

MEM40119

# CERTIFICATE IV

IN ENGINEERING  
PATTERNMAKING

RTO ID : 45356 | CRICOS CODE : 03685G | CRICOS COURSE CODE : 0100617





## Qualification:

This qualification defines the skills and knowledge required for a higher engineering tradesperson within the metal, engineering, manufacturing, and associated industries.

The skills associated with this qualification are intended to apply to a wide range of engineering work undertaken in the field of patternmaking. This includes tasks such as creating precise patterns for casting and moulding, working with computer-aided design (CAD) software, understanding material properties, and utilizing various tools and equipment to produce accurate and functional patterns.

It provides the skills and knowledge for a person to understand and implement quality control techniques specific to patternmaking, exercise good interpersonal and communication skills, work from complex instructions and procedures, and exercise discretion within the scope of responsibility. Patternmakers are trained to perform work under limited supervision, either individually or in a team environment, and are responsible for assuring the quality of their own work. They provide trade guidance and assistance as part of a work team, perform non-trade tasks which are incidental or peripheral to the primary tasks, and facilitate the completion of the whole task. Additionally, patternmakers inspect products and/or materials for conformity with established operational standards, operate lifting equipment incidental to their work, and assist in the provision of training in conjunction with supervisors and trainers.

## Pathways:

Further training pathways from this qualification include transition into technical work through completion of the MEM50119 Diploma of Engineering – Advanced Trade or MEM50112 Diploma of Engineering – Technical or other relevant qualifications.

## Delivery Arrangements

This program is to be delivered through facilitated online training sessions occurring fortnightly (2 hours) and practical skills training will occur through a minimum of 3-4 face to face visits at the student's workplace.

For practical components/ skills, the Trainer will coordinate with the employer to ensure access to suitable environments for practical training to occur.

Learners will also be supplied with Learner Guides for each unit delivered and will work through the learning activities during self-study time. Learning activities will give learners the opportunity to practice and prepare for assessments.

Learners will have the opportunity to apply and test their new knowledge and skills through their employment and on-the-job training within their business.

## Who Can Undertake This Training :

To undertake this program, students must be undertaking an apprenticeship.

## How the course is assessed?

The assessments include theory and practical tasks and will be clearly documented in the assessment documents. Assessments will include tasks such as written questions, practical demonstrations and workplace evidence reports.

## Course Structure:

Students need to complete a minimum of 133 points consisting of all core units of competency totalling 33 and elective units of competency to a minimum value of 100 points.

### CORE UNITS

Unit Code	Unit Name
MEM09002	Interpret technical drawing
MEM11011	Undertake manual handling
MEM12023	Perform engineering measurements
MEM12024	Perform computations
MEM13015	Work safely and effectively in manufacturing and engineering
MEM14006	Plan work activities
MEM16006	Organise and communicate information
MEM16008	Interact with computing technology
MEM17003	Assist in the provision of on-the-job training
MEM18001	Use hand tools
MEM18002	Use power tools/hand held operations
MSMENV272	Participate in environmentally sustainable work

## Eligibility Of Student For Government Funding:

An Australian or New Zealand citizen or Australian permanent resident (including humanitarian entrants), or a temporary resident with the necessary visa and work permits.

Students must be employed in a role that enables them access to appropriate workplace tasks.

AIE will confirm the suitability of the learner's employment prior to commencement.



## ELECTIVE UNITS

Unit Code	Unit Name
MEM09009	Create 2-D drawings using computer-aided design system
MEM09010	Create 3-D models using computer-aided design system
MEM12003	Perform precision mechanical measurement
MEM16011	Communicate with individuals and small groups
MEM04018	Perform general woodworking machine operations
MEM12006	Mark off/out (general engineering)
MEM12026	Perform advanced trade calculations in a manufacturing, engineering or related environment
MEM18011	Shut down and isolate machines/equipment
MEM04026	Develop and manufacture spur gear patterns
MEM04027	Develop and manufacture bevel gear patterns
MEM04028	Develop and manufacture chain gear and sprocket patterns
MEM04029	Develop and manufacture conveyor screw patterns
MEM04030	Develop and manufacture propeller patterns
MEM04031	Develop and manufacture flat back wood patterns
MEM04032	Develop and manufacture irregular joint wood patterns
MEM04033	Develop and manufacture turned wood patterns
MEM04034	Develop and manufacture wooden wheel patterns
MEM04035	Develop and manufacture pipe patterns
MEM04037	Develop and manufacture split patterns
MEM04038	Produce polymer patterns
MEM04039	Assemble plated patterns
MEM04040	Develop and manufacture polystyrene patterns
MEM07001	Perform operational maintenance of machines/equipment
MEM07032	Use workshop machines for basic operations
MEM11009	Handle/move bulk fluids/gases
MEM11010	Operate mobile load shifting equipment
MEM11016	Order materials
MEM12001	Use comparison and basic measuring devices
MEM13003	Work safely with industrial chemicals and materials
MEM13004	Work safely with molten metals/glass
MEM16005	Operate as a team member to conduct manufacturing, engineering or related activities

\*The selected units have listed pre-requisite units that are listed within the Training Package and the AIE Engineering Qualifications Overview. All elective units are included and accounted for within the unit selection and order of delivery



### Course Duration :

This course has been designed to be delivered over **2-4** years in apprenticeship contract. This course also looks at the competence of the apprentice during the training.

### COURSE FEES:

#Fees have been calculated on 1330 hours

Cost for eligible students:

Tuition Fee **\$5280.00** Materials Fee **\$726.00**

Total Payable Fees **\$6,006.00**

Cost for Ineligible Students:

Tuition Fee **\$17,160.00** Materials Fee **\$726.00**

Total Payable Fees **\$17,886.00**

### Pre-Requisites (Entry Requirements) :

All students must undertake a LL&N assessment as part of the enrollment process. Credit may be granted towards this qualification by those who have completed relevant qualifications.

### Recognition of Prior Learning (RPL):

RPL Assessment is a pathway available to candidates who possess substantial industry experience. This method recognizes the expertise and skills developed through extensive engagement in the industry.

### How do I Enrol?

To apply and enrol in this course with Australian Institute of Engineering please contact Brett Ambrosio for further information:

Email : [bambrosio@auie.edu.au](mailto:bambrosio@auie.edu.au)

### Encouragement for people with disabilities to access government funded subsidised training:

AIE encourages all students to look at apprenticeship as a career option. Further information can be obtained by talking to our friendly staff.

**"This training is delivered with South Australia government funding".**

**"This training is subsidised by the NSW Government".**





## AWARDS AND RECOGNITION



Finalist, Hume City Council Business Award in Continuous Improvement Category, 2023.



Finalist, Victorian Training Awards in Small Training Provider Category, 2023.



Finalist, Hume City Council Business Award in Learning and Development Category, 2022.



Winner, Hume City Council Business Award in Learning and Development Category, 2021 & 2023.

Winner, Global Corp Media UK in Best Fabrication & Mechanical Engineering RTO Category, 2021.

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