MACHINE TOOL TECHNOLOGY - INTERMEDIATE TECHNICAL CERTIFICATE (ITC)

Explore More About This Program: https://cwi.edu/program/machine-tool-technology

Certificate Quick Facts

- **Instructional School:** Industry, Engineering, and Trades
- **Department:** Manufacturing and Welding
- **Program Code:** MACH.ITC
- **Program Type:** Career and Technical Education
- **Available Fully Online:** No
- **Eligible for Federal Financial Aid:** Yes

Certificate Requirements

Course	Course Title	Min Credits
General Education Requirements		
Choose one of the following courses to complete the GEM 1 or GEM 2 requirement:		
Select one of the following:		3
GEM 1 - Written Communication course		
GEM 2 - Oral Communication course		
Complete the following course to fulfill the GEM 3 requirement:		
GEM 3 - Mathematical Ways of Knowing course		3
Complete the following course to fulfill the GEM 6 requirement:		
GEM 6 - Social & Behavioral Ways of Knowing course		3
Major Requirements		
MACH 103	Machine Shop Laboratory I	3
MACH 104	Machine Shop Laboratory II	3
MACH 105	Machine Shop Laboratory III	6
MACH 126	Related Blueprint Reading I	2
MACH 127	Related Blueprint Reading II	2
MACH 153	Machine Shop Theory I	2
MACH 154	Machine Shop Theory II	2
MACH 155	Machine Shop Theory III	2
MACH 224	Tool Design for Manufacturing	2
Minimum Credit Hours Required		**33**

Plan of Study Guide

The course sequence listed below is strongly recommended in order to complete your program requirements. Many Career and Technical Education (CTE) courses have prerequisites and/or corequisites that have been accounted for within this Plan of Study Guide. Please register for your major requirements each semester as shown below using the Student Planning tool in myCWI. Consult your Student Success Advisor for any questions regarding this plan.

NOTE: The required general education courses may be completed during any semester the student prefers, including summer semesters.

First Year

Fall		Credit Hours
MACH 103	Machine Shop Laboratory I	3
MACH 104	Machine Shop Laboratory II	3
MACH 126	Related Blueprint Reading I	2
MACH 153	Machine Shop Theory I	2
MACH 154	Machine Shop Theory II	2
Select one of the following:		3
GEM 1 - Written Communication course		
GEM 2 - Oral Communication course		
	Total Semester Credit Hours	**15**

Spring		
MACH 105	Machine Shop Laboratory III	6
MACH 127	Related Blueprint Reading II	2
MACH 155	Machine Shop Theory III	2
MACH 224	Tool Design for Manufacturing	2
GEM 3 - Mathematical Ways of Knowing course		3
GEM 6 - Social & Behavioral Ways of Knowing course		3
	Total Semester Credit Hours	**18**
	Minimum Credit Hours Required	**33**

Program Learning Outcomes

Upon successful completion of this program, students will be able to:

- Demonstrate knowledge and application of safe work habits in all phases of machine shop operation.
- Demonstrate knowledge and application of advanced setup, operation, and maintenance of manual milling machines.
- Demonstrate knowledge and application of advanced manual engine lathe set-up techniques and operations, as well as precision surface grinding and measuring techniques.
- Perform and utilize advanced setup techniques, tool and hardware selection, and process planning for manufacturing, as well as jig and fixture design for production machining.
- Apply advanced interpretation of machine shop specific detail and assembly drawings emphasizing machining operations and materials; apply the Machinery's Handbook in interpreting blueprint specifications and associated machining processes.
- Work professionally and productively with others through collaboration and teamwork in a shop or lab environment.