OCR Cambridge Nationals Engineering Design - Revision checklist

R038: Principles of Engineering Design

The R038 unit is externally assessed and covers **four main topic areas (TAs)**:

TA1: Designing Processes

- Design strategies: linear, iterative, user-centred
- Market research techniques
- Product analysis using ACCESS FM
- Generating design ideas
- Modelling and testing designs (physical and virtual)

TA2: Design Requirements

- Understanding design briefs and specifications
- Client needs and user requirements
- Materials and manufacturing processes
- Constraints and considerations (e.g. cost, sustainability)

TA3: Communicating Design Outcomes

- Engineering drawings and conventions
- Annotation and presentation techniques
- CAD and other digital tools
- Prototypes and models

TA4: Evaluating Design Ideas

- Evaluation techniques
- Feedback and improvements
- Comparing design ideas against specifications
- Iterative improvements