Chapter 1 – Design Strategies and Processes

(Weeks 1–2)

Key Terms & Definitions

Design Strategy
A planned approach used to develop a product from idea to final outcome.

Linear Design
A step-by-step process where each stage is completed once, with no revisiting.

Iterative Design
A cyclical design process where ideas are repeatedly developed, tested and improved.

User-Centred Design
A design approach focused on the needs, wants and abilities of the end user.

Inclusive Design
Designing products that are accessible and usable by as many people as possible.

Ergonomics
The study of how products fit the human body to improve comfort, safety and efficiency.

Sustainable Design
Designing products to reduce environmental impact across their lifecycle.

Design Brief
A short statement outlining what a product must do and who it is for.

Chapter 2 – Research, Specifications and ACCESS FM

(Weeks 2–3)

Key Terms & Definitions

Primary Research
Research collected directly by the designer (e.g. surveys, interviews, observations).

Secondary Research
Research gathered from existing sources (e.g. websites, books, reports).

Market Research
Research used to identify existing products, competitors and user needs.

Anthropometric Data

Measurements of the human body used to ensure products fit users correctly.

ACCESS FM

A framework used to analyse products or write specifications:

Aesthetics

Cost

Customer

Environment

Size

Safety

Function

Materials & Manufacturing

Design Specification

A detailed list of measurable requirements a product must meet.

Chapter 3 – Modelling, Prototyping and Evaluation

(Weeks 3–4)

Key Terms & Definitions

Model

A representation of a design used to test ideas before final manufacture.

Virtual Modelling

Using CAD software to create and test a digital version of a product.

Physical Modelling

Creating a real, tangible model using materials such as card, foam or plastic.

Prototype

A working version of a product used for testing and evaluation.

Evaluation

Judging how well a design meets its specification and identifying improvements.

Iterative Cycle

The repeating process of designing, making, testing and refining.

Chapter 4 – Manufacturing and Production

(Week 4)

Key Terms & Definitions

Scale of Manufacture
The quantity in which a product is made.

One-Off Production
Manufacturing a single, unique product.

Batch Production
Manufacturing products in groups.

Mass Production
Manufacturing large quantities of identical products.

Manufacturing Process
The method used to shape or assemble materials into a product.

Production Costs
The total cost of making a product, including labour and materials.

Capital Costs
Costs of machinery, tools and equipment.

Chapter 5 – Influences on Design

(Weeks 5–6)

Key Terms & Definitions

Market Pull
When consumer demand drives the development of new products.

Technology Push
When new technologies lead to the creation of new products.

British Standards (BS)
National guidelines ensuring products meet safety and quality requirements.

UKCA Marking
A conformity marking showing a product meets UK regulations.

Legislation

Laws that designers must follow, particularly relating to safety.

Planned Obsolescence

Designing products with a limited lifespan.

Chapter 6 – Sustainability and the Circular Economy

(Week 6)

Key Terms & Definitions

The 6 Rs

Strategies for sustainable design:

Rethink

Refuse

Reduce

Reuse

Repair

Recycle

Circular Economy

A system where products and materials are kept in use for as long as possible.

Environmental Impact

The effect a product has on the environment throughout its lifecycle.

Chapter 7 – Communicating Design Ideas

(Weeks 7–9)

Key Terms & Definitions

Freehand Sketch

A quick drawing used to communicate early design ideas.

Isometric Drawing

A 3D drawing showing three faces of an object at equal angles.

Orthographic Projection

A 2D drawing showing front, side and plan views.

Third Angle Projection

The standard projection method used in the UK.

Assembly Drawing

A drawing showing how parts fit together.

Exploded View

A drawing showing parts separated to explain assembly.

Chapter 8 – Working Drawings and CAD

(Weeks 8–9)

Key Terms & Definitions

Working Drawing

A detailed technical drawing used for manufacture.

Tolerance

The allowable variation in a dimension.

Line Types

Different line styles used to communicate information (e.g. centre line, hidden detail).

BS 8888

The British Standard for engineering drawings.

Computer Aided Design (CAD)

Software used to create precise digital drawings and models.

Chapter 9 – Evaluating Design Ideas and Outcomes

(Weeks 10–11)

Key Terms & Definitions

Ranking Matrix

A tool used to compare design ideas against criteria.

Quality Function Deployment (QFD)
A method that links customer needs to design decisions.

User Testing
Testing a product with real users to gather feedback.

Quantitative Data
Numerical data that can be measured.

Qualitative Data
Descriptive data based on opinions or observations.

Chapter 10 – Exam Skills and Synoptic Revision

(Week 12)

Key Terms & Definitions

Command Word
The instruction in an exam question telling students how to respond (e.g. explain, evaluate).

Justify
Give clear reasons supported by evidence.

Evaluate
Weigh up strengths and weaknesses to reach a judgement.

Synoptic Assessment
Applying knowledge from across multiple topics in one response.