Endeavour Sports High School

Industrial Technology
Timber
Semester 1

2023

Year 9 Course Program

Industrial Technology - Timber: Stage 5 Course (Year 9)

Introduction

Rationale

The study of Industrial Technology provides students with opportunities to engage in a diverse range of creative and practical experiences using a variety of technologies widely available in industrial and domestic settings. This may include study in the areas of Automotive, Building and Construction, Electronics, Engineering, Farm Maintenance, Metal, Multimedia or Timber.

Industrial Technology develops knowledge and understanding of materials and processes. Related knowledge and skills are developed through a specialised approach to the tools, materials and techniques employed in the planning, development, construction and evaluation of quality practical projects and processes. Critical thinking skills are developed through engagement with creative practical problem-solving activities.

The *Industrial Technology Years 7–10 Syllabus* allows students to study technology in specific focus areas relevant to individual needs and interests. The syllabus has been designed to be inclusive of the needs, interests and aspirations of all students. Students are provided with opportunities to develop responsibility for their own learning through a range of student-centred learning experiences.

Through the study of Industrial Technology students develop knowledge relating to current and emerging technologies in industrial and domestic settings. Students study the interrelationship of technologies, equipment and materials used in a variety of settings. They develop skills through project-based learning in the design, planning, management and production of practical projects.

The *Industrial Technology Years 7–10 Syllabus* leads students to an awareness of the relationship between technology, industry, society and the environment, and develops their ability to make value judgements about issues, decisions and consequences arising from this interaction. Students are challenged to develop an awareness of the importance of environmental sustainability in relation to the use of materials and technologies and their effects on people and society.

The study of Industrial Technology develops in students an understanding of related work environments and Work Health and Safety (WHS) matters, while developing a range of skills that equip them for future learning, potential vocational pathways and leisure and lifestyle activities involving technologies.

The knowledge, understanding, skills and attitudes developed through the study of Industrial Technology provides opportunities for students to make positive contributions to Australian industry and society, to express valued opinions and to make considered judgements as contributing

Aim

The aim of the *Industrial Technology Years 7–10 Syllabus* is to develop knowledge, understanding, skills and values related to a range of technologies through safe interaction with tools, materials and processes in the design, planning, management and production of quality projects. The syllabus aims to develop in students an understanding of the interrelationships between technology, the individual, society and the environment, and to develop their ability to think creatively to produce solutions to practical problems.

STAGE 5 COURSE PERFORMANCE DESCRIPTORS – INDUSTRIAL TECHNOLOGY

Areas for Assessment

Grade E	Grade D	Grade C	Grade B	Grade A
A student performing at this grade typically:	**A student performing at this grade typically:**	**A student performing at this grade typically:**	**A student performing at this grade typically:**	**A student performing at this grade typically:**
• demonstrates elementary knowledge of some technologies in their field of study, and recognises some social, cultural and environmental impacts of these technologies.	• demonstrates basic knowledge of technologies in their field of study, and outlines social, cultural and environmental impacts of these technologies.	• demonstrates sound knowledge of traditional, current, new and emerging technologies in their field of study, and explains the social, cultural and environmental impacts of these technologies.	• demonstrates thorough knowledge of traditional, current, new and emerging technologies in their field of study, and analyses the social, cultural and environmental impacts of these technologies.	• demonstrates extensive knowledge of traditional, current, new and emerging technologies in their field of study, and evaluates the social, cultural and environmental impacts of these technologies.
• with guidance, displays very limited technical skills in identifying and using appropriate materials and hand and machine tools to produce practical projects.	• displays basic technical skills in identifying and using appropriate materials and hand and machine tools to produce practical projects, identifying and managing some risks, and applying safe work practices.	• displays technical skills in identifying and using appropriate materials and hand and machine tools, to produce practical projects of sound quality, identifying and managing risks and applying safe work practices.	• displays high-level technical skills in identifying and using appropriate materials and hand and machine tools to produce high quality practical projects, assessing and managing risks and applying safe work practices.	• displays advanced technical skills in identifying and using appropriate materials and hand and machine tools to produce practical projects of excellent quality, independently assessing and managing risks and consistently applying safe work practices.
• identifies some properties of materials that make them suitable for specific applications, and identifies some aspects of products and commercial products.	• outlines properties of materials that make them suitable for specific applications, and identifies functional, aesthetic, environmental and economic aspects of products and commercial products.	• describes the suitability of materials for specific applications, and the functional, aesthetic, environmental and economic aspects of projects and commercial products.	• analyses the suitability of materials for specific applications, and the functional, aesthetic, environmental and economic aspects of projects and commercial products.	• evaluates the suitability of materials for specific applications and the functional, aesthetic, environmental and economic aspects of projects and commercial products.
• produces elementary sketches related to practical projects, and uses simple terms to describe production processes.	• produces simple drawings for practical projects, and uses general terms to describe production processes to an audience.	• produces competent drawings to illustrate practical projects, and uses accurate technical terms to describe production processes to a range of audiences.	• uses a range of media to illustrate practical projects, and uses technical terminology to discuss production processes with a range of audiences.	• independently selects and uses a range of media to illustrate practical projects, and confidently uses technical terminology to discuss production processes with a range of audiences.
• with assistance, applies elementary skills and design principles to the production or modification of projects.	• applies basic skills and design principles to the development and production or modification of projects.	• applies skills and design principles to the development and production or modification of projects.	• consistently applies skills and design principles to the development and production of new projects.	• independently and consistently applies skills and design principles to the development and production of new projects.

Industrial Technology - Timber: Stage 5 Course (Year 9)

Outcomes Map

Stage 5 outcomes	A student:	Jewellery Box
IND5-1	identifies, assesses, applies and manages the risks and WHS issues associated with the use of a range of tools, equipment, materials, processes and technologies	
IND5-2	applies design principles in the modification, development and production of projects	
IND5-3	identifies, selects and uses a range of hand and machine tools, equipment and processes to produce quality practical projects	
IND5-4	selects, justifies and uses a range of relevant and associated materials for specific applications	
IND5-5	selects, interprets and applies a range of suitable communication techniques in the development, planning, production and presentation of ideas and projects	
IND5-6	identifies and participates in collaborative work practices in the learning environment	
IND5-7	applies and transfers skills, processes and materials to a variety of contexts and projects	
IND5-8	evaluates products in terms of functional, economic, aesthetic and environmental qualities and quality of construction	
IND5-9	describes, analyses and uses a range of current, new and emerging technologies and their various applications	
IND5-10	describes, analyses and evaluates the impact of technology on society, the environment and cultural issues locally and globally	

SEMESTER ONE					
No	**Task**	**Outcomes**	**Components/Description**	**Weightings**	**Due**
1	Half-Yearly Examination	IND5-1 IND5-4 IND5-5 IND5-7	Understanding theoretical course content	30	Week 6 Term 2
2	Jewellery Box Construction – Stage 1	IND5-1 IND5-2 IND5-3	Demonstrating specific skills and knowledge related to the practical project	70	Week 6 Term 2

SEMESTER TWO					
No	**Task**	**Outcomes**	**Components/Description**	**Weightings**	**Due**
3	Major Design Portfolio	IND5-2 IND5-3 IND5-5 IND5-8	Demonstrating specific skills and knowledge related to the practical project	20	Week 3 Term 4
4	Major Project	IND5-2 IND5-3 IND5-7	Understanding theoretical components of design management	60	Week 4 Term 4
5	Yearly Examination	All	Understanding theoretical course content	20	Week 5 Term 4

Industrial Technology - Timber: Stage 5 Course (Year 9)

Report Outcomes

Term 1

Scope and Sequence

Weeks	Theory	Practical
1	WH&S - ONGUARD PROGRAM	
2		
3	Portfolio – Statement of Intent	**Allocation of Groups** **Groups 1 & 2** Following the Cutting List, cut all material for the carcase **Groups 3 & 4** Following the Cutting List, cut all material for Base and Lid
4	Theory – Plantation Timber	
Homework Due – Start of Week 5 Lesson (completion of WHS, Portfolio, Theory)		
5	Research – Existing Solutions	**Groups 1 & 2** Mark and cut Dovetail joints or Finger joints **Groups 3 & 4** Mark and cut groove for base
6	Theory – Timber Joints	
Homework Due – Start of Week 7 Lesson (completion of Portfolio and Theory)		
7	Research – Tools	**Groups 1 & 2** Groups to complete Carcase **Groups 3 & 4** Groups to complete Carcase
8	Theory – Drill Bits	
Homework Due – Start of Week 9 Lesson (completion of Portfolio and Theory)		
9	Research – Joining Methods	
10	Revision and **Issue Assessment Task 1 and 2**	

Term 2

Weeks	Theory	Practical
1	**Revise Assessment Task 1**	**Groups 3 & 4** Following the Cutting List, cut all material for the carcase **Groups 1 & 2** Following the Cutting List, cut all material for Base and Lid
2	Theory – Machines	
3	Portfolio – Materials	**Groups 3 & 4** dry assembly **Groups 1 & 2** dry assembly
Homework Due – Start of Week 4 Lesson (completion of Portfolio and Theory)		
4	Theory – Jigs and Templates	
5	Revision	**Groups 3 & 4** Groups to complete Carcase **Groups 1 & 2** Groups to complete Carcass
6	**Assessment Task 1 – Half-Yearly Examination**	**Assessment Task 2 Cabinet Stage 1 – Due**

7	**Feedback** on Half-Yearly Examination	**Groups 1 & 2** Skirting **Groups 3 & 4** Router and fit backboard
8	**Feedback** on Cabinet Construction	
9	Theory – Adhesives	
10	Portfolio – Isometric Drawing	

Term 3

Weeks	Theory	Practical
1	Portfolio – Oblique Drawing	**Groups 1 & 2** Skirting **Groups 3 & 4** Router and fit backboard
2	Portfolio – Sketches & Final Idea	
Homework Due – Start of Week 5 Lesson (ALL Drawings completed)		
3	Portfolio/Theory - Cutting List and Material Cost and	**Groups 3 & 4** Skirting **Groups 1 & 2** Router and fit backboard
4	Portfolio – Steps of Construction	
Homework Due – Start of Week 5 Lesson (completion of Steps of Construction, Material Cost and Cutting List)		
5	Theory – Fittings	
6	Portfolio – Evaluation	
7	Theory – Drawers	**Groups 3 & 4** Drawer front **Groups 1 & 2** Door
8	Portfolio – Assessment expectations	
9	Project review	
10	Theory – Finishes/Veneers	

Term 4

Weeks	Theory	Practical
1	**Revision** **(Multiple Choice)** **(Kahoot)**	**Groups 1 & 2** Drawer front **Groups 3 & 4** Door Apply Finishes
2		
3	**Assessment Task 3 – Due**	
4		**Assessment Task 4 – Major Project Due**
5	**Assessment Task 5 – Yearly Examination – Due**	**Extension/Modification – Major Project**
6	**Feedback** - Portfolio	
7	**Feedback** – Yearly Examination	
8	**Feedback**- Project	

Industrial Technology - Timber: Stage 5 Course (Year 9)

WHS Practices

Duration: Term 1 (4 weeks)

Overview

Students will review the safety aspects of workshops and specific tools and machines as revision from years 7 and 8 and induction for new enrolments. Rules and expectations will be emphasised. Students are expected to reach personal safety standards acceptable in school and industrial settings.

Students will be introduced to hand and machine tools, equipment, materials, manual handling and techniques relevant to the timber industry in the form of demonstrations, posters, instruction and tests.

Safe working practices to industry standard are expected as a sound basis for those who will use tools and machines in their adult lives in unsupervised situations.

Unit Outcomes

A student.

IND5-1
identifies, assesses, applies and manages the risks and WHS issues associated with the use of a range of tools, equipment, materials, processes and technologies.

IND5-2
applies design principles in the modification, development and production of projects.

IND5-7
applies and transfers skills, processes and materials to a variety of contexts and projects.

General Capabilities: (Tick relevant boxes by clicking) ☐Critical and creative thinking ☐Ethical understanding ☐Information and communication technology capability ☐Intercultural understanding ☒Literacy ☒Numeracy ☐Personal and social capability	**Cross Curriculum Priorities** ☐Aboriginal and Torres Strait Islander histories and cultures ☐Asia and Australia's engagement with Asia ☐Sustainability **Other learning across the curriculum areas** ☐Civics and citizenship ☐Difference and diversity ☐Work and enterprise
Formative Assessment Strategies Used: ☒ Eliciting evidence techniques (e.g., exit cards, mini whiteboards, whole class questioning techniques) ☒ Feedback ☐ Peer feedback ☐ Metacognitive strategies (e.g. reflection, self-assessment, goal setting)	**Summative Assessment Strategies Used:** ☐ Trial HSC ☐ Outcomes assessed in formal examinations. ☐ Research Task ☐ Practical Task ☐ Written Report ☐ Formal Assessment Task ☐ Other: (enter any other summative assessment tasks here)

Literacy skills:	Numeracy Skills:
☒ Vocabulary list/Glossary of terms ☐ Cloze passages ☒ Guided Reading ☐ Organising and structuring ideas ☒ Deconstructing texts ☒ Subject specific metalanguage ☐ Writing in different text types ☐ Selects and creates multimodal features to expand ideas. ☐ Using key verbs to direct writing ☐ Support arguments with evidence ☐ Targeted grammar and punctuation tasks ☐ Spelling list, tests, tasks ☐ ALARM ☐ Comprehension tasks ☐ Concept maps ☐ Dictation ☐ Word games (e.g., cross words, word searches) ☐ Brainstorming ☒ Note taking. ☐ PEEL	☐ Applying place value ☐ Calculating percentages ☐ Sequencing numbers and patterns ☐ Working with fractions ☒ Units and measurement ☐ Mass and capacity ☐ Interpreting and using maps ☐ Interpreting and constructing graphs ☒ Working with scale ☐ Ratios ☐ Interpreting and constructing tables ☐ Money and budgeting ☐ Statistical analysis

Outcome	Syllabus Content Statements	Teaching, Learning and Assessment Activities	Resources	REG
WHS and Risk Management **IND5-1** identifies, assesses, applies and manages the risks and WHS issues associated with the use of a range of tools, equipment,	• describe the WHS Act and WHS Regulations, and the role of SafeWork NSW in maintaining a safe workplace. • select and use personal protective equipment (PPE) when working with tools, materials and machines, for example: – wear appropriate footwear.	Teacher explains individual tools, equipment and processes and reinforces appropriate safe working practices. Students complete appropriate WHS safety tests in On - guard Safety Training Modules 1-16	**Practical Project Materials** **Term1** WHS	

materials, processes and technologies.	– wear ear protection, eg ear muffs when using machinery – wear eye protection, eg safety glasses when woodturning – wear protective clothing. • identify and apply the principles of first aid, for example: – outline the procedure to follow after a particular incident, eg cuts and lacerations.	Students demonstrate correct and safe use of tools and equipment. Students undertake practical activities using personal protective equipment.	Onguard Online Safety Training modules Samples of various qualities projects.	
Design **IND5-2** applies design principles in the modification, development and production of projects.	• apply project management techniques and follow a planned sequence through to project completion	Teacher lead discussion on the groups and students work together throughout the course.	Class grouping sheet	
Design **IND5-7** applies and transfers skills, processes and materials to a variety of contexts and projects.	• develop and produce practical projects allowing for the characteristics and properties of materials, systems, components, tools and equipment available, for example: (ACTDEK046) – joining processes – material selection – shaping and forming processes	Teacher lead discussion on the joining process for the carcase and the draws.	Workshop	

Design & Technology –

Jewellery Carcase

Duration: TERM 1

Overview

The construction of the jewellery box as a separate entity allows a focus on specific industry approaches to this type of construction. The use of jigs is investigated with the students designing a jig to allow for the trenches to be routered, the grooved side panels and false front are machined by the teacher using the Circular Bench Saw, with students studying the role of this type of fixed machinery in industry. The dovetail joints are to be produced using the Leigh Dovetail Jig. Other constructions techniques include the carcase of the cabinet. Using the Router and accompanied jigs to router all Rebates and Through Housing Joints.

The design, development and production of the Timber Jewellery Box
requires:

- the safe use and handling of hand, power and machine tools and the use of personal protective equipment in the workshop including elementary first aid procedures.
- functional and aesthetic aspects of design, reviewing the design process and analysing design requirements IND5-7
- the elements of the structure of trees and how a tree grows while considering basic timber working characteristics and the use solid timbers in the production of practical IND5
- use a variety of joining methods including simple joints and gluing IND5-3., IND5-6, IND5-7
- text types (design folio) to support the documentation of practical projects and processes using range of computer software applications to assist in the planning, production and reporting of practical projects. Including: a title page, contents page, research assignment, sketches, drawings and an evaluation. IND5-7 The *design folio* is produced in conjunction with the finished product as part of the assessment.

Unit Outcomes

A student.

IND5-1
identifies, assesses, applies and manages the risks and WHS issues associated with the use of a range of tools, equipment, materials, processes and technologies.
IND5-2
applies design principles in the modification, development and production of projects.
IND5-3
identifies, selects and uses a range of hand and machine tools, equipment and processes to produce quality practical projects.
IND5-4
selects, justifies and uses a range of relevant and associated materials for specific applications.
IND5-5
selects, interprets and applies a range of suitable communication techniques in the development, planning, production and presentation of ideas and projects.
IND5-7
applies and transfers skills, processes and materials to a variety of contexts and projects.
IND5-10
describes, analyses and evaluates the impact of technology on society, the environment and cultural issues locally and globally.

General Capabilities: (Tick relevant boxes by clicking) ☐Critical and creative thinking ☐Ethical understanding ☐Information and communication technology capability ☐Intercultural understanding ☒Literacy ☒Numeracy ☐Personal and social capability	**Cross Curriculum Priorities** ☐Aboriginal and Torres Strait Islander histories and cultures ☐Asia and Australia's engagement with Asia ☒Sustainability **Other learning across the curriculum areas** ☐Civics and citizenship ☐Difference and diversity ☒Work and enterprise
Formative Assessment Strategies Used: ☒ Eliciting evidence techniques (e.g., exit cards, mini whiteboards, whole class questioning techniques) ☒ Feedback ☒ Peer feedback ☐ Metacognitive strategies (e.g. reflection, self-assessment, goal setting)	**Summative Assessment Strategies Used:** ☐ Trial HSC ☐ Outcomes assessed in formal examinations. ☒ Research Task ☒ Practical Task ☒ Written Report ☐ Formal Assessment Task ☐ Other: (enter any other summative assessment tasks here)

Literacy skills:	Numeracy Skills:
☒ Vocabulary list/Glossary of terms ☐ Cloze passages ☒ Guided Reading ☐ Organising and structuring ideas ☒ Deconstructing texts ☒ Subject specific metalanguage ☐ Writing in different text types ☐ Selects and creates multimodal features to expand ideas. ☐ Using key verbs to direct writing ☐ Support arguments with evidence ☐ Targeted grammar and punctuation tasks ☐ Spelling list, tests, tasks ☐ ALARM ☐ Comprehension tasks ☐ Concept maps ☐ Dictation ☒ Word games (e.g., cross words, word searches) ☐ Brainstorming ☒ Note taking. ☒ PEEL	☐ Applying place value ☐ Calculating percentages ☒ Sequencing numbers and patterns ☐ Working with fractions ☒ Units and measurement ☐ Mass and capacity ☐ Interpreting and using maps ☐ Interpreting and constructing graphs ☒ Working with scale ☐ Ratios ☒ Interpreting and constructing tables ☐ Money and budgeting ☐ Statistical analysis

Outcome	Syllabus Content Statements	Teaching, Learning and Assessment Activities	Resources	REG
WHS and risk management **IND5-1** identifies, assesses, applies and manages the risks and WHS issues associated with the use of a range of tools, equipment, materials, processes and technologies.	• demonstrate safe workshop practices and procedures, for example: – clamp materials securely when cutting, drilling or routing. – follow workshop signage instructions. • safely use and maintain hand, power and machine tools.	Divide the class in groups (groups of 4) Teacher demonstration of tools and equipment to be used in the production of the Bedside table**.** This includes: – marking out tools – saws – disc sander – quick release clamps	**Practical Project** Workshop Tools and equipment Materials Cutting list	
Workplace communication skills **IND5-2** applies design principles in the modification, development and production of projects.	• develop design and production folios using appropriate ICT, for example: – CAD – project management tools, eg timeline, cutting list • prepare design and production folios to describe the management and processes undertaken in the production of practical projects	Students begin Design Portfolio: – title page – contents page – statement of Intent – research ect.	Computer Lab or classroom with projector Electronic portfolio Guide	
Tools, equipment and techniques **IND5-3** identifies, selects and uses a range of hand and machine tools, equipment and processes to produce quality practical projects.	• identify, select and use suitable processes and techniques for specific projects (ACTDEK047, ACTDEP050) • identify, select and use a range of hand, power and machine tools for preparation, marking out, cutting, shaping and joining timber (ACTDEK046) • maintain hand tools used to cut and shape timber. • apply power and machine tools in the preparing, cutting, shaping and joining of construction of projects, for example: – moulding an edge using a router • select and use a range of framing, corner, joining and widening methods, for example: (ACTDEK046) – through housing joint for a shelf or divider • prepare and use jigs and templates to assist in the construction and assembly of projects.	Show students examples of joints, drawer and door styles that could be used for the project. Possible material choice for the projects should also be discussed at this stage. Solid vs manufactured / softwood vs hardwood. The teacher is to be used for table saw work or for any other piece of machinery that the student is not allowed to use however the majority of the work needs to be completed by the student.	**Practical Project** Workshop Tools and equipment Materials Cutting list All jigs	

Societal and environmental impact **IND5-4** selects, justifies and uses a range of relevant and associated materials for specific applications.	• explore the environmental effect from the production and use of manufactured boards – plantation timbers used to conserve old growth timbers • investigate the environmental implications of the use of old-growth timbers • describe the effects of the timber and furnishing industries on society and the environment, for example: – conserving historic furniture – employment and training • explain the environmental and societal impact of resources used in the development and production of projects	Teacher instruction identifies the nature and properties of hardwoods and softwoods. discuss the use of grain and grain direction to limit any functional problems with the **Jewellery Box.** discuss the use of figure and grain to enhance the aesthetic appeal of the **Product.** students document and research two timbers suitable for the construction of the **Product (Design Portfolio)** Class watch video **The Timber Industry. Australia's Timber Industry Today"** Teacher led discussion on – The seasoning of timber. – Old growth forest – Planation timber – Manufactured board	Industrial Technology (all resources link to the 2003 syllabus) Computer Lab or classroom with projector ClickView or YouTube	
Equipment, tools and techniques **IND5-7** applies and transfers skills, processes and materials to a variety of contexts and projects.	• select and use a range of framing, corner, joining and widening methods, for example: (ACTDEK046) – biscuit and dowel widening joints – mortise and tenon joint for a table – through housing joint for a shelf or divider • prepare and use jigs and templates to assist in the construction and assembly of projects.	**Group 1&2** Demonstration on the use of the Router and Jig. Students to use Jigs to Router. - Through Housing Joint - Rebate Joint **Group 3** Demonstration on the safe use of the Finger Joint Jig to construct the drawer carcass. Students construct Finger joints on 2 corners (Front) *NB. Trench for base of drawer is cut by teacher on table saw. (This is a banned item for student use). Glue and clamping of carcass. **Group 4** Router rebate using the trimmer along the two side (ends/back) Teacher to demonstrate how to operate and adjust trimmer. Student to follow workshop drawing.	**Practical Project** Workshop Tools and equipment Materials Cutting list Samples of various qualities projects. All jigs	

Links to industry **IND5-10** describes, analyses and evaluates the impact of technology on society, the environment and cultural issues locally and globally.	• compare and contrast contemporary industrial manufacturing techniques, materials and equipment with classroom experiences – production of kitchen cabinetry using multi-head boring machinery – embedding laminated timber with composite fibres • research current techniques, materials and equipment used by industry to develop and produce timber products (ACTDEK047) • describe the impact of new and emerging technologies on careers and professions in the timber industry • compare and contrast careers and professions in the timber and related industries, for example: – a kitchen manufacturer compared to a builder.	Teacher lead discussion on the advancement to tools, machinery, and processes. Class watches video **Tree Harvesting 2018 on YouTube** as teacher explains process, for group discussion. Discussion of the sustainability of logging. Research logging in other countries.	Computer Lab or classroom with projector ClickView, or YouTube	
Materials **IND5-4** selects, justifies and uses a range of relevant and associated materials for specific applications.	• identify and check for defects in solid timber and apply techniques to overcome defects in the production of practical projects. • analyse the effects of incorrect seasoning and insect attack on properties and appearance of the timber. • compare the machining properties of solid timbers and timber products in relation to production, for example: (ACTDEK046) – straight grain for ease of plaining – tight grain for improved surface finish when routing – uniform strength of plywood	Teacher to work through theory booklet and discuss all the different types joining methods and their purpose for different applications, Students should be working their way through drawer and cabinet. - Through Housing Joint - Rebate Joint - Finger Joint - Class watches videos on different joining methods above. Teacher explains as video is playing.	Industrial Technology (all resources link to the 2003 syllabus) Computer Lab or classroom with projector ClickView, or YouTube	

Design **IND5-5** selects, interprets and applies a range of suitable communication techniques in the development, planning, production and presentation of ideas and projects.	• identify and investigate factors influencing design in timber projects, for example: – colour – grain – hardware – proportion • identify the functional and aesthetic aspects of design in timber projects, for example: – suitability of finish for desired appearance – suitability of species for outdoor applications	Teacher to work through Folio Guide and discuss all the different types of tools and their purpose for different procedures. Students should be sanding all work before dry assembly. Teacher lead discussion on the correct use of all required hand and power tools. Ongoing observance and questioning by the teacher on the compliance of the students with safe working and co-operative attitudes and practices. Class watch videos as teacher explains use of a variety of tools.	Computer Lab or classroom with projector ClickView, or YouTube	
Tools, equipment and techniques **IND5-3** identifies, selects and uses a range of hand and machine tools, equipment and processes to produce quality practical projects.	• select and use a range of framing, corner, joining and widening methods, for example: (ACTDEK046) – biscuit and dowel widening joints – mortise and tenon joint for a table – through housing joint for a shelf or divider • prepare and use jigs and templates to assist in the construction and assembly of projects. • select and apply a range of appropriate techniques to check projects for square, for example: – measuring diagonals – using a builder's square	Teacher to start demonstrating how to assemble both the drawer and cabinet together. Ensure the following: - dry assembly - ample glue spread on fingers. - clamping in both directions. - ensure box or carcass is square measuring diagonals. - wipe off excess glue. - allow appropriate gluing time, 8 hrs. - clamp removal - sanding of drawer box or carcass - use of the following: - portable Belt Sander and or orbital sander to remove glue stains.	Workshop Teachers own sample project to display steps required.	

Tools, equipment and techniques **IND5-3** identifies, selects and uses a range of hand and machine tools, equipment and processes to produce quality practical projects.	• identify, select and use suitable processes and techniques for specific projects (ACTDEK047, ACTDEP050) • identify, select and use a range of hand, power and machine tools for preparation, marking out, cutting, shaping and joining timber (ACTDEK046) • maintain hand tools used to cut and shape timber • select and use a range of framing, corner, joining and widening methods, for example: (ACTDEK046) – biscuit and dowel widening joints – mortise and tenon joint for a table – through housing joint for a shelf or divider	Teacher to work through theory booklet and discuss all the different types of joints and tools required to produce and assemble them.	Computer Lab or classroom with projector ClickView, or YouTube Industrial Technology (all resources link to the 2003 syllabus)	
Workplace communication skills **IND5-6** identifies and participates in collaborative work practices in the learning environment.	• select and use specialist terminology in context, for example: – glossary – procedure/storyboard – record of production	Teacher to work through theory booklet and discuss all the different types of drill bits and their purpose for different procedures. Class watches videos on drill bits. Teacher stops video at certain points and explains important information.	Computer Lab or classroom with projector ClickView, or YouTube Industrial Technology (all resources link to the 2003 syllabus)	
Workplace communication skills **IND5-5** selects, interprets and applies a range of suitable communication techniques in the development, planning, production and presentation of ideas and projects.	• develop design and production folios using appropriate ICT, for example: – CAD – project management tools, eg timeline, cutting list • prepare design and production folios to describe the management and processes undertaken in the production of practical projects	Continue with Design Portfolio: – title page – contents page – statement of Intent – research with PMI chart – start of steps in construction – tool list – timber list	Computer Lab Electronic portfolio guide.	

Design & Technology –

Jewellery Box Carcase

Duration: TERM 2

Overview

The construction of the Jewellery Box as a separate entity allows a focus on specific industry approaches to this type of construction. The use of jigs is investigated with the students designing a jig to allow for the trenches to be routered, the grooved side panels and false front are machined by the teacher using the Circular Bench Saw, with students studying the role of this type of fixed machinery in industry. The dovetail joints are to be produced using the Leigh Dovetail Jig. Other constructions techniques include the carcase of the cabinet. Using the Router and accompanied jigs to router all Rebates and Through Housing Joints.

The design, development and production of the Timber Jewellery Box requires:

- the safe use and handling of hand, power and machine tools and the use of personal protective equipment in the workshop including elementary first aid procedures.
- functional and aesthetic aspects of design, reviewing the design process and analysing design requirements IND5-7
- the elements of the structure of trees and how a tree grows while considering basic timber working characteristics and the use solid timbers in the production of practical [IND5-4
- use a variety of joining methods including: simple joints and gluing IND5-6, IND5-7
- text types (design folio) to support the documentation of practical projects and processes using range of computer software applications to assist in the planning, production and reporting of practical projects. Including: a title page, contents page, research assignment, sketches, drawings and an evaluation. IND5-7 The *design folio* is produced in conjunction with the finished product as part of the assessment.

Unit Outcome

A student

IND5-1
identifies, assesses, applies and manages the risks and WHS issues associated with the use of a range of tools, equipment, materials, processes and technologies.
IND5-2
applies design principles in the modification, development and production of projects.
IND5-3
identifies, selects and uses a range of hand and machine tools, equipment and processes to produce quality practical projects.
IND5-4
selects, justifies and uses a range of relevant and associated materials for specific applications.
IND5-7
applies and transfers skills, processes and materials to a variety of contexts and projects.
IND5-8
evaluates products in terms of functional, economic, aesthetic and environmental qualities and
quality of construction.

General Capabilities: (Tick relevant boxes by clicking) ☐Critical and creative thinking ☐Ethical understanding ☐Information and communication technology capability ☐Intercultural understanding ☒Literacy ☒Numeracy ☐Personal and social capability	**Cross Curriculum Priorities** ☐Aboriginal and Torres Strait Islander histories and cultures ☐Asia and Australia's engagement with Asia ☒Sustainability **Other learning across the curriculum areas** ☐Civics and citizenship ☐Difference and diversity ☒Work and enterprise
Formative Assessment Strategies Used: ☐ Eliciting evidence techniques (e.g. exit cards, mini whiteboards, whole class questioning techniques) ☒ Feedback ☒ Peer feedback ☐ Metacognitive strategies (e.g. reflection, self-assessment, goal setting)	**Summative Assessment Strategies Used:** ☐ Trial HSC ☒ Outcomes assessed in formal examinations. ☒ Research Task ☒ Practical Task ☒ Written Report ☒ Formal Assessment Task ☐ Other: (enter any other summative assessment tasks here)

Literacy skills:	Numeracy Skills:
☒ Vocabulary list/Glossary of terms ☐ Cloze passages ☒ Guided Reading ☐ Organising and structuring ideas ☐ Deconstructing texts ☒ Subject specific metalanguage ☐ Writing in different text types ☐ Selects and creates multimodal features to expand ideas. ☐ Using key verbs to direct writing ☐ Support arguments with evidence ☐ Targeted grammar and punctuation tasks ☐ Spelling list, tests, tasks ☐ ALARM ☐ Comprehension tasks ☐ Concept maps ☐ Dictation ☒ Word games (e.g., cross words, word searches) ☐ Brainstorming ☐ Note taking. ☒ PEEL	☐ Applying place value ☐ Calculating percentages ☐ Sequencing numbers and patterns ☐ Working with fractions ☒ Units and measurement ☐ Mass and capacity ☐ Interpreting and using maps ☐ Interpreting and constructing graphs ☒ Working with scale ☐ Ratios ☒ Interpreting and constructing tables ☐ Money and budgeting ☐ Statistical analysis

Outcome	Syllabus Content Statements	Teaching, Learning and Assessment Activities	Resources	REG
WHS and risk management **IND5-1** identifies, assesses, applies and manages the risks and WHS issues associated with the use of a range of tools, equipment, materials, processes and technologies.	• identify and apply the principles of risk management, for example: – identify a particular risk and implement risk-reduction procedures. • safely use and maintain hand, power and machine tools.	Show a risk assessment band saw and discuss what is involved in its creation. Ongoing observance and questioning by the teacher on the compliance of the students with safe working and co-operative attitudes and practices.	Workshop Sample of risk assessment. PPE	
Workplace communication skills **IND5-2** applies design principles in the modification, development and production of projects.	• produce annotated freehand sketches of project components and/or projects to visualise, communicate, understand and record ideas • modify and/or apply workshop drawings in the completion of projects, for example: – use CAD applications in the production of workshop drawings.	Students are to complete an annotated free hand sketch. Teacher give tutorial on drawing program. Using Google Sketch up or Fusion 360 produce workshop drawings.	Drawing boards and drawing equipment. Computer Lab	
Materials **IND5-3** identifies, selects and uses a range of hand and machine tools, equipment and processes to produce quality practical projects.	• research and select appropriate timbers or timber products and allied materials when completing projects (ACTDEK046)	Students document and research timbers suitable for the construction of the **Product.** Teacher presents PPT on where timber comes from and the difference between natural and man-made timbers.	Computer Lab Internet research Electronic portfolio guide.	

Materials **IND5-4** selects, justifies and uses a range of relevant and associated materials for specific applications.	• identify, select and use a range of cabinet fittings, hardware and allied materials in the production of projects, for example: – glass top for a coffee table – hinges/handles on a cabinet – knock-down fittings for flatpack furniture – metal runners for smooth-running drawers	Teacher lead discussion in the possible variety of top, hinges and door hardware available.	Computer Lab Electronic portfolio guide. Industrial Technology (all resources link to the 2003 syllabus)	
Links to industry **IND5-7** applies and transfers skills, processes and materials to a variety of contexts and projects.	• compare and contrast contemporary industrial manufacturing techniques, materials and equipment with classroom experiences – production of kitchen cabinetry using multi-head boring machinery – embedding laminated timber with composite fibres • research current techniques, materials and equipment used by industry to develop and produce timber products (ACTDEK047) • describe the impact of new and emerging technologies on careers and professions in the timber industry • compare and contrast careers and professions in the timber and related industries, for example: – a kitchen manufacturer compared to a builder.	Teacher discusses the different types of manufacture. -IKEA. Mass production of timber furniture (worldwide) -Hand crafted. Coopers (Taren Point, local) Throughout teacher discusses and draws further links with Industry machinery and furniture production. Teacher presents PPT on where timber comes from and the difference between natural and man-made timbers.	Computer Lab or classroom with projector ClickView, or YouTube Electronic portfolio guide. Industrial Technology (all resources link to the 2003 syllabus)	
Design **IND5-8** evaluates products in terms of functional, economic, aesthetic and environmental qualities and quality of construction.	• evaluate the impact of design and work practices/processes on the quality of finished projects	Teacher and student assess project progress and discuss the quality of the project and areas that may need to be improved on.	Workshop	

IND5-1 **IND5-2** **IND5-3** **IND5-4**	Revision for half yearly examination	Teacher will lead discussion for revision	Computer Lab	
IND5-1 **IND5-3** **IND5-5** **IND5-8**	Major Project (Carcass)	Students will receive progress Project marks and given feedback reflection on their work. Teacher will go through review with the whole class.	Workshop	
IND5-1 **IND5-2** **IND5-3** **IND5-4** **IND5-6**	Half Yearly Examination	Students will receive marked Examination, and Teacher will go through Exam review with the whole class.	Computer Lab	

Design & Technology

INLAY AND SKIRTING

Duration: TERM 3

Overview

The construction of the inlay and skirting allows a focus on specific industry approaches to this type of construction. The use of mitre joints allows for extra process for students to undertake. Other constructions techniques include gluing and secret nailing will also be investigated.

The production of the Timber Cabinet
requires:

- the safe use and handling of hand, power and machine tools and the use of personal protective equipment in the workshop including elementary first aid procedures.
- use a variety of joining methods including: simple joints and gluing IND5-6, IND5-7

Unit Outcomes

A student

IND5-2
applies design principles in the modification, development and production of projects.
IND5-3
identifies, selects and uses a range of hand and machine tools, equipment and processes to produce quality practical projects.
IND5-4
selects, justifies and uses a range of relevant and associated materials for specific applications.
IND5-5
selects, interprets and applies a range of suitable communication techniques in the development, planning, production and presentation of ideas and projects.
IND5-7
applies and transfers skills, processes and materials to a variety of contexts and projects.
IND5-8
evaluates products in terms of functional, economic, aesthetic and environmental qualities and
quality of construction.

General Capabilities: (Tick relevant boxes by clicking)

☐Critical and creative thinking

☐Ethical understanding

☐Information and communication technology capability

☐Intercultural understanding

☒Literacy

☒Numeracy

☐Personal and social capability

Cross Curriculum Priorities

☐Aboriginal and Torres Strait Islander histories and cultures

☐Asia and Australia's engagement with Asia

☐Sustainability

Other learning across the curriculum areas

☐Civics and citizenship

☐Difference and diversity

☐Work and enterprise

Formative Assessment Strategies Used:

☐ Eliciting evidence techniques (e.g., exit cards, mini whiteboards, whole class questioning techniques)

☒ Feedback

☒ Peer feedback

☐ Metacognitive strategies (e.g. reflection, self-assessment, goal setting)

Summative Assessment Strategies Used:

☐ Trial HSC

☐ Outcomes assessed in formal examinations.

☒ Research Task

☒ Practical Task

☒ Written Report

☐ Formal Assessment Task

☐ Other: (enter any other summative assessment tasks here)

Literacy skills:	Numeracy Skills:
☒ Vocabulary list/Glossary of terms ☐ Cloze passages ☒ Guided Reading ☐ Organising and structuring ideas ☐ Deconstructing texts ☒ Subject specific metalanguage ☐ Writing in different text types ☐ Selects and creates multimodal features to expand ideas. ☐ Using key verbs to direct writing ☐ Support arguments with evidence ☐ Targeted grammar and punctuation tasks ☐ Spelling list, tests, tasks ☐ ALARM ☐ Comprehension tasks ☐ Concept maps ☐ Dictation ☒ Word games (e.g., cross words, word searches) ☐ Brainstorming ☐ Note taking. ☒ PEEL	☐ Applying place value ☐ Calculating percentages ☐ Sequencing numbers and patterns ☐ Working with fractions ☒ Units and measurement ☐ Mass and capacity ☐ Interpreting and using maps ☐ Interpreting and constructing graphs ☒ Working with scale ☐ Ratios ☐ Interpreting and constructing tables ☐ Money and budgeting ☐ Statistical analysis

Outcome	Syllabus Content Statements	Teaching, Learning and Assessment Activities	Resources	REG
Design **IND5-2** applies design principles in the modification, development and production of projects.	• use and/or modify designs when completing projects (ACTDEP049) • calculate quantities and costs of materials and components used in the completion of projects, for example: – determine processes for the efficient use of materials – use spreadsheets to calculate material quantities and monitor project costs	Teacher demonstration of the use of a spread sheet for the following: – prepare and use materials lists – presenting a materials costing list. – project costing – calculate quantities and costs of materials to be used in the completion of projects – use spreadsheets to assist in the calculation of project costs – calculate the total cost of projects – follow a planned construction sequence	Computer Lab	
Tools, equipment and techniques **IND5-3** identifies, selects and uses a range of hand and machine tools, equipment and processes to produce quality practical projects.	• select and apply appropriate woodturning techniques to shape timber, for example: – cutting – faceplate turning, eg bowl turning – scraping • investigate advanced manufacturing techniques to assist in the production of projects, for example: – CNC equipment, eg laser cutters, CNC milling machines – copy lathes	Discussion on the variety of machinery to product different effects to a product. Class watches videos on **CNC lathe and Traditional lathe** and investigates the negative and positive benefits of each.	Computer Lab or classroom with projector ClickView or YouTube Industrial Technology (all resources link to the 2003 syllabus)	
Materials **IND5-4** selects, justifies and uses a range of relevant and associated materials for specific applications.	• investigate methods of cutting veneers and their associated characteristics and properties.	Discussion on the variety of materials to product different effects to a product. Class watch video titled **Engineered Wood products**	Computer Lab or classroom with projector ClickView or YouTube	

Workplace communication skills **IND5-5** selects, interprets and applies a range of suitable communication techniques in the development, planning, production and presentation of ideas and projects.	• prepare design and production folios to describe the management and processes undertaken in the production of practical projects	Teacher assess with student the portfolio and makes sure all headings are covered. 1. Tittle Page & Contents Page 2. Statement of Intent 3. Research 5 Existing Design Ideas including a PMI chart. 4. Research of tools 5. Research 2 different joints 6. Research on timbers 7. Research Cabinet Hardware 8. Freehand Sketch 9. Draw detailed 10. Final Design 11. Cutting List and Materials Costing List 12. Project Management 13. Evaluation	Computer Lab Electronic portfolio	
Workplace communication skills **IND5-7** applies and transfers acquired knowledge and skills to subsequent learning experiences in a variety of contexts and projects.	• modify and/or apply workshop drawings in the completion of projects, for example: – use CAD applications in the production of workshop drawings • develop design and production folios using appropriate ICT, for example: – CAD	Using Google Sketch up or Fusion 360 produce and modify workshop drawings.	Computer Lab	
Design **IND5-8** evaluates products in terms of functional, economic, aesthetic and environmental qualities and quality of construction.	• evaluate the impact of design and work practices/processes on the quality of finished projects	Students will receive Project marks and given feedback reflection on their work. Teacher will go through review with the whole class.	Workshop	

Design & Technology –

Finishing & Extension Work

Duration: TERM 4

Overview

The construction of the Timber Cabinet and the overall finish of the project is what students will be assessed on. Project must be smooth, no pencil lines, putty finished off correctly, door and drawers operating correctly.

The production of the Timber Cabinet
requires:

- the safe use and handling of hand, power and machine tools and the use of personal protective equipment in the workshop including elementary first aid procedures.
- functional and aesthetic aspects of design, reviewing the design process and analysing design requirements IND5-7
- use a variety of joining methods including: simple joints and gluing IND5-6, IND5-7

Unit Outcomes

A student

IND5-1
identifies, assesses, applies and manages the risks and WHS issues associated with the use of a range of tools, equipment, materials, processes and technologies.
IND5-3
identifies, selects and uses a range of hand and machine tools, equipment and processes to produce quality practical projects.
IND5-7
applies and transfers skills, processes and materials to a variety of contexts and projects.
IND5-8
evaluates products in terms of functional, economic, aesthetic and environmental qualities and
quality of construction.

General Capabilities: (Tick relevant boxes by clicking) ☐Critical and creative thinking ☐Ethical understanding ☐Information and communication technology capability ☐Intercultural understanding ☒Literacy ☒Numeracy ☐Personal and social capability	**Cross Curriculum Priorities** ☐Aboriginal and Torres Strait Islander histories and cultures ☐Asia and Australia's engagement with Asia ☐Sustainability **Other learning across the curriculum areas** ☐Civics and citizenship ☐Difference and diversity ☐Work and enterprise
Formative Assessment Strategies Used: ☐ Eliciting evidence techniques (e.g. exit cards, mini whiteboards, whole class questioning techniques) ☒ Feedback ☒ Peer feedback ☐ Metacognitive strategies (e.g. reflection, self-assessment, goal setting)	**Summative Assessment Strategies Used:** ☐ Trial HSC ☒ Outcomes assessed in formal examinations. ☒ Research Task ☒ Practical Task ☒ Written Report ☒ Formal Assessment Task ☐ Other: (enter any other summative assessment tasks here)

Literacy skills:	Numeracy Skills:
☒ Vocabulary list/Glossary of terms ☐ Cloze passages ☒ Guided Reading ☐ Organising and structuring ideas ☒ Deconstructing texts ☒ Subject specific metalanguage ☐ Writing in different text types ☐ Selects and creates multimodal features to expand ideas. ☐ Using key verbs to direct writing ☐ Support arguments with evidence ☐ Targeted grammar and punctuation tasks ☐ Spelling list, tests, tasks ☐ ALARM ☐ Comprehension tasks ☐ Concept maps ☐ Dictation ☒ Word games (e.g. cross words, word searches) ☐ Brainstorming ☐ Note taking. ☒ PEEL	☐ Applying place value ☐ Calculating percentages ☐ Sequencing numbers and patterns ☐ Working with fractions ☒ Units and measurement ☐ Mass and capacity ☐ Interpreting and using maps ☐ Interpreting and constructing graphs ☒ Working with scale ☐ Ratios ☐ Interpreting and constructing tables ☐ Money and budgeting ☐ Statistical analysis

Outcome	Syllabus Content Statements	Teaching, Learning and Assessment Activities	Resources	REG
WHS and risk management **IND5-1** identifies, assesses, applies and manages the risks and WHS issues associated with the use of a range of tools, equipment, materials, processes and technologies.	• demonstrate safe workshop practices and procedures, for example: – apply finishes in a well-ventilated area.	Teacher discusses and demonstrates how to apply the correct finish. Follow all WHS guidelines	Workshop Lacquer/ Stain Brushed Spray gun	
Tools, equipment and techniques **IND5-3** identifies, selects and uses a range of hand and machine tools, equipment and processes to produce quality practical projects.	• select and apply a range of production and detailing techniques, for example: – inlay – laser engraving	Teacher to demonstrate how to glue and assemble a door. Surface preparation with Inlay and Finishes.	Workshop Teachers project	
Workplace communication skills **IND5-7** applies and transfers skills, processes and materials to a variety of contexts and projects.	• read and interpret plans and/or materials lists to prepare materials for the completion of projects	Use computer program to assist in the development of their portfolio materialist spreadsheet.	Computer Lab	

Tools, equipment and techniques **IND5-8** evaluates products in terms of functional, economic, aesthetic and environmental qualities and quality of construction.	• select and apply appropriate surface preparation methods and apply a variety of finishes	Student finish off Project ready for submission for marking. Being aware of the following: – high quality finish – draw slide easily – doors shut completely – sturdy on the ground	Workshop Teachers project	
IND5-2 **IND5-3** **IND5-5** **IND5-8**	Major Project Folio	Students will receive Portfolio marks and given feedback reflection on their work. Teacher will go through review with the whole class.	Computer Lab	
IND5-1 **IND5-3** **IND5-5** **IND5-6** **IND5-7** **IND5-8**	Yearly Examination	Students will receive marked Examination, and Teacher will go through Exam review with the whole class.	Computer Lab	
IND5-1 **IND5-3** **IND5-5** **IND5-8**	Major Project Final Product	Students will receive Project marks and given feedback reflection on their work. Teacher will go through review with the whole class.	Workshop	

Program Reflection and Evaluation

TEACHER:	**CLASS:**
DATE UNIT COMMENCED:	**DATE UNIT CONCLUDED:**

Variations to program: (List additional resources and outline alternative strategies used

The most effective teaching/ learning strategies and resources in this unit were: (Please nominate at least 3)

1.

2.

3.

Less effective teaching strategies and resources for this unit were: (Please nominate at least 2)

1.

2.

Teacher Evaluation	Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree	Comments (N.R = Not relevant to unit)
1. Were the outcomes of this unit achieved (please comment)?						
2. Was the resource content selection appropriate?						
3. Were the language text type activities successful?						
4. Were you comfortable teaching this unit?						
5. Did you feel the students enjoyed this unit?						
6. Was the length of time for this unit satisfactory?						
7. Was the technology focus relevant?						
8. Was the Aboriginal / Indigenous focus appropriate?						
9. Were individual differences catered for? Special needs / gifted (comment).						

Student Evaluation: (Oral) At the end of the Unit	Number in class ____	Additional Comments:
1. Found the unit interesting		
2. Learnt something new		
3. Enjoyed the activities within the unit: discussions / group work / writing		

Teachers signature:	Date:	Head Teacher sign off:

Once completed and signed a copy must be stored in TAS Share in appropriate Subject Folder, as well as a hard copy in the yellow folder located in the Home Economics Staffroom.