**Level 1/2 OCR National in Engineering Design**

The topics covered in the examined unit are listed below. Revision resources are developed and used throughout the year in lessons based on these topics. For further information, out of lesson reference, and for content missed through absence, students are directed to the resources posted on Google Classroom.

Use the ‘How to Revise’ booklet for great tips on exam preparation techniques.

Examined topics

Linear design

Inclusive design

User-centred design

Sustainable design

Ergonomic design

Iterative design

Design brief (analysis of)

Research methods

Primary vs secondary research

Interviews

Focus groups

Ergonomics

Anthropometric data

Engineering design specification (ACCESS FM)

Product disassembly

Drawing styles:

Freehand sketching

Oblique drawing

Isometric drawing

Exploded views

Assembly drawings

Block diagrams

Flowcharts

Circuit diagrams

Wiring diagrams

2D engineering drawings:

Third angle orthographic projection

Standard drawing conventions

Drawing line types

Abbreviations used in drawings

Mechanical features shown on drawings

Computer Aided Design (advantages and limitations of)

Design:

Market pull

Technology push

Legislation

British and International Standards

Planned obsolescence

Sustainable design (6Rs)

Design for the circular economy

Modelling:

Reasons for modelling

Virtual and physical modelling

Card modelling

Block modelling

Breadboarding

3D printing

Prototyping

Needs and wants

Quantitative and qualitative criteria

Qualitative comparison with the design brief and specification

Quantitative comparison with the design brief and specification

Ranking matrices

Quality Function Deployment (QFD)

Measuring dimensions

Functionality

User testing

Design modifications and improvements

Manufacture in industry:

Wasting

Shaping

Forming

Joining

Finishing

Assembly

Production costs

Labour

Capital cost

Scale of manufacture