying, joining and finishing.
Skills (successful application of knowledge and understanding to a specific task)	The learner will understand how specific engineering projects and products have shaped the modern world. The learner will know and understand the personal safety measures for each engineering discipline.	The learner will be able to use and apply SI units of measurements to products and projects. Be able to apply equations in projects and products.	The learner will be able to apply systems of measurement, measuring devices, scale and proportion in engineering drawings.	The learner will be able to recall properties and characteristics of engineering materials and apply their knowledge of why specific materials are selected for engineering applications.	The learner will be able to apply their knowledge of various tools and processes including marking-out, modification, joining, finishing. Able to recognise and carry out control measures in both theory and practical situations.
Formal Assessments (those done by all/vast majority of the cohort)	Students undertake multiple low stakes testing throughout this year. These low stake tests are mostly focussed on the longer, extended answer questions (9 mark). Students also take a mock exam in the Autumn term prior to their final exam in March. Students who fail to achieve the grade predicted/desired will have the opportunity to resit in the November of year 11 with appropriate intervention. After the formal exam in March students will be assessed on their practical making skills. The practical project will be assessed again the NEA grade descriptors for that particular assessment objective.		**Assessment Objectives:** LO1: Understand engineering disciplines LO2: Understand how science and mathematics is applied in engineering LO3: Understand how to read engineering drawings LO4: Understand the properties and characteristics of engineering materials and know why specific materials are selected for engineering applications LO5: Understand engineering tools, equipment and machines	
By the end of the year students on course for at least a Level 2 Pass in Engineering will… Students on track for at least a level 2 pass in this qualification will need to demonstrate the knowledge and understanding in the following areas to a moderate level. The learner will develop knowledge and understanding of how different engineering disciplines have shaped the world we live in. The learner will gain an understanding of how science and maths are applied to engineering solutions and how to read and interpret engineering drawings. The learner will have the opportunity to explore the properties and characteristics of materials in relation to why specific materials are selected for engineering applications. The learner will also understand use of tools and equipment within the engineering industry.				