# COURSE OUTLINE
# GTMDTW 2020
# 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 |
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| 1 | 1-3 | **Design**<br>**Design Fundamentals and Skills**<br>**Use of Technology**<br>**Skills and techniques**<br>**Safety**<br>**Production**<br>**Management** | **Design**<br>**Design Fundamentals and Skills**<br>• investigate<br>▪ designs in practice<br>▪ needs, values and beliefs of the designer/developer<br>▪ sources of design inspiration<br>▪ performance criteria for products<br>▪ application of design fundamentals and factors affecting design<br>o aesthetics<br>o function<br>o cost<br>o measurements<br>o environmental impact and considerations<br>o safety<br>• devise<br>▪ using communication and documentation techniques<br>o sketching and drawing<br>o rendering<br>o annotating<br>▪ understanding the elements and principles of design where applicable in context<br>o line<br>o shape<br>o form<br>o texture<br>o contrast<br>o proportion<br>o balance<br>o colour<br>▪ rapid concept development techniques to generate design ideas and concepts<br>▪ final design concept using design brief and performance criteria<br>▪ review of best idea using design brief and performance criteria<br>▪ design solution<br>o develop best concept using annotated hand or computer generated graphics (front, back views and detailed sketches as necessary)<br>o 2D illustrations (working/technical drawings)<br>o 3D illustration (presentation drawings)<br>o inspiration/concept/storyboard | **Task 1:** Bottle Balancer Design Folio<br>**Task 3:** Bottle Balancer<br>**Task 11:** Design Elements and Fundamentals Worksheet |

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| | | | ▪ production plans<br>o materials list<br>o costing for all materials components<br>o time line for stages of production<br>• evaluate<br>▪ final product against design brief, initial design and performance criteria related to needs, values and beliefs of the end user<br>**Use of Technology**<br>**Skills and techniques**<br>• ICT, portfolio development and communication skills<br>▪ photography – ongoing record of progress and processes used and final product<br>▪ documenting presentations and evaluations<br>• context appropriate drawing and relevant technical information to produce the final product to demonstrate:<br>▪ sketching rapid concept developments<br>▪ 3D presentation drawings<br>▪ rendering techniques<br>▪ 2D working drawings or using templates<br>▪ inspiration/concept or storyboard development and presentation<br>▪ design and making specification sheets<br>• select appropriate materials and calculate the quantities of materials required to complete the project<br>• with supervision, operate machinery and tools appropriate to context<br>**Safety**<br>• correct use of personal protective equipment (PPE) where applicable<br>• occupational safety and health (OSH) practices appropriate to tasks being undertaken in workshops<br>• apply risk management strategies in the workshop/studio<br>• assess the condition of tools and machinery<br>**Production Management**<br>• production planning<br>▪ maintain a production plan<br>▪ maintain time management while using tools, equipment and machinery to complete production<br>o follow instructions from plans<br>o maintain safety requirements | |

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| | | | ▪ record changes to materials lists or costing<br>▪ record regular journal/diary entries<br>▪ 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** | **Materials in Context**<br>**Materials in Context**<br>**Use of Technology**<br>**Skills and Techniques** | **Materials in Context**<br>• the environmental impact of producing timber<br>▪ growth/harvesting<br>▪ milling/conversion<br>▪ end-of-life of a product – recycling and safe disposal<br>**Materials in Context**<br>• identification of examples of re-cycling methods for different wood materials<br>**Use of Technology**<br>**Skills and Techniques**<br>• ICT skills related to design development and presentation<br>• demonstrate drawing skills<br>▪ drawing, reading and interpreting plans/ patterns/templates<br>▪ isometric and pictorial hand sketches for project development<br>▪ dimensioned orthogonal drawing in 3rd angle for working drawing<br>• select and safely apply technical skills using a range of tools and machinery that could include:<br>▪ bandsaw<br>▪ drill press<br>▪ various grinders or carving tools<br>▪ sanding machines<br>▪ portable or fixed routers<br>▪ radial arm saw or drop saw or compound mitre saw<br>▪ biscuit joiner<br>▪ domino joiner<br>▪ table saw<br>▪ mortise machine<br>▪ wood lathe<br>• use hand tools and/or machinery to fabricate at least two of the following joints<br>▪ widening joint<br>▪ finger joint<br>▪ cross-halving joint<br>▪ dovetail joint<br>▪ housing joint<br>▪ mortise and tenon<br>▪ bridle joint<br>▪ biscuit joint<br>• select and use the correct type and grade of abrasive paper<br>• prepare correctly a surface for finishing<br>• apply appropriate finishing techniques using brush or cloth and/or spray gun | **Task 7:** Environmental Impact Worksheet<br>**Task 4:** Desk Drawers |

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| **1** | **6-8** | **Materials**<br>**Nature and Properties of Materials**<br>**Materials in Context**<br>**Materials**<br>**Nature and Properties of Materials** | **Materials**<br>**Nature and Properties of Materials**<br>• wood types and classification<br>  ▪ natural wood<br>  o hardwood – jarrah, Australian oak<br>  o soft wood – radiata pine, Douglas fir<br>  ▪ man-made board<br>  o plywood - interior, exterior, marine<br>  o medium density fibreboards – plain, veneered<br>  o particle board<br>• difference between rough sawn and DAR timbers<br>• identification of common timber sizes, lengths, widths and thicknesses<br>**Materials in Context**<br>• the uses and classification of the major timber types for:<br>  ▪ furniture products<br>  ▪ building and construction materials<br>  ▪ consumer products<br>**Materials**<br>**Nature and Properties of Materials**<br>• classification of adhesives for timber<br>  ▪ PVA<br>  ▪ epoxy<br>  ▪ cyanoacrylate<br>  ▪ latex/rubber based | **Task 8:** Adhesives Worksheet<br>**Task 4:** Desk Drawers<br>**Task 12:** Timber Classification Worksheet |
| **1** | **9** | **Safety** | **Safety**<br>• correct use of personal protective equipment (PPE) where applicable<br>• conduct risk assessment for using specific tools/machinery<br>• demonstrate occupational safety and health (OSH) practices appropriate to tasks being undertaken in workshops<br>• apply risk management strategies in the workshop/studio<br>• recognise need and purpose of materials safety data (MSD) with regard to storage and handling of hazardous substances and hazardous operations appropriate to situation | **Task 4:** Desk Drawers<br>**Task 7:** OSH Worksheet |

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| **2** | **1-5** | **Materials**<br>**Nature and Properties of Materials** | **Design fundamentals and skills**<br>**investigate**<br>• designs in practice<br>• sources of design inspiration<br>• performance criteria for products<br>• rapid concept development techniques to generate design ideas and concepts<br>• production plans<br>▪ materials list<br>▪ time line for stages of production<br>• context appropriate drawing and relevant technical information to produce the final product to demonstrate:<br>○ sketching rapid concept developments<br>**Safety**<br>• correct use of personal protective equipment (PPE) where applicable<br>• occupational safety and health (OSH) practices appropriate to tasks being undertaken in workshops<br>• apply risk management strategies in the workshop/studio<br>**Wood Context Content**<br>○ man-made board<br>▪ plywood - interior, exterior, marine<br>▪ medium density fibreboards – plain, veneered<br>• difference between rough sawn and DAR timbers<br>• identification of common timber sizes, lengths, widths and thicknesses<br>• physical properties<br>• durability<br>• strength<br>• abrasion resistance<br>• flexibility<br>• dimensional stability<br>• shrink resistance<br>• **Materials in context**<br>○ end-of-life of a product – recycling and safe disposal | **Task 14: Externally Set Task**<br>**Task 4:** Desk Drawers<br>**Task13:** Timber Properties Worksheet |
| **2** | **6-11** | **Design**<br>**Design Fundamentals and Skills** | **Design**<br>**Design Fundamentals and Skills**<br>• investigate<br>▪ needs, values and beliefs of the designer/developer<br>▪ needs, values and beliefs of the client/target audience/market | **Task 2:** Bedside Table Folio<br>**Task 4:** Desk Drawers |

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| | | | ▪ performance criteria related to needs, values and beliefs of the end user<br>▪ application of design fundamentals and factors affecting design<br>o aesthetics<br>o function<br>o cost<br>o critical measurements<br>o environmental impact and considerations<br>o safety<br>• devise<br>▪ communication and documentation techniques<br>o sketching and drawing<br>o rendering<br>o annotating<br>o sampling<br>o modelling<br>▪ applying of elements and principles of design where applicable in context<br>▪ rapid concept development techniques, images and annotation<br>▪ design development<br>o review and justification of best ideas using design brief and performance criteria<br>o best ideas developed using annotated hand or computer generated graphics (front, back views and detailed sketches as necessary)<br>o 2D illustrations (working/technical drawings)<br>o 3D illustration (presentation drawings)<br>o inspiration/concept/storyboard development and presentation<br>▪ production plan<br>o materials list<br>o estimated and actual costing for all materials and components<br>o production plan and time line<br>• evaluate<br>▪ design and production processes<br>▪ production plan/journal/diary and accompanying photographic evidence to record ongoing evaluation<br>▪ 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** | **Production Management**<br>• production planning<br>▪ maintain a detailed production plan | **Task 5:** Bedside Table<br>**Task10:** Timber Finishes Worksheet |

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| | | **Nature and Properties of Materials** | ▪ maintain time management while using tools, equipment and machinery to complete production<br>o adhere to sequential instructions<br>o apply safety and risk management<br>▪ record changes to materials lists or costing<br>▪ record regular journal/diary entries<br>▪ ongoing evaluation techniques: diary, journal or portfolio notes and use of photography to record ongoing progress/decision changes made to the project<br><br>**Materials**<br>**Nature and Properties of Materials**<br>• types and classification of finishes: water-based, turps (oil) based, solvent-based, epoxy base, oils, waxes and polishes to include:<br>▪ physical appearance<br>▪ physical properties<br>▪ chemical properties<br>▪ identification of methods of application and uses of finishes | |
| **3** | **3-10** | **Materials**<br>**Nature and Properties of Materials**<br>**Use of Technology**<br>**Skills and Techniques** | **Materials**<br>**Nature and Properties of Materials**<br>• properties and characteristics of Western Australian hardwoods<br>▪ jarrah<br>▪ marri<br>▪ karri<br>▪ sheoak<br>**Use of Technology**<br>**Skills and Techniques**<br>• ICT, portfolio development and communication skills<br>▪ client and market research techniques<br>▪ client presentation techniques<br>▪ photography – ongoing record of progress and processes used and final product<br>▪ documenting presentations and evaluations<br>• develop context appropriate drawings and relevant technical information to produce the final product<br>▪ sketching rapid concept developments | **Task5:** Bedside Table<br>**Task 9:** Australian Timbers Worksheet |

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| | | | ▪ 3D presentation drawings<br>▪ 2D working drawings or using templates<br>▪ inspiration/concept or storyboard development and presentation<br>▪ design and making specification sheets<br>• use workroom/studio terminology appropriate to context<br>• select appropriate materials and calculate the correct amount required to order and purchase materials to complete the project<br>• operate machinery and tools appropriate to context<br>• identify, remove and report blunt, dull or damaged tools and machinery appropriate to context | |