



SAMPLE COURSE OUTLINE

MATERIALS DESIGN AND TECHNOLOGY GENERAL YEAR 11

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Sample course outline

Materials Design and Technology – General Year 11

Unit 1 and Unit 2

Semester 1

Week	Key teaching points
1–3	<p>Overview of unit and assessment requirements</p> <p>Design fundamentals and skills</p> <ul style="list-style-type: none"> • investigate <ul style="list-style-type: none"> ▪ 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 <p>Task 1 Part A Students use a design process to design a product for their own use, using all or some recyclable materials</p> <p>Design fundamentals and skills</p> <p>Nature and properties of materials</p> <ul style="list-style-type: none"> • as per context content in Unit 1 of the syllabus <p>Task 3 Part A Investigate materials</p> <p>Materials in context</p> <ul style="list-style-type: none"> • as per context content in Unit 1 of the syllabus <p>Task 3 Part B Materials use and environmental considerations</p> <p>Research and identify:</p> <ul style="list-style-type: none"> • broad areas of the use of materials • environmental considerations of the three ‘Rs’—reduce, re-use and recycle
2–3	<p>Design fundamentals and skills</p> <ul style="list-style-type: none"> • devise <ul style="list-style-type: none"> ▪ 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 <ul style="list-style-type: none"> ○ full materials list ○ full materials costing ○ production plan, including time line <p>Skills and techniques</p> <ul style="list-style-type: none"> • ICT, portfolio development and communication skills <ul style="list-style-type: none"> ▪ 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 <p>Task 1 Part B Devise a solution</p> <p>Devise a solution through: concept drawings, working drawings, patterns or templates, materials list/s, costing and production planning</p>
4–6	<p>Design fundamentals and skills</p> <ul style="list-style-type: none"> • devise <ul style="list-style-type: none"> ▪ 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 <ul style="list-style-type: none"> ○ full materials list ○ full materials costing ○ production plan, including time line <p>Skills and techniques</p> <ul style="list-style-type: none"> • ICT, portfolio development and communication skills <ul style="list-style-type: none"> ▪ 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 <p>Task 1 Part B Devise a solution</p> <p>Devise a solution through: concept drawings, working drawings, patterns or templates, materials list/s, costing and production planning</p>
7–8	<p>Skills and techniques</p> <ul style="list-style-type: none"> • workroom/studio terminology appropriate to context • select appropriate materials and calculate the quantities of materials required to complete the project

Week	Key teaching points
	<ul style="list-style-type: none"> with supervision, operate machinery and tools appropriate to context <p>Safety</p> <ul style="list-style-type: none"> correct use of personal protective equipment (PPE) where applicable occupational safety and health (OSH) practices appropriate to tasks being undertaken in workshops <p>Production management</p> <ul style="list-style-type: none"> production plan <ul style="list-style-type: none"> maintain a production plan maintain time management while using tools, equipment and machinery to complete production <ul style="list-style-type: none"> follow instructions from plans maintain safety requirements record changes to materials lists or costing record regular journal/diary entries ongoing evaluation techniques: diary, journal or portfolio notes and use of photography to record ongoing progress/decision changes made to the project <p>Task 2 Part A Use of technology – skills and techniques Develop production skills through task/s to improve practical hand and machine skills</p>
9–16	<p>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</p>
17	<p>Design fundamentals and skills</p> <ul style="list-style-type: none"> evaluate <ul style="list-style-type: none"> design ideas when investigating and devising finished product against the initial design and student generated criteria <p>Task 1 Part C Evaluation of completed product</p>

Semester 2

Week	Key teaching points
1–4	<p>Overview of Unit 2 and assessment requirements</p> <p>Design fundamentals and skills</p> <ul style="list-style-type: none"> investigate <ul style="list-style-type: none"> needs, values and beliefs of the designer/developer design fundamentals <ul style="list-style-type: none"> aesthetics – appearance, form function – purpose, use safety – safe design concepts cost – comparison with commercial products similar and alternate existing ideas and products using a variety of sources: <ul style="list-style-type: none"> sources of design inspiration – aesthetic and functional features performance criteria related to aesthetics and function <p>Task 4 Part A Revise design process; investigation and development design brief and portfolio</p>
2–3	<p>Nature and properties of materials Investigate materials; research and identify physical differences between materials within selected context</p> <p>Materials in context</p> <ul style="list-style-type: none"> context specific content in Unit 2: Materials in context <p>Task 5 Report on the nature and properties of the materials in context</p>
5–7	<p>Design fundamentals and skills</p> <ul style="list-style-type: none"> devise <ul style="list-style-type: none"> communication and documentation techniques: sketching and annotating

Week	Key teaching points
	<ul style="list-style-type: none"> ▪ ICT or manual presentation skills to create solutions incorporating: <ul style="list-style-type: none"> ○ elements of design: line, shape, form, texture, colour, tone ○ 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: <ul style="list-style-type: none"> ○ full materials list ○ full materials costing ○ production plan, including time line <p>Skills and techniques</p> <ul style="list-style-type: none"> • ICT, portfolio development and communication skills <ul style="list-style-type: none"> ▪ 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 <p>Task 4 Part B Devise a solution</p> <ul style="list-style-type: none"> • develop concept drawings, working drawings, patterns or templates • prepare materials list/s, costing and production planning
8–16	<p>Skills and techniques</p> <ul style="list-style-type: none"> • 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 <p>Safety</p> <ul style="list-style-type: none"> • 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 <p>Production management</p> <ul style="list-style-type: none"> • 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 <p>Task 6 Manufacture of proposed product</p> <ul style="list-style-type: none"> • using prepared production plan, materials and available equipment • record progress in design portfolio
17	<p>Design fundamentals and skills</p> <ul style="list-style-type: none"> • evaluate <ul style="list-style-type: none"> ▪ production plan, journal or diary with supporting images ▪ finished product against the design brief, initial design and student-generated performance criteria <p>Task 4 Part C Evaluation of completed product</p>