Manual Arts (Industrial Technology & Design)

Rationale

Industrial Technology

Industrial technology and design involves the design and manufacture of products, systems and graphical representations. Industrial technology refers to the procedures and techniques used to combine and process materials, organize and control systems into useful products. Industrial design focuses on the planning, creation and development of ideas and the communication of concepts and specifications for products.

Graphical Communication

The ability to communicate effectively is an essential requirement in every field of endeavour and often speech and writing cannot adequately fulfil our communication needs. Graphical communication, the universal language, is seen as an efficient and effective means of supplementing or replacing the spoken or written words. Many students, regardless of their educational or vocational aspirations, will benefit from an insight into the principles of graphical communication.

Year 8 students undertake a course which envelops all three areas of study listed below.

In the year 9 and 10 at Tully State High, Industrial Technology and Design is broken into three main subject areas listed below.

1. Industrial Technology & Design (Wood bias)
2. Industrial Technology Manufacture (Metal bias)
3. Graphical Communication (CAD and Drawing board)

The senior school boasts an exciting range of subjects that further develop the junior subjects learning and provide positive career path opportunities.

1. Cert 1 Furnishing (year 11)
2. Industrial Technology Studies (year 12)
3. Engineering Studies (year 11 & 12)
4. Technology Studies (year 11 & 12)
5. Senior Graphics (year 11 & 12)
6. Industrial Graphics (year 11 & 12)

Year 8 Manual Arts (one semester only) Course Outline

Year 8			
TERM 1	TERM 2	TERM 3	TERM 4
The Money Box Design	The Cross Boomerang The Hold it Design	The Money Box Design	The Cross Boomerang The Hold it Design

INDUSTRIAL TECHNOLOGY AND DESIGN

(Year 9 & 10 wood bias) Course Outline

Year 9			
TERM 1	TERM 2	TERM 3	TERM 4
Carry All & design a tray. Lathe wood turning - ongoing	Beach Chair	Design a storage box	Design a Toy
Year 10			
TERM 1	TERM 2	TERM 3	TERM 4
Design a Trinket Box	CO2 Dragster	Coffee Table Design Investigative analysis	Coffee Table Design

Industrial Technology and Manufacture (ITM)

(YEAR 9 &10 ITM Metal bias) Course Outline

Year 9			
TERM 1	TERM 2	TERM 3	TERM 4
Design CNC Jewelry Metal lathe - ongoing Structures and linkages	Structures and linkages	Hydraulic Robotic Arm	Electronics Kit Mechanical toy
Year 10			
TERM 1	TERM 2	TERM 3	TERM 4
Wall Bracket Design a mobile phone holder Metal lathe -ongoing	Design a mobile phone holder BBQ slice	"Catch It" design folio Investigative analysis	Tool box

YEAR 9 and 10 GRAPHICS Course Outline

Year 9			
TERM 1	TERM 2	TERM 3	TERM 4
Graphics 2D viewing systems Introduction to CAD	Inventor - Toy Folio	Graphics 2D / 3D viewing systems and Folio	Business Graphics Folio

CERTIFICATE I IN FURNISHING - VET SUBJECT Course Code LMF10108 and **YEAR 12 Industrial Technology Studies**

Rationale

This Furnishing course enables students to receive a full **Certificate I in Furnishing** after completing a number of competencies by the end of Year 11 (Semesters 1 and 2). Following Certificate I in Furnishings, Semester 3 and 4 will continue to extend the students' skill development in furniture making. This course of vocational learning will develop the student's knowledge and understanding of industry practices, processes and practical skills. The course is practical in nature, participation and delivery.

Course Outline

Year 11			
TERM 1	TERM 2	TERM 3	TERM 4
2 Door Collector Cabinet	2 Door Collector Cabinet	Student Design	Student Design
Year 12			
TERM 1	TERM 2	TERM 3	TERM 4
Shaker Hall Stand	Shaker Hall Stand	Student's own design	Student's own design

ENGINEERING STUDIES

Rationale

This course of Vocational Learning will develop student's knowledge and understanding of industry practices, processes and practical skills. The course is practical in nature participation and delivery. The course of study aims to -

- Equip students with broad based practical skill that can be further developed, directed or transferred to other technical situations including traineeships or school bases apprenticeships with in the engineering or manufacturing industries.
- Develop attitudes appropriate to student's future participation in society and their understanding of career pathways for the world of work.

Year 11 & Year 12 Course Outline

Year 11			
TERM 1	TERM 2	TERM 3	TERM 4
Carry all – sheet metal	Oxy, Arc, Mig. welding Machining: scribe	Metal machining Recumbent bike	
Year 12			
TERM 1	TERM 2	TERM 3	TERM 4
Clamp Bike Stand Welding and Thermal cutting		Major Design	Major Design and production

TECHNOLOGY STUDIES

Rationale

Technology Studies challenges you to understand and appreciate technological innovation and its impact on society. You will learn about the purposeful application of knowledge, resources, materials and processes to develop solutions to real-world design problems by generating innovative ideas and producing products.
In Technology Studies you will examine and create solutions to design problems. Design problems are based on identifying a need or responding to an opportunity.

Course information and outline

This work program has been designed as a composite Year 11 and 12 work program for Tully State High School. Consequently, the work program has been presented as a two-year course, designated Year A and Year B, rather than as Year 11 and Year 12. The current year 12 class is undertaking the existing work program (non-composite) while the year 11 class is undertaking year A (composite)

Year 11 and 12 Composite Year A 2014/2015			
TERM 1	TERM 2	TERM 3	TERM 4
Report based on a design problem	Design folio relating to a community issue	Design Folio for an individual	Design folio relating to Innovative solutions to a design problem
Year 12 Non composite 2014 only			
TERM 1	TERM 2	TERM 3	TERM 4
In-depth Analysis Assignment	Major folio (own Choice)	Major folio (own Choice)	Minor Folio (own Choice)

SENIOR GRAPHICS

Rationale

Senior Graphics is about solving design problems graphically and presenting graphical products. You will use a design process to identify and explore the design needs or opportunities of target audiences; research, generate and develop ideas; and produce and evaluate graphical solutions. You will solve graphical problems in at least two of three design areas: industrial design, graphic design and built environment (architecture, landscape architecture and interior design).

Graphics contributes to your understanding and proficient use of technologies. It develops communication, analytical and problem-solving skills.

Course Information and Outline

This work program has been designed as a composite Year 11 and 12 work program for Tully State High School. Consequently, the work program has been presented as a two-year course, designated Year A and Year B, rather than as Year 11 and Year 12. The current year 12 class is undertaking the existing work program (non-composite) while the year 11 class is undertaking year A (composite)

Year 11 and 12 Composite Year A 2014/2015			
TERM 1	TERM 2	TERM 3	TERM 4
Built Environment – Design a school residence.	**Industrial design –** Design a camping table for camping store.	**Industrial design –** Design a camping table for camping store.	**Graphic design** – Design an identity for a business.
Year 12 Non composite 2014 only			
Built Environment – Design a school residence to meet set specifications.	**Built Environment – continues** **Production Graphics** Students select a product with 7 or fewer parts and develop a range of planning and production drawings. Students also will make one design improvement.	**Production Graphics** Students select a product with 7 or fewer parts and develop a range of planning and production drawings. Students also will make one design improvement.	**Business Graphics – extended response** Design a Team marketing strategy

Industrial Graphics (manufacturing)

Rationale

The ability to communicate effectively is an essential requirement in every field of endeavour and often speech and writing cannot adequately fulfil our communication needs. Graphical communication, the universal language, is seen as an efficient and effective means of supplementing or replacing the spoken or written words. Many students, regardless of their educational or vocational aspirations, will benefit from an insight into the principles of graphical communication.

Course Outline Year 11 and Year 12

Year 11			
TERM 1	TERM 2	TERM 3	TERM 4
Drawing skill development	AutoCAD Inventor folio	AutoCAD Symbols	Built Environment Report & Folio
Year 12			
TERM 1	TERM 2	TERM 3	TERM 4
AutoCAD skill development	Engineering Drawing	Revit – entertaining area folio and report	Product development- Cad/ Cam