**Sample Course Outline**

Materials Design and Technology

Preliminary Unit 1 and Unit 2

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# Sample course outline

# Materials Design and Technology – Preliminary

## Unit 1 and Unit 2

#### Unit 1 (notional timeframe only – may take up to whole year)

| **Week** | **Key teaching points** | **Content** |
| --- | --- | --- |
| 1 | Introduction to design, materials and workshop/studio | **Materials – nature and properties of materials**Identify, by appearance and name, materials within the chosen contextIdentify basic aesthetic properties or characteristics**Materials in context**Identify basic uses for materials within the chosen context **Design fundamentals and skills**Seek and discuss links between design processes and final products, such as design concept sketches compared to the finished productIdentify a product from its design and determine that the product and design are the same objectUse pre-prepared designs to make design choicesDecision making: make design choices based on colour and shape |
| 2–4 | Design fundamentals and skills**Task 1:** Introduction to simple design through products and materialsThe nature and properties of materials of different productsIntroduction to a design process. Look at products and materials using design fundamentals, such as colour, appearance, texture and weight **Task 1 due Week 2****Task 2:** Material differences and usesExplore differences in products and materialsLikes and preferences based on design choices and design fundamentals**Task 2 due Week 4** |
| 5–7 | Use of technology – practical skills and techniques within the design process**Task 3:** Methods of communicating design ideasStudents use simple drawing and annotation techniques to develop a product, or use pre-prepared drawings of designs to make changes by design choices**Task 3 due Week 7** | **Skills and techniques**Use pre-prepared design in developing a solutionUse simple graphic communication technologiesName and use basic equipment as appropriate to context |
| 8–15 | Use of technology – safety, production skills and techniques**Task 4:** Manufacture the productPractical skills and techniques are used in the manipulation of materials to produce the product, as applicable to context.Safety; students’ correct use of personal protective equipment (PPE) where applicableProduction management as directed by the teacher**Task 4 due Week 15** | Name and use basic equipment as appropriate to contextManipulate materials**Safety**Correct use of personal protective equipment (PPE) where applicable**Production management**Use teacher-directed design, production plans and processesWith supervision, use simple tools and/or machines safelyCommunicate and describe, in simple terms, the production processDemonstrate workshop clean-up procedures |
| 16 | Design fundamentals and skillsEvaluation of products**Task 5:** Presentation of completed product**Task 5 due Week 16** | **Design fundamentals and skills**Seek and discuss links between design processes and final products, such as design concept sketches compared to the finished product |

#### Unit 2 (notional timeframe only – may take up to whole year)

| **Week** | **Key teaching points** | **Content** |
| --- | --- | --- |
| 1 | Re-introduction to design, materials and workshop/studio | **Nature and properties of materials**Identify, by appearance and name, within the chosen context * metals – steel, aluminium, copper, brass, tin, stainless steel
* textiles – cotton, denim, linen, wool, silk
* wood – softwoods, hardwoods, manufactured boards

Identify basic aesthetic properties or characteristics, such as:* colour – bright, dull
* appearance – patterned, plain
* texture – soft, hard, smooth, rough
* weight – heavy, light

**Materials in context**Within a chosen context, identify common materials and describe their uses Name some products or objects made from common materials **Design fundamentals and skills**Identify product/s and discuss:* factors affecting design, chosen from:
* personal likes/dislikes
* aesthetics – appearance, form
* function – purpose, use
* safety – design requirements
* cost – compare similar products

Seek and discuss links between designs and final productsUse a guided design method or pre-prepared designed components to develop own solutionDecision making: make design choices based on factors affecting design |
| 2–4 | Design fundamentals and skills**Task 6:** Explore the nature and properties of different materials in different productsContinue with a design processLook at a range of different materials using design fundamentals: colour, appearance, texture and weight **Task 6 due Week 2****Task 7:** Explore differences in products and materialsPersonal likes and preferences based on design fundamentals and factors affecting design**Task 7 due Week 4** |
| 5–7 | Use of technology – practical skills and techniques**Task 8:** Students use simple drawing and annotation techniques to develop a product, making changes by design choices within the design process, to develop an individual design solution**Task 8 due Week 7** | **Use of technology – skills and techniques**Use a guided design method or pre-prepared designed components to develop own solutionUse basic graphic skills, such as desktop publishing and/or hand sketching with simple annotation* 2D pencil sketches
* colour drawings
* ICT drawing

Use appropriate terminology and conventions |
| 8–15 | Use of technology – safety, production skills and techniques**Task 9:** Manipulation of materials to produce the product, as applicable to contextSafety; correct use of personal protective equipment (PPE) where applicableProduction management as directed by teacher**Task 9 due Week 15** | **Use of technology – skills and techniques**Name and use basic equipment as appropriate to contextManipulate materials* mark out parts/shapes
* cut out and/or shape parts/shapes
* join or assemble and finishing

**Safety**Correct use of personal protective equipment (PPE) where applicable**Production management**Use teacher-directed design, production plans and processesWith supervision, use simple tools and machines safelyCommunicate and describe the production process in simple termsMaintain progress to complete a finished product |
| 16 | Design fundamentals and skillsEvaluation of products**Task 10**: Presentation of completed product/s**Task 10 due Week 16** | **Design fundamentals and skills**Identify product/s and discuss factors affecting designSeek and discuss links between designs and final products |