



Personal Learning Checklist (PLC)

Subject WJEC Level 1 / 2 Engineering

Topic Revision for the Written Exam

S = I have Summarised ✓ O = I have Organised (RAG or 😊😐😞) R = I have Recalled ✓ T = I have Tested Myself ✓

I can explain....	S	O	R	T
<p>Describe engineering developments</p> <ul style="list-style-type: none"> • Engineering o Structural o Mechanical o Electronic • Engineers involved o UK o International • Key outputs • Applications • Technologies • Materials 				
<p>Explain effects of engineering achievements</p> <ul style="list-style-type: none"> • In the home • In industry • In society 				
<p>Explain how environmental issues affect engineering applications</p> <p>Environmental issues</p> <ul style="list-style-type: none"> • Use • Disposal • Recycling • Materials development • Engineering processes • Costs • Transportation • Sustainability Applications • Engineering processes • Engineering products 				
<p>Describe properties required of materials for engineering products</p> <p>Engineering products</p> <ul style="list-style-type: none"> • Structural, e.g. buildings, bridges 				

<ul style="list-style-type: none"> • Mechanical, e.g. gearbox, crane, bicycle • Electronic, e.g. mobile phone, communications, alarm Properties • Tensile strength • Hardness • Toughness • Malleability • Ductility • Conductivity • Corrosive resistance • Environmental degradation • Elasticity 				
<p>Explain how materials are tested for properties</p> <p>Tests</p> <ul style="list-style-type: none"> • Destructive tests • Non-destructive tests 				
<p>Select materials for a purpose</p> <ul style="list-style-type: none"> • Ferrous • Non-ferrous • Thermoplastics • Thermosetting plastics • Smart • Composite 				
<p>Describe engineering processes</p> <p>Processes</p> <ul style="list-style-type: none"> • Marking out • Cutting • Finishing • Preparing • Shaping • Drilling • Turning • Brazing • Joining o Permanent o Temporary fixings • Filing • Soldering 				
<p>Describe applications of engineering processes</p>				

<p>Applications</p> <ul style="list-style-type: none"> • For material removal • For shaping and manipulation • For joining and assembly • For heat and chemical treatment 				
<p>Use mathematical techniques for solving engineering problems</p> <p>Mathematical techniques</p> <ul style="list-style-type: none"> • Use of formulae <ul style="list-style-type: none"> o Ohms law o Efficiency • Areas and volumes of geometric shapes • Calculation • Measuring • Estimation • Mean • Units of measurement <ul style="list-style-type: none"> o Metric o Metres, millimetre 				
<p>Convert between isometric sketches and 3rd angle orthographic projections</p> <p>Convert</p> <ul style="list-style-type: none"> • Section views • Construction lines • Centre lines • Hidden detail • Standard conventions 				
<p>Analyse situations for engineering problems</p> <p>Analyse</p> <ul style="list-style-type: none"> • Filter information • Synthesise information • Identify salient points • Identify requirements 				
<p>Propose solutions in response to engineering problems</p> <p>Propose solutions</p> <ul style="list-style-type: none"> • Communication • Logical structure 				