Furnishing Skills 2019 v1.0

Sample module of work

Module 3: Manufacturing enterprise — Furniture for the outdoors

Overview

Module 3: Manufacturing enterprise — Furniture for the outdoors
Module description This module builds on prior learning of industry practices and production processes used in the safe creation of quality products for the furnishing industry. Products are created using production processes that recognise industry costs, price, competition and customer expectation of value. **Time allocation** 55 hours

Elective/s	Underpinning factors
• Furniture finishing • Furniture-making	☒ Applied learning ☒ Community connections ☒ Core skills for work ☒ Literacy ☒ Numeracy

Assessment

Assessment number	Assessment description	Technique and mode	Assessment conditions	Dimensions and objectives
5	Manufacture an outdoor folding drinks and cheese table from specifications. (Visual evidence is collected through annotated photographs or teacher observations annotated on the instrument-specific standards.)	Practical demonstration	• Individual response • A set period of in-class time (approx. 5 hrs)	• Knowing and understanding – demonstrate fundamental production skills – interpret drawings and technical information • Analysing and applying – select and apply production skills and procedures in manufacturing tasks – use visual representations and language conventions and features to communicate particular purposes • Producing and evaluating – plan and adapt production processes – create products from specifications – evaluate industry practices, production processes and products, and make recommendations
6	Manufacture and apply finishes to an outdoor garden chair for sale to customers from detailed drawings and technical information.	Project	• Product component – Adirondack garden chair. Individual response – Schools provide students with a set period of in-class time (approx. 35 hrs) to develop the product component/s of their project. • Multimodal component — non-presentation – Digital portfolio (photographic production journal with annotations). Individual response. – maximum of 8 A4 pages	• Knowing and understanding – describe industry practices in manufacturing tasks – demonstrate fundamental production skills – interpret drawings and technical information • Analysing and applying – analyse manufacturing tasks to organise materials and resources – select and apply production skills and procedures in manufacturing tasks – use visual representations and language conventions and features to communicate particular purposes • Producing and evaluating – plan and adapt production processes – create products from specifications – evaluate industry practices, production processes and products, and make recommendations

Teaching and learning sequence

Notional hours	Core topics		Learning experiences
	Core concepts and ideas	Knowledge, understanding and skills	
1 hour	**Core topic 1 — Manufacturing enterprises** Manufacturing enterprises are important to the economy of Australia and employ a broad range of people in many different occupations (C1.1).	• overview of furnishing enterprises and their contribution to the economy • organisational structure of furnishing workplaces • career options and pathways	**Module orientation** Introduce the module, outline learning goals and success criteria and link the module to prior learning. Organise an excursion/guest speaker to present information about outdoor furniture suppliers, production processes and practices used in the furnishing industry including current workplace health and safety procedures, cost of structures and quality expectations. Demonstrate the difference between handcrafted and mass-produced furniture. Students: • use appropriate industry terminology when engaging in classroom discussions • discuss class protocols and relate these to industry workplace health and safety procedures, maintenance of tools and storage of stock and product • identify and describe machinery used in furniture production in terms of function, reasons for use and required safety and maintenance • identify and describe the responsibilities of the work environment, including to observe safety, occupy shared workspaces and effectively communicate • compare product quality of handcrafted and mass-produced furniture and discuss the needs of customers • describe materials used in outdoor furniture in terms of suitability, availability and cost • analyse and evaluate outdoor furniture constructed from materials other than timber and consider the advantages and disadvantages of these materials in relation to the manufacturer and the consumer.

Notional hours	Core topics		Learning experiences
	Core concepts and ideas	Knowledge, understanding and skills	
5 hours	**Core topic 1 — Workplace health and safety** Workplace health and safety legislation, rules and procedures must be followed in manufacturing industry workplaces (C1.2).	• employer and employee responsibilities, rights and obligations under the *Work Health and Safety Act 2011* • industry-specific requirements • risk assessments to identify hazards • safe working practices and procedures	**Skill development** Revise relevant furniture-making skills and procedures. Describe, explain and demonstrate safe operating procedures for tools and machinery. Students: • identify tools and apply procedures appropriate for marking, cutting and finishing to manufacture outdoor garden furniture • apply and demonstrate standard operating procedures (SOPs) for each machine, analysing a range of risks associated with each machine and considering the hierarchy of hazard control and the safety of working with the machine • demonstrate and practise refinement of production skills and procedures by completing a series of skill exercises • analyse efficient cutting layout processes (numeracy exercise), i.e. efficiency of breaking down materials, possible waste associated with materials and explain the economic benefits of waste minimisation.
2 hours	**Core topic 2 — Specifications** Specifications are communicated through industry-specific drawings and technical information (C2.1).	• interpretation of sketches and technical drawings • technical information accessed from charts, manuals, templates, tables and books	**Revision of technical drawings** Explain and demonstrate: • analysis of technical drawings, e.g. dimensions, labels, symbols, views and text • creating a cutting list and production template • converting imperial measurements to metric measurements. Provide feedback to students about the quality of their interpretation of drawings and prepared cutting list and templates. Students: • analyse sample technical drawings to establish a cutting list and production template, and demonstrate converting imperial measurements to metric measurements • complete an evaluation with recommendations to improve the cutting list and production template.

Notional hours	Core topics		Learning experiences
	Core concepts and ideas	Knowledge, understanding and skills	
5 hours	**Core topic 2 — Materials** Materials are selected and safely manipulated based on industry-specific applications (C2.3).	• types of materials • properties of materials • sections, shapes and sizes of products • logistics • industry applications and manipulation procedures • consumables • safety data sheets	**Assessment 5: Outdoor folding drinks and cheese table from specifications** **Practical demonstration — Furniture finishing and Furniture-making electives** Introduce the assessment task and provide a completed working drawing of the outdoor folding drinks and cheese table. Lead discussion of the standards and where they will be found in the product. Provide class time for the creation of the product. Describe, explain and demonstrate standard operating procedures for tools and machinery. Monitor students' use of tools and machinery. Give feedback to students on the product, including proposed use of tools, machinery, materials and production procedures. Students: • interpret drawings to determine the product's requirements • demonstrate – marking-out procedures and skills using relevant tools – cutting procedures and skills using relevant tools – machining procedures and skills using relevant machinery – assembling procedures and skills using relevant tools and machinery – finishing procedures and skills using relevant tools and machinery • select and apply production skills and procedures through the creation of the outdoor folding drinks and cheese table • use industry terminology and language to communicate the skills used to manufacture the outdoor folding drinks and cheese table.
	Core topic 2 — Tools Tools have specific functions and are selected and safely operated for particular procedures (C2.2).	• identification, safety and maintenance of tools and machinery • marking-out procedures and skills using relevant tools • cutting procedures and skills using relevant tools • machining procedures and skills using relevant machinery • assembling procedures and skills using relevant tools and machinery • finishing procedures and skills using relevant tools and machinery	

Notional hours	Core topics		Learning experiences
	Core concepts and ideas	Knowledge, understanding and skills	
	Core topic 1 — Product quality The quality of products depends on customer expectation of value, which affects industry production processes (C1.4).	• quality standards of products are derived from customer expectations of value based on factors such as needs, trends, budget, product life and competition • products are manufactured to predefined specifications that detail the expected quality standards of the final product • manufacturing enterprises make decisions about production processes that affect product quality based on a range of factors	• plan and adapt production processes to ensure a quality product is manufactured • create an outdoor folding drinks and cheese table to specifications • evaluate industry practices and production processes used to create the outdoor folding drinks and cheese table • recommend possible improvements to the outdoor folding drinks and cheese table
2 hours	**Core topic 2 — Materials** Materials are selected and safely manipulated based on industry-specific applications (C2.3).	• types of materials • properties of materials • industry applications and manipulation procedures • consumables • safety data sheets	**Finishing** Describe, explain and demonstrate standard operating procedures for tools and machinery. Revise techniques for preparing surfaces and applying finishes, and provide class time for the application of finishes. Monitor students' use of tools and machinery. Students: • demonstrate applying finishes to a strip of timber • discuss how sanding and applying abrasive materials can influence the quality of the finish, therefore affecting the ability to meet customer expectations • evaluate the finish, considering the properties of the materials and the desired purpose • select and apply the appropriate finish to the outdoor folding drinks and cheese table.
	Core topic 2 — Tools Tools have specific functions and are selected and safely operated for particular procedures (C2.2).	• identification, safety and maintenance of tools and machinery • finishing procedures and skills using relevant tools and machinery	
	Core topic 1 — Product quality	• products are manufactured to predefined specifications that	

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	Core concepts and ideas	Knowledge, understanding and skills	
	The quality of products depends on customer expectation of value, which affects industry production processes (C1.4).	detail the expected quality standards of the final product	
2 hours	**Core topic 1 — Personal and interpersonal skills** Personal and interpersonal skills, including teamwork and communication skills, are essential for effective participation in manufacturing workplaces (C1.3).	• workplace communication using industry-specific terminology including written, graphical, verbal and non-verbal, e.g. – written, such as safety rules, work instructions, timesheets, forms (such as accident reports), safe operating procedures and job applications	**Using ICT to prepare a digital folio for the project** Lead a class discussion about what should be included in a production plan. Provide feedback to students about the quality of their proposed production plan, e.g. pictures taken and annotations made when describing production processes. Revise use of ICT skills to prepare a digital folio, as well as workplace communication and industry-specific terminology. Students: • identify and describe key stages of the production process and plan the sequence of manufacture for the project • practise taking photographs of key stages of the production process using supplied devices • practise annotating selected photographs of key stages to provide required detail describing production processes • evaluate photographs and annotations.
	Core topic 2 — Tools Tools have specific functions and are selected and safely operated for particular procedures (C2.2).	• identification, safety and maintenance of tools and machinery, e.g. – tool names and purpose – safe work practices – tool storage and maintenance – general housekeeping	

Notional hours	Core topics		Learning experiences
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35 hours	**Core topic 2 — Materials** Materials are selected and safely manipulated based on industry-specific applications (C2.3).	• types of materials • properties of materials • sections, shapes and sizes of products • logistics • industry applications and manipulation procedures • consumables • safety data sheets	**Assessment 6: Adirondack garden chair from specifications** **Project — Furniture finishing and Furniture-making electives** Introduce the assessment task. Provide a completed working drawing of the adirondack garden chair. Lead discussion of the standards and where they will be found in the product. Provide class time for the creation of the product. Describe, explain and demonstrate standard operating procedures for tools and machinery. Monitor students' use of tools and machinery. Give feedback to students on the product, including proposed use of tools, machinery, materials and production procedures. Students: • interpret drawings to determine the product's requirements • demonstrate – marking-out procedures and skills using relevant tools – cutting procedures and skills using relevant tools – machining procedures and skills using relevant machinery – assembling procedures and skills using relevant tools and machinery – finishing procedures and skills using relevant tools and machinery • select and apply production skills and procedures through the creation of the adirondack garden chair • use industry terminology and language to communicate the skills used to manufacture the adirondack garden chair • plan and adapt production processes to ensure a quality product is manufactured
	Core topic 2 — Tools Tools have specific functions and are selected and safely operated for particular procedures (C2.2).	• identification, safety and maintenance of tools and machinery • marking-out procedures and skills using relevant tools • cutting procedures and skills using relevant tools • machining procedures and skills using relevant machinery • assembling procedures and skills using relevant tools and machinery • finishing procedures and skills using relevant tools and machinery	

Notional hours	Core topics		Learning experiences
	Core concepts and ideas	Knowledge, understanding and skills	
	Core topic 1 — Product quality The quality of products depends on customer expectation of value, which affects industry production processes (C1.4).	• quality standards of products are derived from customer expectations of value based on factors such as needs, trends, budget, product life and competition • products are manufactured to predefined specifications that detail the expected quality standards of the final product • manufacturing enterprises make decisions about production processes that affect product quality based on a range of factors	• create an adirondack garden chair to specifications • evaluate industry practices and production processes used to create the adirondack garden chair • recommend possible improvements for the adirondack garden chair • compile an individual digital portfolio (multimodal component) that includes – a risk assessment for one of the tools or machines used to manufacture the adirondack garden chair – a description of industry-related practices that were used – a materials list and cost calculation for the manufacture of the adirondack garden chair, including materials and labour – an analysis of the step-by-step plan of the proposed production processes for the manufacturing tasks – photographs and sketches (with annotations) of the production sequence, clearly showing the production procedures used to create the adirondack garden chair – evaluation of industry practices, production processes and the finished adirondack garden chair in relation to the working drawings – recommendations for improvements to the adirondack garden chair.
	Core topic 1 — Personal and interpersonal skills Personal and interpersonal skills, including teamwork and communication skills, are essential for effective participation in manufacturing workplaces (C1.3).	• work-readiness skills • teamwork in the workplace • workplace communication using industry-specific terminology including written, graphical, verbal and non-verbal	

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	Core concepts and ideas	Knowledge, understanding and skills	
2 hours	**Core topic 2 — Materials** Materials are selected and safely manipulated based on industry-specific applications (C2.3).	• types of materials • properties of materials • industry applications and manipulation procedures • consumables • safety data sheets	**Finishing** Describe, explain and demonstrate standard operating procedures for tools and machinery. Revise techniques for preparing surfaces and applying finishes and provide class time for the application of finishes. Monitor students' use of tools and machinery. Students: • select and apply an appropriate finish to the adirondack garden chair • discuss how sanding and applying abrasive materials can influence the quality of the finish, therefore affecting the ability to meet customer expectations • evaluate the finish, considering the properties of the materials and the desired purpose of the product.
	Core topic 2 — Tools Tools have specific functions and are selected and safely operated for particular procedures (C2.2).	• identification, safety and maintenance of tools and machinery • finishing procedures and skills using relevant tools and machinery	
	Core topic 1 — Product quality The quality of products depends on customer expectation of value, which affects industry production processes (C1.4).	• products are manufactured to predefined specifications that detail the expected quality standards of the final product	

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	Core concepts and ideas	Knowledge, understanding and skills	
1 hour	**Core topic 1 — Manufacturing enterprises** Manufacturing enterprises are important to the economy of Australia and employ a broad range of people in many different occupations (C1.1).	• overview of furnishing enterprises and their contribution to the economy • organisational structure of furnishing workplaces • career options and pathways	**Reflection** Lead a discussion, revisit learning goals and success criteria and link the module to future learning. Display all adirondack garden chairs around the room and invite students to inspect the products as potential customers. Demonstrate the expected quality standards of the final product and revisit the predefined specifications. Students: • use appropriate industry terminology when inspecting products • discuss class protocols and relate them to industry workplace health and safety procedures, maintenance of tools and storage of stock and product • identify and describe machinery used in furniture production in terms of function, reasons for use, required safety and maintenance • compare the quality of the outdoor furniture products and discuss the needs of customers • describe the materials used in outdoor furniture for suitability, availability and cost • analyse and evaluate outdoor furniture constructed from materials other than timber and consider the advantages and disadvantages of these materials in relation to the manufacturer and the consumer.
	Core topic 1 — Personal and interpersonal skills Personal and interpersonal skills, including teamwork and communication skills, are essential for effective participation in manufacturing workplaces (C1.3).	• work-readiness skills • teamwork in the workplace • workplace communication using industry-specific terminology including written, graphical, verbal and non-verbal	