OAKHILL COLLEGE TAS DEPARTMENT	STAGE 4 TECHNOLOGY MANDATORY	MATERIAL TECHNOLOGIES – TEXTILES PROGRAM	2024

Unit overview	Duration
The Material Technologies context focuses on the application of specialist skills and techniques to a broad range of traditional, contemporary and advancing materials. Students develop knowledge and understanding of the characteristics and properties of a range of materials through research, experimentation and practical investigation, and when they make products to satisfy identified needs and opportunities.	9-10 Weeks

Outcomes	Assessment overview
Technology Mandatory A student: › designs, communicates and evaluates innovative ideas and creative solutions to authentic problems or opportunities TE4-1DP › plans and manages the production of designed solutions TE4-2DP › selects and safely applies a broad range of tools, materials and processes in the production of quality projects TE4-3DP › investigates how the characteristics and properties of tools, materials and processes affect their use in designed solutions TE4-9MA › explains how people in technology related professions contribute to society now and into the future TE4-10TS	**Practical - 60 marks** **Ideas:** Lined Tote bag French Seam Tote Bag Bucket Hat **Portfolio - 40 marks**

Resources	Additional Resources
Student Booklet Digital Synopsis - Design Principles YouTube:Ted Talk: How Textiles will Fashion the Future YouTube:TED-Ed: Life Cycle of a T-Shirt	YouTube: Textiles: What are they? Where do they come from? YouTube: TED-Ed: Why cotton is everything

YouTube: National Geographic: How your t-shirt can make a difference	

Outcomes	Content	Teaching, learning and assessment	Resources	Register
Research - Identifying and Defining				
		Students define the following terms: • Fibres • Yarns • Fabrics • Natural Fibres • Synthetic Fibres • Apparel • Non-Apparel • Functional • Aesthetic	Student Booklet What are textiles?	
TE4-9MA	**investigate the characteristics and properties of a range of materials and products** ** From Textiles Technology Years 7-10 Syllabus (2019)* describe how the functional properties of fabric, yarn and fibre contribute to the performance of textile items, for example: – durability, absorbency, flammability, elasticity – resilience, eg 5% elastane in woven fabrics used for shirts, jeans – knitted fabrics will naturally crease less than woven fabrics	Students complete the close passage to define the following terms: • Absorbency / Absorbent • Breathability / Breathable • Elasticity / Elastic • Flammability / Flammable • Flexibility / Flexible • Heat Insulation /Insulator • Hydrophobic • Lustrer / Lustrous • Tensile Strength • Translucence /Translucent	Student Booklet Properties of Textiles	

Outcomes	Content	Teaching, learning and assessment	Resources	Register
TE4-9MA	**investigate the characteristics and properties of a range of materials and products** ** From Textiles Technology Years 7-10 Syllabus (2019)* identify the performance criteria of textile items, as determined by the end use, for example: – an umbrella must be waterproof and mould-resistant – a dance costume must allow for quick costume changes – a surfboard cover needs to be durable – a firefighter uniform needs to be fire resistant and highly visible	**Big Question: Why are textiles important?** REFLECTION: What textiles do you use . . ? ● When I wake up and I need to get ready for school ● When I am in the car travelling to and from school ● When the weather changes and it is: ○ really cold ○ really hot ○ raining ● When I am at school - during lessons and lunch breaks ● When I am playing sports ● When I need first aid ● When I am relaxing ● When I am getting ready to go to sleep Watch the video: Ted Talk: How Textiles will Fashion the Future Technologist and entrepreneur Jim Owens explores why textiles are so important to our daily lives, not just for the clothes that we wear but in many other applications, including medicine engineering, and space exploration.	Student Booklet Why are Textiles Important? Ted Talk: How Textiles will Fashion the Future	
		Students describe the characteristics and properties of the following textiles: ● Raincoats and umbrellas ● Suits worn by firefighters ● Bullet-proof vests, worn by police officers and military personnel ● High visibility clothing worn by tradies (especially at night time)	Student Booklet Functions of Textiles	

Outcomes	Content	Teaching, learning and assessment	Resources	Register
		• Scrubs, gloves and face masks worn by doctors and nurses • Airbags used in cars • Bandages and band aids • Window screens or tents		
		Matching activity: Students identify specific cultures based on their national dress Drawing activity: What textiles are uniquely Australian? Draw and label an image of the 'typical Aussie'.	Student Booklet Cultural Identity	
		Students review the 5 stages of textile production: 1. Fibre Production 2. Yarn Production 3. Fabric Production 4. Colouring Processes 5. Textile Production Watch the video: TED-Ed: Life Cycle of a T-Shirt	Student Booklet Textile Processes TED-Ed: Life Cycle of a T-Shirt	
TE4-9MA	**investigate the characteristics and properties of a range of materials and products** ** From Textiles Technology Years 7-10 Syllabus (2019)* investigate natural, manufactured and fibre blend fabrics to	Students classify fibre into the following categories: • Natural - Plant • Natural - Animal • Synthetic	Student Booklet Fibres	

Outcomes	Content	Teaching, learning and assessment	Resources	Register
	determine the fibre(s) used in textile items, for example: – natural fibres, eg wool, cotton, bamboo and silk – manufactured fibres, eg polyester and nylon – fibre blend, eg polyester/cotton, cotton/elastane – testing or experimenting with fabrics to determine fibre content	Students research 10 of the fibres listed above and outline the chemical and physical properties of each fibre.		
TE4-9MA	**investigate the characteristics and properties of a range of materials and products** ** From Textiles Technology Years 7-10 Syllabus (2019)* identify fabric structures, for example: – woven, eg plain weave, twill weave – knitted, eg interlock knit – non-woven, eg interfacing, wadding, felt, water-soluble fabrics – engineered fabrics, eg geotextiles, pond liners, laminates	Students read about the three types of fabric structures	Student Booklet Fabric Structures	
	investigate a current and innovative product developed by an Aboriginal and/or Torres Strait Islander designer		Student Booklet Fabric Structures	

Outcomes	Content	Teaching, learning and assessment	Resources	Register
	that is influenced by their cultural identity ** From Textiles Technology Years 7-10 Syllabus (2019)* describe how people from a range of cultures including Aboriginal and/or Torres Strait Islander Peoples use textiles as an expressive and functional medium, for example: – woven items produced by Aboriginal Peoples, eg fish traps, baskets			
	investigate the characteristics and properties of a range of materials and products ** From Textiles Technology Years 7-10 Syllabus (2019)* name common fabrics used in textile items, for example: – denim – polar fleece – organza – felt			
	investigate products and services for the individual and/or the community, considering ethical and social factors ** From Textiles Technology Years 7-10 Syllabus (2019)* investigate the potential	Define the term 'fast fashion' Define the term 'landfill' Explain how fast fashion contributes to landfill Explain how textile production contributes to water pollution	Student Booklet Impact on the Environment	

Outcomes	Content	Teaching, learning and assessment	Resources	Register
	impact textiles production has on the environment, for example: – pollution, eg fast fashion's contribution to landfill – recycling, eg plastic bottles recycled to make fabrics – resource management, eg reducing toxic chemicals used in the dyeing process	Explain how textile production contributes to greenhouse gas emission Explain how recycling plastic bottles can reduce the impact of the textile industry on the environment Outline one other way that you can help to reduce the impact of the textile industry on the environment Watch the video: National Geographic: How your t-shirt can make a difference	National Geographic: How your t-shirt can make a difference	
	Extension: investigate the role of the professional in the related technology, and their impact on the environment and society			
	Extension: experiment with a range of appropriate techniques to produce a design solution ** From Textiles Technology Years 7-10 Syllabus (2019)* experiment with textile materials to determine which are most appropriate for a textile item, for example: – testing fabric durability through abrasion tests – performance testing of fabrics through moisture absorbency and resistance tests			

Outcomes	Content	Teaching, learning and assessment	Resources	Register
	Planning and Designing			
	develop criteria to evaluate design ideas, processes and solutions, the functionality, aesthetics and a range of constraints, eg accessibility, cultural, economic, resources, safety, social, sustainability, technical ** From Textiles Technology Years 7-10 Syllabus (2019)* establish criteria for evaluation of a textile item, for example: – functional requirements – aesthetic aspects – proficiency in manufacturing			
	select from a range of materials, components, tools, equipment and processes to develop design solutions ** From Textiles Technology Years 7-10 Syllabus (2019)* justify the selection of materials for a textile item			
	** From Textiles Technology Years 7-10 Syllabus (2019)* investigate the elements of design, for example:	Use Digital Synopsis to take notes on design principles: 1. Line 2. Scale	Student Booklet Design Principles	

Outcomes	Content	Teaching, learning and assessment	Resources	Register
	– line, direction, shape, size, colour, value and texture	3. Colour 4. Repetition 5. Negative Space 6. Symmetry 7. Transparency 8. Texture 9. Balance 10. Hierarchy 11. Contrast 12. Framing 13. Grid 14. Randomness 15. Direction 16. Rules 17. Movement 18. Depth 19. Typography 20. Composition	Digital Synopsis - Design Principles	
	generate and communicate the development of design ideas, plans and processes for various audiences using appropriate technical terms and technologies including graphical representation techniques, for example: - sketches, drawings and computer-aided designs (CAD)		Student Booklet Design Ideas	

Outcomes	Content	Teaching, learning and assessment	Resources	Register
	Producing and Implementing			
	demonstrate safe, independent and collaborative work practices in the production of designed solutions ** From Textiles Technology Years 7-10 Syllabus (2019)* select and safely use textile equipment to construct a quality textile item, for example: – threading and operating the sewing machine safely – safe use of cutting equipment, eg dressmaker scissors, rotary cutters			
	apply appropriate tools, equipment, materials, techniques and processes in the production of a design project: – contemporary, traditional and/or advancing manufacturing techniques – surface preparation techniques, finishes, embellishments and/or decorations ** From Textiles Technology Years 7-10 Syllabus (2019)* select and apply techniques to ensure quality textile items, for example: – joining fabrics and edge finishes – closures – colouration and decoration			

Outcomes	Content	Teaching, learning and assessment	Resources	Register
	consider innovative applications of advancing technologies to increase efficiency of time and/or materials in the production of models or products ** From Textiles Technology Years 7-10 Syllabus (2019)* explore the impact of technology on design and production of textiles, for example: – computerised sewing machines to efficiently create buttonholes – computer-aided manufacturing (CAM), eg laser cutting, 3D printing			
	Testing and Evaluating			
	evaluate the effectiveness and suitability of choices made during the development and production of the solution **assess the solution against the predetermined criteria**			

Register and Evaluation

Questions	Strongly Agree	Agree	Disagree	Strongly Disagree
Were the outcomes of the unit met?				
Did you have the necessary skills to teach this unit?				
Did you have the necessary knowledge to teach this unit?				
Were the learning activities relevant and varied?				
Were the resources adequate and accessible?				
Were the assessment strategies appropriate to the outcomes?				
Did the assessment type and level of difficulty cater for the learning needs of the class/ group?				
Was the length of time for this unit satisfactory?				
I will provide a detailed summary here of the modifications and/or adjustments to the teaching and learning program for students (within my class/course) with ILPs.				
How could differentiation be better embedded into this program to ensure better access for all students.				
Please evaluate this unit by considering what worked and what could be improved. Also consider any additional resources used.				

Academic Head	Class	Date Commenced	Date Completed	Teacher name	Teacher signature
Scott McLeod / Darren Johnston					

Practical Marking Criteria

Skills:		Very Highly Developed	Highly Developed	Adequate	Limited	Very Limited	Total:
Component:		A 9-10	B 7-8	C 5-6	D 3-4	E 0-2	/60
1	Safety and Maintenance of Equipment	Completes all Onguard safety tests. Consistently demonstrates safe work practices, including regular maintenance of equipment.	Completes all Onguard safety tests. Usually demonstrates safe work practices, including maintenance of equipment.	Completes most Onguard safety tests. Usually demonstrates safe work practices and satisfactory maintenance of equipment.	Completes some Onguard safety tests. Occasionally demonstrates unsafe work practices and does not maintain equipment.	Completes some Onguard safety tests. Usually demonstrates unsafe work practices and does not maintain equipment.	/10
2	Consistency of Seams						/10
3	Consistency of Hems						/10
4	Functionality (how the product works)						/10
5							/10
6	Time Management	Project is completed by the due date or earlier (10 marks) Project is 90% completed by the due date, but could be completed with one additional lesson (9 marks)	Project is 80% completed by the due date, but could be completed with two additional lessons (8 marks) Project is 70% completed by the due date, but could be completed with three additional lessons (7 marks)	Completed approximately half of the project by the due date.	Attempts a limited amount of the project by the due date / Completed less than half of the project by the due date.	Attempts a very limited amount of the project by the due date.	/10

Portfolio Marking Criteria

	Knowledge:	Extensive/Excellent	Thorough/Good	Sound/Satisfactory	Basic	Elementary/Limited	Total:
	Component:	**A 5**	**B 4**	**C 3**	**D 2**	**E 1**	**/40**
1	Design Brief & Design Limitations	Provides an extensively detailed exploration of the design brief and a wide range of detailed limitations	Provides a thorough exploration of the design brief and a range of limitations	Provides a sound exploration of the design brief and a limited range of limitations	States a need with limited exploration of the design brief and a few limitations	Need stated without clarity or relation to the design brief Limited to no design limitations	/5
2	Materials Research						/5
3	Designer Research?						/5
4							/5
5	Design sketches & Material Justification	Demonstrates very high level skills in designing, sketching and idea generation	Demonstrates substantial skills in designing, sketching and idea generation	Demonstrates moderate skills in designing, sketching and idea generation	Demonstrates basic skills in designing, sketching and idea generation	Demonstrates elementary skills designing, sketching and idea generation	/5
6	Table of Tools						/5
7	Evidence of Production	Extensively documents the whole project with use of multiple photos of production with highly detailed descriptions.	Thoroughly documents most of the project with use of multiple photos of production with detailed descriptions	Satisfactory documentation. Includes a range of photos to document most of the project with brief descriptions.	Basic documentation. Includes a few photos with brief descriptions.	Limited to no documentation. May include a few photos or brief descriptions.	/5
8	Evaluation	Extensively evaluates the project against the predetermined criteria, discussing positive and negative features and describing improvements for future textiles projects.	Thoroughly evaluates the project against the predetermined criteria, discussing positive and negative features and describing improvements for future textiles projects.	Satisfactory evaluation. Outlines most positive and negative features and improvements for future textiles projects.	Basic evaluation. Outlines some positive or negative features or improvements for future textiles projects.	Limited to no evaluation. May list a few positive or negative features or improvements for future textiles projects.	/5