Nothing complicated here, just a simple checklist for all the things you need to know for your exam... Simples!

**Processes & Manufacture**

**Product Manufacture**
- How materials are cut, shaped & formed
- Difference between quality control & quality assurance
- Produce detailed working schedules to include:
  - Flow charts
  - Production plans
- Identify Critical points QA &
- Be able to evaluate quality of products to devise suitable modifications

**Industrial & Commercial Practice: Methods of Production**
- Scale of Production
  - One-off
  - Batch
  - Mass
  - Continuous
  - J.I.T (just in time)
- CAD/CAM
  - Hand tools
  - Machine tools

**Manufacturing Systems**
- Understand commercial manufacturing is a system or group of sub-systems requiring:
  - Special buildings or work places
  - Organisation of people
  - Organisation of tools & equipment
  - Risk assessment & compliance with health & safety
  - Organisation of materials
  - Information systems to help people communicate with
  - Changing shape & form to increase their usefulness
  - Using tools & equipment to transform materials into
  - Design & production of products in a systematic way
  - Quality assurance procedures & quality checks to be made
  - Ways of safely taking care of the unwanted
  - Efficient working methods
  - Outputs of manufacture: disposing & recycling
  - Ways of looking after the environment

**Use of ICT (Information & Communication Technology)**
- Understand how ICT facilitates manufacturing functions:
  - JIT Video conferencing
  - Software sharing Stock control
  - Data transfer Remote manufacturing
  - Understanding the application of CNC (Computer Numeric Control)
  - Understand how CAD (Computer Aided-Manufacture) is used in
  - Understand how CAD/CAM allows for higher levels of accuracy.

**Manipulating & combining materials**
- How materials can be combined & processed to be more useful
- How properties can be utilised in industrial contexts
- How a range of materials can be prepared for manufacture
- Finishes: aesthetic & functional
- Pre-manufactured components & their uses

**New materials**
- Knowledge & understanding of new & smart materials:
  - Precious Metal Clays (PMC) used in jewellery manufacture
  - Corn starch polymers used in packaging
  - Thermochromic pigments used in thermal warming patches
  - Shape memory alloys
  - Quantum Tunnelling Composite (QTC) used to incorporate electronics into textiles
  - Have an awareness of the importance of the development of nanomaterials and integrated electronics in the area of D&T

**Materials & Components**

**Timber based materials**
- Pine
- Mahogany
- Ash
- Teak
- Beech

**Manufactured boards**
- MDF
- Blockboard
- Plywood
- Hardboard
- Chipboard

**Properties & Characteristics**
- Composition changes to suit production
- Sourcing
- Conversion to workable material

**Stock forms**
- Sheet sizes
- PSE (planed squared edged)
- Rough sawn
- Mouldings

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### Design & Market Influences

<table>
<thead>
<tr>
<th>Evolution of Product Design</th>
<th>Development of ideas, materials &amp; manufacturing processes</th>
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<td>Social changes</td>
<td>Cultural changes</td>
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<td>Political changes</td>
<td>Environmental changes</td>
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<td>Design movements</td>
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<td>Art deco</td>
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<td>Bauhaus</td>
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<td>De Stijl</td>
<td>Memphis</td>
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<td>Arts &amp; Crafts movement</td>
<td>Post Modernism</td>
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<td>Design Influences</td>
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<td>Design movements</td>
<td>Cultural influences</td>
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<td>Continuous improvements</td>
<td>Manufacturing Industries</td>
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<td>Technological push</td>
<td>Marketing pull</td>
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<td>Design in Practice; Product Development</td>
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<tr>
<td>Design Brief</td>
<td>Specification</td>
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<tr>
<td>Respond to research</td>
<td>Inclusive design</td>
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<tr>
<td>Accuracy in function</td>
<td>Dimensions &amp; tolerances</td>
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<tr>
<td>ICT software</td>
<td>Cad Modelling</td>
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<td>Copyright</td>
<td>Patents</td>
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<td>Registered designs</td>
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<tr>
<td>Designing starting points:</td>
<td></td>
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<tr>
<td>Natural form, pattern &amp; structure</td>
<td>Geometry &amp; maths</td>
</tr>
<tr>
<td>Detailed product analysis</td>
<td>Cultural &amp; religious influences</td>
</tr>
<tr>
<td>Packaging</td>
<td>Work of artists, designers', craftsmen &amp; technologists</td>
</tr>
<tr>
<td>Materials</td>
<td>Processes</td>
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<tr>
<td>Environmental concerns</td>
<td>Sustainability</td>
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<tr>
<td>Functions of packaging:</td>
<td></td>
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<tr>
<td>protect</td>
<td>Inform</td>
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<tr>
<td>contain</td>
<td>Transport</td>
</tr>
<tr>
<td>preserve</td>
<td>Display (promote)</td>
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<tr>
<td>Product Labelling:</td>
<td></td>
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<tr>
<td>hazards</td>
<td>Storage &amp; handling</td>
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<tr>
<td>maintenance</td>
<td>Disposal</td>
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<tr>
<td>Design protection</td>
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### Product Marketing

<table>
<thead>
<tr>
<th>Branding</th>
<th>Advertising</th>
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<tbody>
<tr>
<td>leaflets</td>
<td>Flyers</td>
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<tr>
<td>Point of sale displays</td>
<td>Packaging</td>
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<tr>
<td>Digital media</td>
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### Design in the Human Context

#### Human Factors
- Understand the wide range of human factors which can influence design, to produce inclusive products
- Access
- Anthropometrics
- 5th—95th percentile
- Social, economic & ethnic groups
- Disabled
- Religious groups
- Manufacturing systems
- Working triangles (kitchen)
- Assembly lines

#### Safety
- Safety with regard to themselves, manufacturer & user
- Moral & Legal responsibility
- Safety testing
- Risk assessment

#### Quality
- Suitable quality for the user
- Subjective criteria
- Resource availability
- Social factors
- Cost
- Commercial methods used to improve quality assurance
- Quality circles
- Team working
- BS EN ISO 9000
- Identify critical quality control points during development to improve products

### Ethical, Environmental & Sustainability Issues

<table>
<thead>
<tr>
<th>Consider ethical, environmental &amp; sustainability issues relating to:</th>
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<tbody>
<tr>
<td>Fair trade</td>
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<tr>
<td>Carbon footprint</td>
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<tr>
<td>Re-use</td>
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<tr>
<td>Repair</td>
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<tr>
<td>Rethink</td>
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</tbody>
</table>
| Knowledge & understanding of factors relating to recycling/reusing materials or products:
  - Material identification
  - Collection
  - Processing
  - Energy costs
  - Subsequent usage
  - Wasteage
| Knowledge & understanding of governing environmentally friendly products, 'Green Designs' & identify them |

#### Consumer Issues
- Knowledge & understanding of consumer groups & pressure groups and the way products are evaluated
- Which? Reports
- Standards & Agencies, implications of standards in designing
  - ISO
  - BSI
- Product legislation