



**COURSE OUTLINE
GTMDTW 2022
UNIT 3 AND UNIT 4**



This course will run the two units, 3 and 4, concurrently. The student Semester 1 grade will therefore be an estimate. Blue = Unit 3 Content / Red = Unit 4 Content

Term	Week	Topic and key teaching points	Syllabus content	Assessment
1	1-3	Design Design Fundamentals and Skills Use of Technology Skills and techniques Safety Production Management	Design Design Fundamentals and Skills <ul style="list-style-type: none"> • investigate <ul style="list-style-type: none"> ▪ designs in practice ▪ needs, values and beliefs of the designer/developer ▪ sources of design inspiration ▪ performance criteria for products ▪ application of design fundamentals and factors affecting design <ul style="list-style-type: none"> ○ aesthetics ○ function ○ cost ○ measurements ○ environmental impact and considerations ○ safety • devise <ul style="list-style-type: none"> ▪ using communication and documentation techniques <ul style="list-style-type: none"> ○ sketching and drawing ○ rendering ○ annotating ▪ understanding the elements and principles of design where applicable in context <ul style="list-style-type: none"> ○ line ○ shape ○ form ○ texture ○ contrast ○ proportion ○ balance ○ colour ▪ rapid concept development techniques to generate design ideas and concepts ▪ final design concept using design brief and performance criteria ▪ review of best idea using design brief and performance criteria ▪ design solution <ul style="list-style-type: none"> ○ develop best concept using annotated hand or computer generated graphics (front, back views and detailed sketches as necessary) ○ 2D illustrations (working/technical drawings) ○ 3D illustration (presentation drawings) ○ inspiration/concept/storyboard 	Task 1: Bottle Balancer Design Folio Task 3: Bottle Balancer Task 6: Semester 1 Response Booklet: Design Elements and Fundamentals Worksheet



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		<ul style="list-style-type: none">▪ production plans<ul style="list-style-type: none">○ materials list○ costing for all materials components○ time line for stages of production• evaluate<ul style="list-style-type: none">▪ final product against design brief, initial design and performance criteria related to needs, values and beliefs of the end user <p>Use of Technology</p> <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 processes used and final product▪ documenting presentations and evaluations• context appropriate drawing and relevant technical information to produce the final product to demonstrate:<ul style="list-style-type: none">▪ sketching rapid concept developments▪ 3D presentation drawings▪ rendering techniques▪ 2D working drawings or using templates▪ inspiration/concept or storyboard development and presentation▪ design and making specification sheets• select appropriate materials and calculate the quantities of materials required to complete the project• 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• apply risk management strategies in the workshop/studio• assess the condition of tools and machinery <p>Production Management</p> <ul style="list-style-type: none">• production planning<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	
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			<ul style="list-style-type: none"> ▪ 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. 																					
1	4-5	<p>Materials in Context Materials in Context Use of Technology Skills and Techniques</p>	<p>Materials in Context</p> <ul style="list-style-type: none"> • the environmental impact of producing timber <ul style="list-style-type: none"> ▪ growth/harvesting ▪ milling/conversion ▪ end-of-life of a product – recycling and safe disposal <p>Materials in Context</p> <ul style="list-style-type: none"> • identification of examples of re-cycling methods for different wood materials <p>Use of Technology Skills and Techniques</p> <ul style="list-style-type: none"> • ICT skills related to design development and presentation • demonstrate drawing skills <ul style="list-style-type: none"> ▪ drawing, reading and interpreting plans/ patterns/templates ▪ isometric and pictorial hand sketches for project development ▪ dimensioned orthogonal drawing in 3rd angle for working drawing • select and safely apply technical skills using a range of tools and machinery that could include: <table style="width: 100%; border: none;"> <tr> <td style="width: 50%;">▪ bandsaw</td> <td style="width: 50%;">▪ biscuit joiner</td> </tr> <tr> <td>▪ drill press</td> <td>▪ domino joiner</td> </tr> <tr> <td>▪ various grinders or carving tools</td> <td>▪ table saw</td> </tr> <tr> <td>▪ sanding machines</td> <td>▪ mortise machine</td> </tr> <tr> <td>▪ portable or fixed routers</td> <td>▪ wood lathe</td> </tr> <tr> <td>▪ radial arm saw or drop saw or compound mitre saw</td> <td></td> </tr> </table> • use hand tools and/or machinery to fabricate at least two of the following joints <table style="width: 100%; border: none;"> <tr> <td style="width: 50%;">▪ widening joint</td> <td style="width: 50%;">▪ housing joint</td> </tr> <tr> <td>▪ finger joint</td> <td>▪ mortise and tenon</td> </tr> <tr> <td>▪ cross-halving joint</td> <td>▪ bridle joint</td> </tr> <tr> <td>▪ dovetail joint</td> <td>▪ biscuit joint</td> </tr> </table> • select and use the correct type and grade of abrasive paper • prepare correctly a surface for finishing • apply appropriate finishing techniques using brush or cloth and/or spray gun 	▪ bandsaw	▪ biscuit joiner	▪ drill press	▪ domino joiner	▪ various grinders or carving tools	▪ table saw	▪ sanding machines	▪ mortise machine	▪ portable or fixed routers	▪ wood lathe	▪ radial arm saw or drop saw or compound mitre saw		▪ widening joint	▪ housing joint	▪ finger joint	▪ mortise and tenon	▪ cross-halving joint	▪ bridle joint	▪ dovetail joint	▪ biscuit joint	<p>Task 6: Semester 1 Response Booklet: Environmental Impact Worksheet Task 4: Desk Drawers</p>
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1	6-8	<p>Materials Nature and Properties of Materials Materials in Context Materials Nature and Properties of Materials</p>	<p>Materials Nature and Properties of Materials</p> <ul style="list-style-type: none"> • wood types and classification <ul style="list-style-type: none"> ▪ natural wood <ul style="list-style-type: none"> ○ hardwood – jarrah, Australian oak ○ soft wood – radiata pine, Douglas fir ▪ man-made board <ul style="list-style-type: none"> ○ plywood - interior, exterior, marine ○ medium density fibreboards – plain, veneered ○ particle board • difference between rough sawn and DAR timbers • identification of common timber sizes, lengths, widths and thicknesses <p>Materials in Context</p> <ul style="list-style-type: none"> • the uses and classification of the major timber types for: <ul style="list-style-type: none"> ▪ furniture products ▪ building and construction materials ▪ consumer products <p>Materials Nature and Properties of Materials</p> <ul style="list-style-type: none"> • classification of adhesives for timber <ul style="list-style-type: none"> ▪ PVA ▪ epoxy ▪ cyanoacrylate ▪ latex/rubber based 	<p>Task 6: Semester 1 Response Booklet: Adhesives Worksheet Task 4: Desk Drawers</p>
1	9-10	<p>Safety</p>	<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 (OSH) practices appropriate to tasks being undertaken in workshops • apply risk management strategies in the workshop/studio • recognise need and purpose of materials safety data (MSD) with regard to storage and handling of hazardous substances and hazardous operations appropriate to situation 	<p>Task 4: Desk Drawers Task 6: Semester 1 Response Booklet: Timber Properties Worksheet</p>



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2	1-5	<p>Materials Nature and Properties of Materials</p> <p>Design fundamentals and skills</p> <p>Investigate</p> <ul style="list-style-type: none"> • designs in practice • needs, values and beliefs of the designer/developer • sources of design inspiration • performance criteria for products • application of design fundamentals and factors affecting design: aesthetics, measurements, function, environmental impact and considerations, cost, safety <p>Devise</p> <p>Using communication and documentation techniques</p> <ul style="list-style-type: none"> • sketching and drawing • annotating • understanding the elements and principles of design where applicable in context: contrast, shape, balance, texture, • rapid concept development techniques to generate design ideas and concepts • production plans: costing for all materials components <p>Use of Technology</p> <p>Context appropriate drawing and relevant technical information to produce the final product to demonstrate:</p> <ul style="list-style-type: none"> • sketching rapid concept developments <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 • apply risk management strategies in the workshop/studio <p>Wood types and classification</p> <ul style="list-style-type: none"> • natural wood: Hardwood – jarrah, Australian oak / Soft wood – Radiata Pine, Douglas fir • man-made board: medium density fibreboards – plain, veneered <p>Classification of adhesives for timber</p> <ul style="list-style-type: none"> • PVA • Epoxy <p>Environmental impact of producing timber</p> <ul style="list-style-type: none"> • end-of-life of a product – recycling and safe disposal <p>Use of technology</p> <p>Demonstrate drawing skills</p>	<p>Task 8: Externally Set Task</p> <p>Task 4: Desk Drawers</p> <p>Task 6: Semester 1 Response Booklet: Timber Classification Worksheet</p>
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			<ul style="list-style-type: none"> • drawing, reading and interpreting plans/ patterns/templates • select and safely apply technical skills using a range of tools and machinery that could include: bandsaw • select and use the correct type and grade of abrasive paper <ul style="list-style-type: none"> ○ prepare correctly a surface for finishing 	
2	6-10	<p>Design Design Fundamentals and Skills</p>	<p>Design 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 ▪ needs, values and beliefs of the client/target audience/market ▪ performance criteria related to needs, values and beliefs of the end user ▪ application of design fundamentals and factors affecting design <ul style="list-style-type: none"> ○ aesthetics ○ function ○ cost ○ critical measurements ○ environmental impact and considerations ○ safety • devise <ul style="list-style-type: none"> ▪ communication and documentation techniques <ul style="list-style-type: none"> ○ sketching and drawing ○ rendering ○ annotating ○ sampling ○ modelling ▪ applying of elements and principles of design where applicable in context ▪ rapid concept development techniques, images and annotation ▪ design development <ul style="list-style-type: none"> ○ review and justification of best ideas using design brief and performance criteria ○ best ideas developed using annotated hand or computer generated graphics (front, back views and detailed sketches as necessary) ○ 2D illustrations (working/technical drawings) ○ 3D illustration (presentation drawings) ○ inspiration/concept/storyboard development and presentation ▪ production plan <ul style="list-style-type: none"> ○ materials list ○ estimated and actual costing for all materials and components ○ production plan and time line 	<p>Task 2: Bedside Table Folio Task 4: Desk Drawers Task 7: Semester 2 Response Booklet: OSH Worksheet</p>

			<ul style="list-style-type: none"> • evaluate <ul style="list-style-type: none"> ▪ design and production processes ▪ production plan/journal/diary and accompanying photographic evidence to record ongoing evaluation <ul style="list-style-type: none"> ▪ product against design brief, initial design and performance criteria related to needs, values and beliefs of the end user 	
3	1-2	Production Management Materials Nature and Properties of Materials	Production Management <ul style="list-style-type: none"> • production planning <ul style="list-style-type: none"> ▪ maintain a detailed production plan ▪ maintain time management while using tools, equipment and machinery to complete production <ul style="list-style-type: none"> ○ adhere to sequential instructions ○ apply safety and risk management ▪ 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 Materials Nature and Properties of Materials <ul style="list-style-type: none"> • types and classification of finishes: water-based, turps (oil) based, solvent-based, epoxy base, oils, waxes and polishes to include: <ul style="list-style-type: none"> ▪ physical appearance ▪ physical properties ▪ chemical properties ▪ identification of methods of application and uses of finishes 	Task 5: Bedside Table Task 7: Semester 2 Response Booklet: Timber Finishes Worksheet
3	3-10	Materials Nature and Properties of Materials Use of Technology Skills and Techniques	Materials Nature and Properties of Materials <ul style="list-style-type: none"> • properties and characteristics of Western Australian hardwoods <ul style="list-style-type: none"> ▪ jarrah ▪ marri ▪ karri ▪ sheoak Use of Technology	Task5: Bedside Table Task 7: Semester 2 Response Booklet: Australian Timbers Worksheet



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		<p>Skills and Techniques</p> <ul style="list-style-type: none">• ICT, portfolio development and communication skills<ul style="list-style-type: none">▪ client and market research techniques▪ client presentation techniques▪ photography – ongoing record of progress and processes used and final product▪ documenting presentations and evaluations• develop context appropriate drawings and relevant technical information to produce the final product<ul style="list-style-type: none">▪ sketching rapid concept developments▪ 3D presentation drawings▪ 2D working drawings or using templates▪ inspiration/concept or storyboard development and presentation▪ design and making specification sheets• 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• identify, remove and report blunt, dull or damaged tools and machinery appropriate to context	
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