

Engineering

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| 10 | Term 1 | Introduction to Engineering & Soft Jaws.The students will be designing and making a set of soft jaws.They will learn about how to work safely in a workshop, measuring accurately, marking out, use a range of hand tools and lastly produce an engineering drawing. Students will be assessed on theory content and practical project. |
| 10 | Term 2 | Drill SizerThe students will be designing and making a drill sizer. To complete this project the students will work independently using hand tools, selection of materials, the use of machines such as pillar drills and producing an effective finish to the product.Students will be assessed on theory content and practical project. |
| 10 | Term 3 | Junior HacksawThe students will be making a junior hacksaw.To make this item the students will learn how to use the milling machine, pillar drill, marking out whilst learning theory content e.g. how to produce an engineer's drawing.Students will be assessed on theory content and practical project. |
| 10 | Term 4 | Testing of MaterialsThe students will focus on an investigation about testing of materials. Using a variety of tests e.g. stress testing and Izod to see what happens to each material and the impact it has. Students will be assessed on theory content and practical project. |
| 10 | Term 5 | CAD/ CAMThe students will be learning about CAD and CAM. Using a variety of software such as 2D Design and Solidworks.Once learnt, the students will use the correct software to the CAM machinery e.g. Laser cutting and 3D Printing. Students will be assessed on theory content and practical project. |

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| 11 | Term 1 | Exam PreparationThe students will revision about a variety of different materials, health and safety and the many different engineering disciplines. Practice exams will be given for revision. |
| 11 | Term 2 | Exam PreparationThe students will practice engineering drawing by hand and on CAD. They will also learn about pulleys, scale/ proportion, tools and the safe use of machinery.Practice exams will be given for revision. |
| 11 | Term 3 | Exam PreparationThe students will practice engineering drawing by hand and on CAD. They will also learn about pulleys, scale/ proportion, tools and the safe use of machinery.Practice exams will be given for revision.Practice synoptic projectThe students will practice a synoptic project by working independently. |
| 11 | Term 4 | |
| 11 | Term 5 | |

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| 12 | Term 1 | Theory ContentThe students will focus on: Principles 01 - identifying requirements, Principle 02 - Learning from existing products and practice and Principle 03 - Implications of wider issues.Students will be assessed on theory content and practical project. |
| 12 | Term 2 | Theory ContentThe students will focus on: Principles 04 - Design thinking and communication, Principle 05 - Materials and component considerations and Principle 06 - Technical understanding part 1.Students will be assessed on theory content and practical project. |
| 12 | Term 3 | Theory ContentThe students will focus on: Principles 06 - Technical understanding part 2, Principle 06 - Technical understanding part 3 and Principle 07 - Manufacturing processes and techniques.Students will be assessed on theory content and practical project. |
| 12 | Term 4 | Theory ContentThe students will focus on: Principles 08 - Viability of Design solution and Principle 09 - Health and Safety.Students will be assessed on theory content and practical project. |
| 12 | Term 5 | NEA ProjectThe students will be starting on their NEA task. This is worth 60% of their overall grade.Students will be assessed on an end of year exam. |

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| 13 | Term 1 | NEA ProjectThe students will be focussing on their own NEA task. This is worth 60% of their overall grade. |
| 13 | Term 2 | NEA ProjectThe students will be focussing on their own NEA task. This is worth 60% of their overall grade. |
| 13 | Term 3 | NEA ProjectThe students will be focussing on their own NEA task. This is worth 60% of their overall grade. |

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13 Term 4 Revision The student will be focussing on their two theory exams. Unit H404 - Principles of Design Engineering and Problem solving in Design Engineering which both together is worth 40% of their overall grade.

13 Term 5