SAMPLE COURSE OUTLINE

MATERIALS DESIGN AND TECHNOLOGY
GENERAL YEAR 11
Sample course outline

**Materials Design and Technology – General Year 11**

**Unit 1 and Unit 2**

**Semester 1**

<table>
<thead>
<tr>
<th>Week</th>
<th>Key teaching points</th>
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</thead>
</table>
| 1–3  | Overview of unit and assessment requirements  
  **Design fundamentals and skills**  
  • investigate  
  ▪ needs, values and beliefs of the client or other end user  
  ▪ sources of design inspiration  
  ▪ existing ideas and products  
  ▪ design fundamentals – aesthetics, function, safety, cost  
  **Task 1 Part A** Students use a design process to design a product for their own use, using all or some recyclable materials  
  **Design fundamentals and skills**  
  **Nature and properties of materials**  
  • as per context content in Unit 1 of the syllabus  
  **Task 3 Part A** Investigate materials  
  **Materials in context**  
  • as per context content in Unit 1 of the syllabus  
  **Task 3 Part B** Materials use and environmental considerations  
  Research and identify:  
  • broad areas of the use of materials  
  • environmental considerations of the three ‘Rs’—reduce, re-use and recycle  
| 2–3  | **Design fundamentals and skills**  
  • devise  
  ▪ using communication and documentation techniques: sketching and annotation  
  ▪ elements of design: line, shape, form, texture, colour, tone  
  ▪ rapid concept development techniques  
  ▪ reviewing design ideas against design brief  
  ▪ annotated graphics and sketches with appropriate measurements or dimensions applicable to context  
  ▪ production planning  
  o full materials list  
  o full materials costing  
  o production plan, including time line  
  **Skills and techniques**  
  • ICT, portfolio development and communication skills  
  ▪ photography – ongoing record of progress and process used and final product  
  ▪ documenting presentations and evaluations  
  • context appropriate drawings and relevant technical information to produce the final product  
  • workroom/studio terminology appropriate to context  
  • select appropriate materials and calculate the quantities of materials required to complete the project  
  **Task 1 Part B** Devise a solution  
  Devise a solution through: concept drawings, working drawings, patterns or templates, materials list/s, costing and production planning  
| 4–6  | **Skills and techniques**  
  • workroom/studio terminology appropriate to context  
  • select appropriate materials and calculate the quantities of materials required to complete the project  
| 7–8  | **Skills and techniques**  
  • workroom/studio terminology appropriate to context  
  • select appropriate materials and calculate the quantities of materials required to complete the project  

Sample course outline | Materials Design and Technology | General Year 11
## Materials Design and Technology

### General

#### Year 11

<table>
<thead>
<tr>
<th>Week</th>
<th>Key teaching points</th>
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<tbody>
<tr>
<td></td>
<td>• with supervision, operate machinery and tools appropriate to context</td>
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<tr>
<td></td>
<td><strong>Safety</strong></td>
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<tr>
<td></td>
<td>• correct use of personal protective equipment (PPE) where applicable</td>
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<td></td>
<td>• occupational safety and health (OSH) practices appropriate to tasks being undertaken in workshops</td>
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<td></td>
<td><strong>Production management</strong></td>
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<td></td>
<td>• production plan</td>
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<td>▪ maintain a production plan</td>
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<td>▪ maintain time management while using tools, equipment and machinery to complete production</td>
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<td></td>
<td>o follow instructions from plans</td>
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<td></td>
<td>o maintain safety requirements</td>
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<td>▪ record changes to materials lists or costing</td>
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<td>▪ record regular journal/diary entries</td>
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<td>• ongoing evaluation techniques: diary, journal or portfolio notes and use of photography to record ongoing progress/decision changes made to the project</td>
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**Task 2 Part A** Use of technology – skills and techniques

- Develop production skills through task/s to improve practical hand and machine skills

**Task 2 Part B** Use of technology – skills and techniques, production management

- Manufacture of proposed product: using prepared production plan, materials and available equipment; record progress in design portfolio

**Task 2 Part C** Design fundamentals and skills

- Evaluate |
  - design ideas when investigating and devising |
  - finished product against the initial design and student generated criteria

**Task 1 Part C** Evaluation of completed product

## Semester 2

<table>
<thead>
<tr>
<th>Week</th>
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<tbody>
<tr>
<td>1–4</td>
<td>Overview of Unit 2 and assessment requirements</td>
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<tr>
<td></td>
<td><strong>Design fundamentals and skills</strong></td>
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<tr>
<td></td>
<td>• investigate</td>
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<td></td>
<td>▪ needs, values and beliefs of the designer/developer</td>
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<td>▪ design fundamentals</td>
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<td>o aesthetics – appearance, form</td>
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<td>o function – purpose, use</td>
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<td>o safety – safe design concepts</td>
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<td>o cost – comparison with commercial products</td>
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<td>▪ similar and alternate existing ideas and products using a variety of sources:</td>
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<td>o sources of design inspiration – aesthetic and functional features</td>
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<td>o performance criteria related to aesthetics and function</td>
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**Task 4 Part A** Revise design process; investigation and development design brief and portfolio

**Nature and properties of materials**

- Investigate materials; research and identify physical differences between materials within selected context

**Materials in context**

- context specific content in Unit 2: Materials in context

**Task 5** Report on the nature and properties of the materials in context

**Design fundamentals and skills**

- devise |
  - communication and documentation techniques: sketching and annotating
<table>
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|     | ICT or manual presentation skills to create solutions incorporating:  
|     | o elements of design: line, shape, form, texture, colour, tone  
|     | o rapid concept development techniques  
|     | review of design ideas against design brief and performance criteria  
|     | design solution, using annotated hand drawings or computer generated drawings with measurements or dimensions applicable to context  
|     | production planning:  
|     | o full materials list  
|     | o full materials costing  
|     | o production plan, including time line  
|     | **Skills and techniques**  
|     | ICT, portfolio development and communication skills  
|     | photography – ongoing record of progress and process used and final product  
|     | documenting presentations and evaluations  
|     | develop context appropriate drawings and relevant technical information to produce the final product  
|     | use workroom/studio terminology appropriate to context  
|     | select appropriate materials and calculate the correct amount required to order and purchase materials to complete the project  
|     | operate machinery and tools appropriate to context  
| 8–16| **Task 4 Part B** Devise a solution  
|     | develop concept drawings, working drawings, patterns or templates  
|     | prepare materials list/s, costing and production planning  
|     | **Skills and techniques**  
|     | use workroom/studio terminology appropriate to context  
|     | select appropriate materials and calculate the correct amount required to order and purchase materials to complete the project  
|     | operate machinery and tools appropriate to context  
|     | **Safety**  
|     | correct use of personal protective equipment (PPE) where applicable  
|     | conduct risk assessment for using specific tools/machinery  
|     | demonstrate occupational safety and health practices appropriate to tasks being undertaken in workshops  
|     | apply risk management strategies in the workshop/studio  
|     | recognise need and purpose of MSD (materials safety data) with regard to storage and handling of hazardous substances and hazardous operations appropriate to situation  
|     | **Production management**  
|     | production plan  
|     | use ongoing evaluation techniques: diary, journal or portfolio notes and use of photography to record ongoing progress/decision changes made to the project  
| 17  | **Task 6** Manufacture of proposed product  
|     | using prepared production plan, materials and available equipment  
|     | record progress in design portfolio  
|     | **Design fundamentals and skills**  
|     | evaluate  
|     | production plan, journal or diary with supporting images  
|     | finished product against the design brief, initial design and student-generated performance criteria  
|     | **Task 4 Part C** Evaluation of completed product |