MACHINE TOOL TECHNOLOGY - BASIC TECHNICAL CERTIFICATE (BTC)

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.BTC
- **Program Type:** Career and Technical Education
- **Available Fully Online:** No
- **Eligible for Federal Financial Aid:** Yes

NOTE: Courses required for this program *may* have an additional fee; more information can be found on the Special Course Fees web page.

Certificate Requirements

Course	Course Title	Min Credits
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		**24**

Certificate Plan: Fall Start

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 each semester as shown using the Student Planning tool in myCWI. Consult your advisor for any questions regarding this course sequence plan.

First Year

Fall		Credit Hours
First 8-Week Course Session		
MACH 103	Machine Shop Laboratory I	3
MACH 153	Machine Shop Theory I	2
Second 8-Week Course Session		
MACH 104	Machine Shop Laboratory II	3
MACH 154	Machine Shop Theory II	2
Full 16-Week Course Session		
MACH 126	Related Blueprint Reading I	2
	Total Semester Credit Hours	**12**

Spring

Full 16-Week Course Session		
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
	Total Semester Credit Hours	**12**
	Minimum Credit Hours Required	**24**

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.