

Course Objectives/Course Outline
Spokane Community College

Course Title: Shop IV
Prefix and Course Number: MACH 212

Course Learning Outcomes:

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

- Use CAM software to write basic programs for CNC mills
- Identify components of the CNC Mill and its control
- Successfully and accurately prepare the CNC Mill to machine basic parts
- Demonstrate ability to select part origins and work-holding devices best suited to each project

Course Outline:

I. MASTERCAM SOFTWARE

- A Program Interface
- B Geometry Creation
- C Toolpath Creation
- D Program Verification
- E Post Process Program

II. CNC MILL OPERATION

- A. Identify Machine components
- B. Machine Startup
- C. Select Tooling Correctly
- D. Set Tools
- E. Set Part Reference Zero
- F. Machine control use
- G. Machine care and maintenance
- H. Load Programs

III. FIXTURE SETUP AND USE

- A. Vise and Steel Jaws
- B. Vise and Soft Jaws
- C. 5C Collet
- D. Fixture Plate

IV. TOOLS AND HOLDERS

- A. Identify Tool Holder Types
- B. Tool Holder Assembly Using Collets
- C. Care of Tool Holders and Collets