

COMPETENCY PROFILE

INTRO TO CNC-CAD/CAM PROGRAMMING & OPERATIONS - A

BTC: MACH 244 (5 credits)

Course introduces students to 2-D CAM geometry (points, lines, circles) and simple toolpath generation including editing techniques.



Note: students complete the introductory/overview & practice portion of the course with focus on 2 D design (MACH 244) at the high school. At the college, students will complete the depth, continued practice & skill demonstration focusing on 3 D design elements (MACH 243).

Upon completion of high school courses equivalent to the following competencies:

- Demonstrate shop safety practices.
 - Create basic 2-D geometry construction using:
 1. Point
 2. Line
 3. Arc
 4. Spline
 5. Rectangle
 6. Letters
 - Modify existing Geometry
 1. Delete
 2. Modify
 3. Xform
 - Toolpath Generation: demonstrate toolpaths using the proper tooling & techniques.
 1. Toolpath modules
 2. Common parameters
 3. Contouring
 4. Pocketing
 5. Drilling
 6. Lettering
 - Demonstrate ability to correctly use 2-D toolpath editing techniques.
 1. File structure
 2. Deleting toolpaths
 3. Merging toolpath files
 4. Editing Functions
 5. Mirror, rotate and translate
 - CAM Process Planning: demonstrate ability to manufacture a piece-part through proper machining practices.
 1. Part features geometry construction
 2. Toolpath modules selection
 3. Tooling and machine data
 4. Process plan sheet
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College Textbooks:

MasterCam Book for Windows – Version 10

Lab Assignments/Assessment: Students develop a competency portfolio including drawings of all completed MasterCam exercises. Portfolio will be given to college instructor upon entrance to the program.

NOTE: the content & competencies indicated above represent ½ of the regular college course MACH 243-244 (180 hrs/10 credits). Upon enrolling at the college, students will need to complete MACH 243 for 5 credits.

This document is to certify that this student has completed the required coursework as defined by the Whatcom County Tech Prep Articulation Agreement and has demonstrated mastery for college credit. Further information about any aspect of this program may be obtained by contacting the school and instructor named on this profile.