

## Curriculum Overview – BTEC Engineering

| Year | Overview   | Autumn 1<br>(Weeks 1 – 7)  | Autumn 2<br>(Weeks 8 – 14)  | Spring 1<br>(Weeks 15 - 20)   | Spring 2<br>(Weeks 21 - 25)   | Summer 1<br>(Weeks 26 - 32)  | Summer 2<br>(Weeks 33 - 38)     | Student Resources  |   |
|------|--|--|-----------------------------|---|---|--|---------------------------------|--|---|
| 7    | Students to become familiar with working safely in the workshop. Students need to be able to identify tools and work safely on a range of materials. Students will also develop design pages.                | <b>Simple flat shape of my own – CET SOL.</b><br>Identifying SL of a design page and tools in the workshop.<br>Development of design pages.<br>Safe working in the work shop.<br>Development of techniques with tools. |                             | <b>Your pattern in relief – CET SOL</b><br>Identifying SL of a design page and tools in the workshop.<br>Development of design pages.<br>Safe working in the workshop.<br>Development of techniques with tools.<br>Development of machines in the work shop.  |   | <b>Further reading:</b><br>www.technologystudent.com   |                                 | <b>Further reading:</b><br>www.technologystudent.com   |   |
|      |  | Links to KS4.<br>1B Designing.<br>2b,c Making.<br>2a Material Properties.  |                             | Links to KS4.<br>1B Designing.<br>2b,c Making.<br>2a Material properties.   |   |  |                                 |  |   |
|      |  | Structure launch day.  | Pattern launch day.         | Meaning launch day.   | Structure launch day.   | Pattern launch day.  | Meaning launch day.             |  |   |
| 8    | Students to gain a deeper knowledge of working within the workshop. Use of CAD and CAM is also developed in this year to deepen students understanding of the engineering industry.                          | <b>Shadow Play CET SOL</b><br>Identifying SL of a design page and tools in the workshop.<br>Development of design pages.<br>Safe working in the work shop.<br>Development of techniques with tools.                    |                             |   | <b>Learning from nature CET SOL</b><br>Identifying SL of a design page and tools in the workshop.<br>Development of design pages.<br>Safe working in the work shop.<br>Development of techniques with tools.<br>Development of machines in the work shop. |  |                                 | <b>Further reading:</b><br>www.technologystudent.com   |   |
|      |  | Links to KS4.<br>1B Designing.<br>2b,c Making.<br>2a Material Properties.  |                             |   | Links to KS4.<br>1B Designing.<br>2b,c Making.<br>2a Material properties.   |  |                                 |  |   |
|      |  | CET Structure concept lesson.  | CET Pattern concept lesson. |   | CET Meaning concept lesson.   |  | CET Performance concept lesson. |  |   |
| 9    | Students opt for engineering in year 9. This allows students to gain an even deeper understanding of the engineering industry and allows them to really experience what a GCSE in engineering would be like. | <b>Drawing unit</b><br>1 Point perspective<br>2 Point perspective<br>3 Orthographic  |                             | <b>CET Manufacturing CRAFT project 1</b><br>Hardwood box with pinned butt joints and a hinged lid, based on the traditional 4" 'hand' measurement.  |   | <b>CAD CAM Development</b><br>Use of CAD and CAM.<br>Use of 2d design.<br>Use of Laser cutter.   |                                 | <b>Disassembly project</b><br>Students disassemble a product and identify the different parts. Students then recreate a component.<br><br><b>Further reading:</b><br>CET Manufacturing Craft project 1 – <b>Peter Griffiths.</b><br>CET Manufacturing Craft project 2 designer - <b>Tony McIntyre.</b> |   |
|      |  | Links to KS4.<br>3 (exam unit).<br>Link to component 1B design development.  |                             | Links to KS4.<br>2c Making a product.<br>Link to 1b development of design – reading from blue print.  |   | Link to KS4.<br>Component 1B development of a design.<br>Link to 2c making a product.  |                                 |  | Link to KS4.<br>2a,b + c Disassembly of a product and make a component. |
|      |  |  |                             |   |   |  |                                 |  |   |
| 10   | Students to follow BTEC sow for engineering.<br><br>Core concepts.   | <b>Component 1A</b><br>Identifying engineering sectors.<br>Students will develop knowledge of engineering sectors and organisations through the completion of a detailed case study produced by the learner.           |                             | <b>Component 1B</b><br>Develop a prototype for a product.<br>Students for this assessment will have to build upon existing knowledge and skills involved with the design process. This will include working from a design brief, interpretation a specification, developing a solution through physical and simulated modelling of a prototype. |   | <b>Component 2A</b><br><b>Component 3 prep (exam)</b><br>Engineering products through disassembly tasks. Students skills and knowledge of manufacturing processes will include looking at tools and machinery. |                                 | <b>Further reading:</b>  |   |

|   |  |  |   |  |   |   |
|---|--|--|---|--|---|---|
|   |  | Assessment 1A.   | Assessment 1B.  | Assessment 2A.   |   |   |
|   |  | Links to industry. Onsite visits.                                  |   |  |   |   |
| 11  |  | Component 2A.<br>Component 3 prep.<br>C1 Engineering make process. | Component 2B.<br><b>Component 3 prep.</b><br>B2 Disassembly techniques.<br>C1 Engineering make process. | Component 2B.<br><b>Component 3 prep.</b><br><b>First exam window.</b><br><br>B2 Disassembly technique.<br>C2 Develop a production plan.               | Component 2C.<br>B3 Product design specification (PDS). | Further reading:<br>Student textbook available online<br><a href="http://www.technologystudent.com">www.technologystudent.com</a> |
|   |  | Component 2A.<br>Component 3 prep.<br>C1 Engineering make process. | Component 2B.<br><b>Component 3 prep.</b><br>B2 Disassembly techniques.<br>C1 Engineering make process. | Component 2B.<br><b>Component 3 prep.</b><br><b>First exam window.</b><br><br>B2 Disassembly technique.<br>C2 Develop a production plan.               | Component 2C.<br>B3 Product design specification (PDS). |   |
|   |  | Assignment 2A.   | Assignment 2B.  | Assignment 2C.   |   |   |
| Support sessions and revision sessions available.               |  |  |   |  |   |   |
| <b>Notes:</b><br>There is no tiered entry for BTEC Engineering. |  | <b>Examination Specification:</b><br>BTEC TECH AWARD Engineering.  |   | <b>Homework Portal:</b><br>All homework will be set on Go 4 Schools.   |   |   |
|   |  |  |   | <b>Further resources:</b><br>Websites: BBC Bitesize – KS3 and KS4 Technology, <a href="http://www.technologystudent.com">www.technologystudent.com</a> |   |   |