



Advanced Manufacturing

What is Manufacturing?

Manufacturing is the production of goods that are used or sold. They are made using labour and machines, tools, chemical and biological processing, or formulation.

What is Advanced Manufacturing?

Advanced Manufacturing is the use of innovative technologies and methodologies for improved competitiveness in the manufacturing sectors. The aim of Advanced Manufacturing is to -

Enhance output and increase:

- value
- quality
- responsiveness to market
- flexibility.

Reduce:

- time to market
- unit quantities
- material content
- material inventory
- under utilised capital plant.

(FAQ: What Is Advanced Manufacturing?, TWI, 2019)

What is a Package of Learning in Advanced Manufacturing?

A Package of Learning allows you to complete your core subjects while learning about Advanced Manufacturing. Learning will not be separated into classes of English, Maths, Science, History or Geography, Technologies and Work Studies.

Instead it will be integrated into topics and big questions such as:

- How is 3D printing changing manufacturing?
- How can I combine electronics, robotics and materials to solve problems?
- Would you like to innovate new ways to manufacture existing products?
- Can you see a market for the next 'must have' gadget?

How much of my timetable will be focusing on the Advanced Manufacturing Package of Learning?

Your timetable will look a little different but you will still be studying all of your Australian Curriculum subjects and will be assessed on these. The Package will take up about 60% of your learning per week. The rest of your week will focus on your optional subjects,

Health and Physical Education, and other programs offered by your school.

Why would I choose to learn through a Package of Learning?

- If you enjoy a hands-on approach to learning where you will learn about real world applications of the subjects you are studying, this package of learning maybe for you.
- If you would like to learn more about, the opportunities that exist, and how the world of Advanced Manufacturing works, this might be for you.
- Research suggests when you apply learning, you gain a deeper understanding.

What are the opportunities you may have during your study?

You will have an opportunity to:

- solve some real-world problems
- take part in competitions or events
- undertake learning at a workplace; and
- study some nationally recognised training, as part of this Package of Learning.

You may have an opportunity for an Australian School-based Apprenticeship (ASbA) for years 10 - 12 as part of your Package of Learning (see the back page for possible ASbA Qualification Advancement).

Can I study this Package of Learning for one year, or do I need to select it for both years 9 and 10?

You can study a Package of Learning in year 9 and then go back to your previous timetable for year 10, or you may wish to study it for both years 9 and 10, or just year 10. The material taught in a Package of Learning and in Australian Curriculum classes is similar, to allow you to move between the two.

You may also be able to take part in the subject Learning Through Internship.



What will this lead to in years 11 and 12?

To support you to choose your pathway in Advanced Manufacturing, the possible courses are listed for you below.

Year 11/12 courses

Design and Production 2
Electronics – Foundation 2
Computer Graphics and Design Foundation 2
Electronics 3 *
Engineering Design 2
Automotive and Mechanical Technologies 2
Basic Aeronautical Knowledge 2
Physical Sciences Foundation 2
Object design (University Career Pathway) *
Computer Science 3 *
Learning Through Internship 2
Computer Graphics and Design 3 *
Physical Sciences 3 *
Chemistry 4 *
Physics 4 *
Transdisciplinary Science 2
Transdisciplinary Science 3

* May have recommended prior Australian Curriculum achievements, check the “online Student Guide for Years 11 and 12”.

N.B Certificate courses may be offered by schools and colleges in years 11 and 12, or by TasTAFE and/or private registered training organisations.

Year 11/12 VET courses

Certificate II in Automotive Vocational Preparation
Certificate II in Electrotechnology (Career Start)
Certificate II in Construction
Certificate II in Construction Pathways
Certificate II in Engineering Pathways
Certificate III in Music Industry

COMPLEMENTARY SUBJECTS TO SUPPORT YOUR PATHWAY IN YEARS 11/12

Possible choices

- English Foundation 2
- English Applied 2
- English 3
- General Mathematics 3
- Maths Methods Foundation 3
- Student Directed Inquiry 3
- Enterprise at Work 2
- Life Science 2
- Project Implementation 2
- Object Design (UCP)
- Design Production 2
- Engineering Design 2
- Business Studies 3
- Business Studies Foundation 2

Please note, subject to change, not all subjects and courses are available in all regions, or at all year 11 and 12 schools and colleges. Check with specific school/college for more details.

SAMPLE QUALIFICATIONS

AGRICULTURE, FOOD AND NATURAL RESOURCES

CERTIFICATE II	CERTIFICATE III	CERTIFICATE IV	DIPLOMA/ ASSOCIATE DEGREE	BEYOND
Certificate II in Agriculture	Certificate III in Agriculture	Certificate IV in Agriculture Certificate IV in Wool Classing	Diploma of Agribusiness Management Diploma of Agriculture Associate Degree in Agribusiness	Bachelor of Agricultural Science Bachelor of Applied Science (Agriculture Business)
Certificate II in Forest Growing and Management	Certificate III in Forest Growing and Management	Certificate IV in Forest Operations	Associate Degree in Agribusiness (Specialisation)	Graduate Diploma of Building Surveying
Certificate II in Aquaculture Certificate II in Fishing Operations	Certificate III in Aquaculture Certificate III in Seafood Processing	Certificate IV in Aquaculture Certificate IV in Seafood Processing	Diploma of Aquaculture Associate Degree in Aquaculture	Bachelor of Marine and Antarctic Science Bachelor of Applied Science (Marine Environment)

ARCHITECTURE AND CONSTRUCTION

CERTIFICATE II	CERTIFICATE III	CERTIFICATE IV	DIPLOMA/ ASSOCIATE DEGREE	BEYOND
Certificate II in Construction	Certificate III in Construction Certificate III in Construction Waterproofing Certificate III in Carpentry Certificate III in Carpentry and Joinery Certificate III in Concreting Certificate III in Bricklaying/Blocklaying Certificate III in Cabinet Making Certificate III in Wall and Ceiling Lining	Certificate IV in Building and Construction (Building) Certificate IV in Building and Construction (Site Management) Certificate IV in Building and Construction (Specialist Trades) Certificate IV in Building and Construction (Estimating)	Diploma of Building and Construction Advanced Diploma of Building Surveying Advanced Diploma of Building and Construction (Management) Associate Degree in Engineering Diploma of Building Design	Bachelor of Surveying and Spatial Sciences Bachelor of Engineering

TOURISM AND HOSPITALITY

CERTIFICATE II	CERTIFICATE III	CERTIFICATE IV	DIPLOMA/ ASSOCIATE DEGREE	BEYOND
Certificate II in Hospitality Certificate II in Kitchen Operations	Certificate III in Hospitality Certificate III in Commercial Cookery	Certificate IV in Hospitality	Diploma of Hospitality Management Associate Degree of Applied Business	Bachelor of Business Administration (Hospitality Management) Bachelor of Business
Certificate II in Tourism	Certificate III in Tourism Certificate III in Events Certificate III in Travel Certificate III in Guiding	Certificate IV in Tourism and Travel Certificate IV in Guiding Certificate IV in Outdoor Recreation	Diploma of Events Management Diploma of Tourism and Travel Advanced Diploma of Travel and Tourism Management Associate Degree of Applied Business (Tourism and Events)	Bachelor of Business Administration (Tourism Management) Bachelor of Business