

**Course Objectives/Course Outline**  
**Spokane Community College**

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**Course Title:** Shop I  
**Prefix and Course Number:** MACH 142

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**Course Learning Outcomes:**

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

- Apply practical application to run an Engine Lathe
- Apply practical application to run a horizontal bandsaw
- Knowledge of shop safety practices
- Apply practical application to perform basic layout procedures

**Course Outline:**

- I. Shop Safety
  - A. Personal Protection
  - B. Shop Hazards
  - C. Machine Hazards
  - D. Industrial Safety and Federal Law
- II. Turning Machines
  - A. The Engine Lathe
  - B. Toolholders and Tool Holding for the Lathe
  - C. Cutting Tools for the Lathe
  - D. Lathe Spindle Tooling
  - E. Operating the Machine Controls
  - F. Facing and Center Drilling
- III. Practical Applications
  - A. Screw Threads
  - B. Cutting Speed and Feed
  - C. Mathematical Calculations
  - D. Tapers
- IV. Work Holding and Hand Tools
  - A. Vises
  - B. Clamps
  - C. Pliers
  - D. Hammers
  - E. Wrenches
  - F. Screwdrivers
  - G. Chisels and Punches
  - H. Hacksaws
  - I. Files
  - J. Hand Reamers
- V. Off Hand Grinding
- VI. Taps
  - A. Identification and Uses
  - B. Tapping Procedures