

What are the aims and intentions of this curriculum?

This qualification is intended for Post-16 learners who want to continue their education through applied learning and who aim to progress to higher education and ultimately employment. It aims to provide a coherent introduction to study of the engineering sector.

Term	Topics	Knowledge and key terms	Skills developed	Assessment
Autumn 1	Units: 1 - Engineering Principles 2 - Delivery of Engineering Processes Safely as a Team	Unit:1 <ul style="list-style-type: none"> Algebraic and trigonometric mathematical methods Static engineering systems Dynamic engineering systems Fluid engineering systems Static and direct current electricity and circuits Magnetism and electromagnetic induction Single-phase alternating current Unit: 2 <ul style="list-style-type: none"> Common engineering processes Principles of engineering drawing Principles of effective teams 	Unit: 1 -Learners apply mathematical and physical science principles to solve electrical-, electronic- and mechanical-based engineering problems. Unit: 2 - Learners explore how processes are undertaken by teams to create engineered products or to deliver engineering services safely.	Unit: 1 - The unit will be assessed through one paper of 80 marks lasting two hours that will be set and marked by Pearson. Learners will be assessed through a number of short- and long-answer problem-solving questions. Unit: 2 - Learners will produce evidence that evaluates the relative merits of using different common engineering processes to manufacture a given product or to deliver a given service, by contrasting the advantages and limitations of the chosen processes and of using other possible processes.
Autumn 2	Units: 1 - Engineering Principles 2 - Delivery of Engineering Processes Safely as a Team	Unit:1 <ul style="list-style-type: none"> Algebraic and trigonometric mathematical methods Static engineering systems Dynamic engineering systems Fluid engineering systems Static and direct current electricity and circuits Magnetism and electromagnetic induction Single-phase alternating current Unit: 2 <ul style="list-style-type: none"> Common engineering processes Principles of engineering drawing Principles of effective teams 	Unit: 1 -Learners apply mathematical and physical science principles to solve electrical-, electronic- and mechanical-based engineering problems. Unit: 2 - Learners explore how processes are undertaken by teams to create engineered products or to deliver engineering services safely.	Unit: 1 - The unit will be assessed through one paper of 80 marks lasting two hours that will be set and marked by Pearson. Learners will be assessed through a number of short- and long-answer problem-solving questions. Unit: 2 - Learners will produce evidence that evaluates the relative merits of using different common engineering processes to manufacture a given product or to deliver a given service, by contrasting the advantages and limitations of the chosen processes and of using other possible processes.

Spring 1	<p>Units:</p> <p>1 - Engineering Principles</p> <p>2 - Delivery of Engineering Processes Safely as a Team</p>	<p>Unit:1</p> <ul style="list-style-type: none"> • Algebraic and trigonometric mathematical methods • Static engineering systems • Dynamic engineering systems • Fluid engineering systems • Static and direct current electricity and circuits • Magnetism and electromagnetic induction • Single-phase alternating current <p>Unit: 2</p> <ul style="list-style-type: none"> • Common engineering processes • Principles of engineering drawing <p>Principles of effective teams</p>	<p>Unit: 1 -Learners apply mathematical and physical science principles to solve electrical-, electronic- and mechanical-based engineering problems.</p> <p>Unit: 2 - Learners explore how processes are undertaken by teams to create engineered products or to deliver engineering services safely.</p>	<p>Unit: 1 - The unit will be assessed through one paper of 80 marks lasting two hours that will be set and marked by Pearson. Learners will be assessed through a number of short- and long-answer problem-solving questions.</p> <p>Unit: 2 - Learners will produce evidence that evaluates the relative merits of using different common engineering processes to manufacture a given product or to deliver a given service, by contrasting the advantages and limitations of the chosen processes and of using other possible processes.</p>
Spring 2	<p>Unit:</p> <p>1 - Engineering Principles</p>	<p>Unit:1</p> <ul style="list-style-type: none"> • Algebraic and trigonometric mathematical methods • Static engineering systems • Dynamic engineering systems • Fluid engineering systems • Static and direct current electricity and circuits • Magnetism and electromagnetic induction • Single-phase alternating current 	<p>Unit: 1 -Learners apply mathematical and physical science principles to solve electrical-, electronic- and mechanical-based engineering problems.</p>	<p>The unit will be assessed through one paper of 80 marks lasting two hours that will be set and marked by Pearson. Learners will be assessed through a number of short- and long-answer problem-solving questions.</p>
Summer 1	<p>Unit:</p> <p>1 - Engineering Principles</p>	<p>Unit:1</p> <ul style="list-style-type: none"> • Algebraic and trigonometric mathematical methods • Static engineering systems • Dynamic engineering systems • Fluid engineering systems • Static and direct current electricity and circuits • Magnetism and electromagnetic induction • Single-phase alternating current 	<p>Unit: 1 -Learners apply mathematical and physical science principles to solve electrical-, electronic- and mechanical-based engineering problems.</p>	<p>The unit will be assessed through one paper of 80 marks lasting two hours that will be set and marked by Pearson. Learners will be assessed through a number of short- and long-answer problem-solving questions.</p>

Summer 2

Unit:
41: Manufacturing
Secondary Machining
Processes

Unit:41

- Traditional secondary machining processes
- Health and safety requirements when setting up secondary process machines
- Features of traditional secondary machining processes

- Lessons learned from machining a component

Unit: 41 - Learners explore and carry out secondary machining processes to manufacture shapes by the safe removal of material.

Learners will produce evidence that includes a balanced evaluation of the secondary machining processes, including energy consumption, disposal of fluids and waste material for different batch sizes and why particular processes were chosen. The evidence will detail how each process will accommodate different tolerances and batch sizes and how they relate to sustainable manufacture of components.