MACHINE SHOP - MOULD MAKER APPRENTICESHIP

Program: MMAP
Credential: Ontario College Certificate
Delivery: Full-time
Work Integrated Learning: Apprentice Placement
Length: 720 hours
Effective: Fall 2027
Location: Barrie

Description

This 720-hour program consisting of three levels is designed to provide the apprentice with theoretical knowledge of all aspects of the Mould Maker trade as well as practical training necessary to complement on-the-job training experience for entry level positions in specific machining, tool & mould environments.

Career Opportunities

Mould Makers make, repair and modify custom-made, prototype or special molds, fixtures and gauges using various metals, alloys and plastics which require precise dimensions. They are employed primarily in manufacturing industries such as automobile, aircraft, metal fabrication, electrical machinery and plastics, and in tool and die, mould making and machine shops. This unit group also includes metal patternmakers and metal mould makers.

Graduates of this program may be employed in small machining shops or in Tool & Mould manufacturing industries where they read and interpret complex engineering drawings and work-process documentation; cut, shape, and finish metal to make precision machining parts and components; and set up and operate conventional and numerically controlled metal-cutting machines and equipment.

Program Learning Outcomes

The graduate has reliably demonstrated the ability to:

1. solve trade-specific problems using a variety of mathematical related calculations and functions/formulas;
2. interpret and produce basic graphics and other standard technical documents necessary for the routine installation, maintenance, repair, and manufacture of components;
3. complete all work in compliance with health and safety legislation and prescribed organizational practices and procedures to ensure safety of self and others;
4. perform basic technical measurements using appropriate tools;
5. use shop tools and equipment for basic installation, manufacture, and repair of components to required specifications;
6. work responsibly and effectively within a shop environment in accordance with appropriate practices and procedures;
7. develop and implement a plan for CNC programming;
8. perform procedures for linear and circular machining in manufacturing;
9. perform various machining procedures, such as milling, turning and cutting according to specifications;
10. design and fabricate a working compression mould according to required specifications;
11. design and fabricate a working injection mould according to required specifications.

External Recognition

Upon completing an apprenticeship, the Ministry of Labour, Training and Skills Development will issue an individual a Certificate of Apprenticeship. Upon meeting the College's registration requirements, the individual may apply to become certified and registered as a journeyperson in the trade.

Admission Requirements

- Ontario Secondary School Diploma (OSSD) or equivalent, mature student status
- Prospective students must be registered apprentices with the Ministry of Labour, Training, and Skills Development

Additional Information

Upon successful completion of their Level 3 in school training, these apprentices must complete the remainder of the required skills outlined in the Training Standard Log Book to qualify for their Apprenticeship Certificate. Thereafter, they are eligible to write their Certificate of Qualifications exam for Mould Maker. Graduates may be able to receive credit toward further education in related post secondary diploma, advanced diploma, or degree programs.

Graduation Requirements

Students must successfully complete all three levels to receive a certificate.

- Mould Maker Level 1 - Basic (MMAB)
- Mould Maker Level 2 - Intermediate (MMAI)
- Mould Maker Level 3 - Advanced (MMAA)

Graduation Eligibility

Students must successfully complete all required courses as noted below. Further details, if applicable, are noted under "Additional Information" above.

Program Tracking

Level 1 - Basic (MMAB)

Program Courses		Hours
GMTD 1003	Applied Trade Safety Practices	6
GMTD 1007	Metal Cutting Saw Technology	6
GMTD 1012	Applied Trade Calculations, Charts, and Tables	42
GMTD 1013	Engineering Drawings/CAD Data/Layout Processes	42
GMTD 1014	Metallurgy	12
GMTD 1015	Metrology (Measuring and Checking)	24
GMTD 1016	Benchworking Techniques	12
GMTD 1017	Drilling Technology	12
GMTD 1018	Turning Technology	36
GMTD 1019	Vertical Milling Technology	36
GMTD 1020	Surface Grinding Technology	12
	Hours	**240**
	Total Hours	**240**

Level 2 - Intermediate (MMAI)

Program Courses		Hours
MMAI 1000	Applied Trade Calculations, Charts, Tables	24
MMAI 1001	Engineering Drawings/CAD Data	30
MMAI 1002	Metallurgy of Mould Components	12
MMAI 1003	Metrology (Measuring/Checking)	6
MMAI 1004	Turning Technology/Mould Comp	6
MMAI 1005	Milling Technology/Mould Comp	18
MMAI 1006	Grinding Technology/Mould Comp	18
MMAI 1007	Electrical Discharge Machining Technology	12
MMAI 1008	NC/CNC Technology for Machining Centres	24
MMAI 1009	Thermo-set Moulding Processes	24
MMAI 1010	Thermo-set Mould-Building Processes and Techniques	60
MMAI 1011	Mould Hand-Finishing and Polishing Techniques	6
	Hours	**240**
	Total Hours	**240**

Level 3 - Advanced (MMAA)

Program Courses		Hours
MMAA 1004	Applied Trade Calculations, Charts, Tables	18
MMAA 1005	Complex Eng Drawings/CAD Data	18
MMAA 1006	Metallurgy Of Mould Components	6
MMAA 1007	Metrology (Measuring/Checking)	6
MMAA 1012	CNC Tech-Machining Centres	24
MMAA 1016	Ram/Sink Electrical Discharge Machine (EDM) Technology	30
MMAA 1017	Thermoplastic Injection Moulding and Die-Casting Mould Processes	24
MMAA 1018	Building Processes and Techniques for Thermoplastic Injection Moulds and Die-Casting Moulds	84
MMAA 1019	Final-Finish/Polishing/Engrav	30
	Hours	**240**
	Total Hours	**240**

Disclaimer: *The information in this document is correct at the time of publication. Academic content of programs and courses is revised on an ongoing basis to ensure relevance to changing educational objectives and employment market needs.*

Program outlines may be subject to change in response to emerging situations, in order to facilitate student achievement of the learning outcomes required for graduation. Components such as courses, progression, coop work terms, placements, internships and other requirements may be delivered differently than published.