

Course Objectives/Course Outline
Spokane Community College

Course Title: Shop II
Prefix and Course Number: MACH 152

Course Learning Outcomes:

By the end of this course, a student should be able to:

- Setup and operate vertical milling machines
- Setup and operate vertical bandsaws
- Setup and operate engine lathes to produce threads
- Setup and operate radial arm drill press

Course Outline:

- I. Preparation for Machining Operations
 - A. Machinability and Chip Formation
 - B. Speeds and Feeds for Machine Tools
 - C. Cutting Fluids
 - D. Using Carbides and Other Tool Materials
- II. Sawing Machines
 - A. Using Reciprocating and Horizontal Band Cutoff Machines
 - B. Abrasive and Cold Saws
 - C. Preparing to Use the Vertical Band Machine
 - D. Using the Vertical Band Machine
- III. Drilling Machines
 - A. The Drill Press
 - B. Drilling Tools
 - C. Hand Grinding of Drills on the Pedestal Grinder
 - D. Operating Drilling Machines
 - E. Countersinking and Counterboring
 - F. Reaming in the Drill Press
- IV. Shop Safety Practices
 - A. Chip Handling
 - B. Cutting Fluids
 - C. Cutoff Machine Safety
 - D. Band Machine Safety
 - E. Drill Press Safety
- V. Practical Applications
 - A. Cutting Speed and Feed
 - B. Speed Ratios of Pulleys and Gears
 - C. Mathematical Calculations