

<b>SUBJECT: Engineering</b>	<b>EXAM BOARD AND CODE: WJEC 600/8645/2</b>
<b>NUMBER OF PAPERS: 1</b>	<b>LENGTH OF PAPERS:</b> <b>90 minutes</b>
<b>EQUIPMENT REQUIRED:</b> Pen, calculator, pencil, ruler, rubber, sharpener	<b>WEBSITE LINK:</b> <a href="#">WJEC ENTRY LEVEL FRAMEWORK SPECIFICATION</a>

**Topics to be revised:**

**1. Understand effects of engineering achievements**

**Developments**

- Structural, mechanical, electronic engineering
- UK and International
- Key outputs • Applications • Technologies • Materials

**Effects**

- In the home • In industry • In society

**Environmental issues**

- Use • Disposal • Recycling • Materials development • Engineering processes • Costs • Transportation • Sustainability

**Applications**

- Engineering processes • Engineering products

**2. Understand properties of engineering materials**

**Engineering products**

- Structural, e.g. buildings, bridges
- 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

**Tests**

- Destructive tests • Non-destructive tests

**Materials**

- Ferrous • Non-ferrous • Thermoplastics • Thermosetting plastics • Smart • Composite

**3. Know forming processes of engineering materials**

**Processes**

- Marking out • Cutting • Finishing • Preparing • Shaping • Drilling • Turning • Brazing
- Joining (Permanent and Temporary fixings) • Filing • Soldering

**Applications**

- For material removal • For shaping and manipulation • For joining and assembly • For heat and chemical treatment

**4. Be able to solve engineering problems**

**Mathematical techniques**

- Use of formulae; Ohms law, Efficiency
- Areas and volumes of geometric shapes
- Calculation • Measuring • Estimation • Mean
- Units of measurement; Metric, metres, millimetres, pounds, pence

**Convert**

- Section views • Construction lines • Centre lines • Hidden detail • Standard conventions

**Analyse**

- Filter information • Synthesise information • Identify salient points • Identify requirements

**Propose solutions**

- Communication • Logical structure

**Revision Tips:**

- Use mind maps and flash cards
- Try making a glossary of key words to help increase confidence with the engineering terminology
- Mind maps
- Condense notes, re-write without looking
- Make a list of questions
- Use of mnemonics
- Turn information into flow diagrams
- Past exam questions
- Get someone to test you
- Exam revision meets

**Exam Hints:**

Read the question, answer the actual question not the one you want to answer, use of technical terms.

- Learn key words for each topic
- Learn command words (explain, identify, analyse). Do you know what the question is asking you to do?
- Read the question 3 times using **CUBE** to highlight important words in the questions  
**C**ircle the command word, **U**nderline keywords, **B**lock any examples, **E**xpress your answer
- Check how many marks a question is worth. If, for example, a question is worth 3 marks, be sure to make 3 valid points in your answer
- Don't forget to check through your paper after you have completed the questions to ensure that you are happy with your responses

