



Key Stage 4 Engineering

The following units prepare the students for the WJEC Level 2 GCSE Engineering qualification which consists of three modules that are as follows; an externally marked examination, a design unit and a production unit.

| YEAR GROUP | Unit 1 What is Engineering? | Unit 2 Communication Within Engineering | Unit 3 Machining Techniques | Unit 4 Engineering Design | Unit 5 Production of Electronic Solutions |
|------------|---|--|--|---|---|
| 10-11 | Students look at what engineering is, the types of engineering that exist, what careers are available in each sector and what the career paths for typical professions within engineering look like. Preparation for unit 1 | Pupils look at the role of different documents that are used in the common areas of engineering, what each document does and produce appropriate examples that form the basis of coursework in year eleven. Preparation for unit 2 | Pupils are trained how to perform basic machine operations using the equipment available in school including its maintenance and care. Pupils understand the difference between CNC production and manual production, the advantages and disadvantages of each. Preparation for Unit 3 | Pupils are shown the design process that an engineer will typically follow, the requirements of each process that the documentation typically associated with each. Pupils are able to demonstrate the ability to produce a solution to a given problem. Preparation for unit 2 | Pupils are able to produce a small electronic product including the design and programming of any PCB components. Pupils are able to assemble the product and test it against a set of criteria using appropriate equipment. Preparation for Unit 3 |