

BASIC MACHINING TECHNOLOGIES (CERTIFICATE OF PROFICIENCY)

(39 credits)

Program Description

Do you have a keen eye for detail? Do you like to work with your hands, use your creativity to solve challenging problems, and work with high-tech equipment? Get involved in the fast-paced and evolving industry of machining technology and learn to design, create, and refine products for leading industries around the world.

At SPSCC, our students are provided instructors with real-world experience and state-of-the-art Computer Numerical Control (CNC) equipment.

The certificate and degree program provides the knowledge and skills for students to design and create products for the manufacturing industry. Students will use MASTERCAM CAD/CAM software to operate multi-axis numerical control machines. Training will utilize manufacturing related math, industry blueprint reading, CAD geometry, CAM tool paths, precision measurement, machine setup and operation, and quality control procedures. Students can further pursue the creation of detailed industry standard blueprints from 3-D solid models, as well as work with metal processes.

Career Opportunities

Completion of the Basic Machining Technologies certificate prepares students for entry-level work as a machinist and is aligned with Boeing's knowledge, skills, and abilities for precision machining. The AAS prepares students for advanced level work in this same field and may lead to a career as a CNC Operator, CAD/CAM Computer Programmer, or CNC service technician.

Other Options:

- Industrial Machinery Mechanic
- Machine Setter
- Machine Operator

Additional Costs

Include textbooks plus approximately \$900.00 upon entry into the program for personal protective equipment, tools, and supplies. Please contact faculty to get a list of the items and the costs.

Outcomes

South Puget Sound Community College believes that all students need to develop a broad range of abilities that will not only make them more effective in their professional pursuits but will enhance their capacity to relate well to others in their daily lives.

At the completion of the Machining Technologies Program, the successful student will be able to:

- Communicate with diverse audiences and in a variety of contexts, both orally and through writing, within the machining and manufacturing environment
- Identify, analyze, and synthesize relevant data and inputs within a machining and manufacturing environment and troubleshoot identified issues
- Select and safely operate appropriate tools, equipment, and software used in machining and manufacturing industries
- Demonstrate proficiency of quality control and process management systems utilized in machining and manufacturing
- Accurately use precision measurement methods and interpret information presented in spreadsheets, graphs, charts, and blueprints
- Identify and adapt to workplace, co-worker, and supervisor cultural differences to be an effective team member
- Demonstrate ethical, environmentally sustainable, and socially responsible work habits
- Recognize how machining fits within the whole of a manufacturing project

The SPSCC college-wide abilities are embedded into each program:

- Effective Communication
- Information Literacy
- Analytical Reasoning
- Multicultural Awareness
- Social Responsibility

Courses by Quarter

Code	Title	Credits
Quarter 1		
Transition Studies		
Quarter 2		
CMT 100	Survey of Advanced Manufacturing	5
CCS 101	Pathways to Success	3
CMT 130	3D Printing - Additive Manufacturing	5
Quarter 3		
CMT 101	Introduction to Machining	5
CMT 102	Measurement, Materials and Safety	5
CMT 103	Print Reading for Machine Trades	3
Quarter 4		
CMT 105	Inspection/Quality Control	3
CMT 106	Fundamental of Machining	5
CMT 107	Job Planning, Benchwork, and Layout	5

- CMT 130 is offered in summer and winter quarters (depending on enrollment).
- CMT 100 is offered in fall only.
- CMT 101/102/103 are offered in winter only.
- CMT 105/106/107 are offered in spring only.

Pathway Maps

South Puget Sound Community College has provided pathways and associated recommended courses for ease of student selection based upon a student's career interest. Please review the pathway maps for required and recommended courses.

Basic Machining Technologies Pathway Map

Certificate of Proficiency
39 Credits

Qtr. 1	Qtr. 2	Qtr. 3	Qtr. 4
Transition Studies	CMT 100 (5cr) <i>Survey of Advanced Machining****</i>	CMT 101 (5cr) <i>Introduction to Machining****</i>	CMT 105 (3cr) <i>Inspection/Quality Control****</i>
	CCS 101 (3cr) <i>Pathways to Success</i>	CMT 102 (5cr) <i>Measurement, Materials and Safety****</i>	CMT 106 (5cr) <i>Fundamentals of Machining****</i>
	CMT 130 (5cr) <i>3D Printing- Additive Manufacturing****</i>	CMT 103 (3cr) <i>Print Reading for Machine Trades****</i>	CMT 107 (5cr) <i>Job Planning, Benchwork, and Layout****</i>

*****NOTES:**

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