

**UTC Engineering Department Learning Cycles 2019 – Year 11 Course Outline**

<b>Cycle 2.6</b>	<b>Cycle 2.7</b>	<b>Cycle 2.8</b>	<b>Cycle 2.9</b>	<b>Cycle 2.10</b>
<p align="center"><b><u>Unit 2 – Investigating an Engineered Product</u></b> Topics</p> <p>A1: Technical specification B1: Selection of materials and components</p>	<p align="center"><b><u>Unit 2 – Investigating an Engineered Product</u></b> Topics</p> <p>B2: Environmental impact B3: Alternative materials</p>	<p align="center"><b><u>Unit 2 – Investigating an Engineered Product</u></b> Topics</p> <p>C1: Selection of production processes C2: Environmental impact</p>	<p align="center"><b><u>Unit 2 – Investigating an Engineered Product</u></b> Topics</p> <p>C3: Comparing production processes</p>	<p align="center"><b><u>Unit 2 – Investigating an Engineered Product</u></b> Topics</p> <p>D1: Quality control (QC) D2: Quality assurance (QA)</p>
<p align="center"><b><u>Unit 31 – Production Planning for Engineering</u></b> Topics</p> <p>A1: Scales of production</p>	<p align="center"><b><u>Unit 31 – Production Planning for Engineering</u></b> Topics</p> <p>A2: Manufacturing processes A3: Types of equipment</p>	<p align="center"><b><u>Unit 31 – Production Planning for Engineering</u></b> Topics</p> <p>B1: Production plans</p>	<p align="center"><b><u>Unit 31 – Production Planning for Engineering</u></b> Topics</p> <p>B2: Product specification</p>	<p align="center"><b><u>Unit 31 – Production Planning for Engineering</u></b> Topics</p> <p>B3: Related data and information</p>
<p align="center"><b><u>Unit 38 – Materials Used in Engineered Products</u></b> Topics</p> <p>A1: Properties of materials A2: Characteristics of materials</p>	<p align="center"><b><u>Unit 38 – Materials Used in Engineered Products</u></b> Topics</p> <p>B1: Ferrous metals, non-ferrous metals and alloys used in engineering B2: Composite materials used in engineering B3: Polymer materials used in engineering</p>	<p align="center"><b><u>Unit 38 – Materials Used in Engineered Products</u></b> Topics</p> <p>B4: Smart materials used in engineering B5: Treatments B6: Engineering sectors</p>	<p align="center"><b><u>Unit 38 – Materials Used in Engineered Products</u></b> Topics</p> <p>C1: Life cycle of engineering materials C2: Forms of material supply</p>	<p align="center"><b><u>Unit 38 – Materials Used in Engineered Products</u></b> Topics</p> <p>C3: Engineering sectors D1: Material investigation</p>
<p align="center"><b><u>Unit 39 – Program and Use a Computer Numerical Control Machine</u></b> Topics</p> <p>A1: Part programs</p>	<p align="center"><b><u>Unit 39 – Program and Use a Computer Numerical Control Machine</u></b> Topics</p> <p>A2: Performance of the CNC part programs</p>	<p align="center"><b><u>Unit 39 – Program and Use a Computer Numerical Control Machine</u></b> Topics</p> <p>B1: Working Safely B2: Simulate a CNC part program</p>	<p align="center"><b><u>Unit 39 – Program and Use a Computer Numerical Control Machine</u></b> Topics</p> <p>B3: Prepare a CNC machine for manufacture</p>	<p align="center"><b><u>Unit 39 – Program and Use a Computer Numerical Control Machine</u></b> Topics</p> <p>C1: Safely manufacture a part using a CNC machine C2: Quality assurance</p>
<b>Keywords</b>	<b>Keywords</b>	<b>Keywords</b>	<b>Keywords</b>	<b>Keywords</b>
<b>Topic Assessments Used</b>	<b>Topic Assessments Used</b>	<b>Topic Assessments Used</b>	<b>Topic Assessments Used</b>	<b>Topic Assessments Used</b>