MACH A141: MASTERCAM LATHE

Item	Value
Curriculum Committee Approval Date	12/06/2023
Top Code	095630 - Machining and Machine Tools
Units	1.5 Total Units
Hours	45 Total Hours (Lecture Hours 18; Lab Hours 27)
Total Outside of Class Hours	0
Course Credit Status	Credit: Degree Applicable (D)
Material Fee	No
Basic Skills	Not Basic Skills (N)
Repeatable	No
Grading Policy	Standard Letter (S)

Course Description

A course designed for students who have completed the basic Mastercam class, MACH A133, and wish to have concentrated instruction on CNC lathe programming on lathe only. PREREQUISITE: MACH A133. Transfer Credit: CSU.

Course Level Student Learning Outcome(s)

1. Design programs for roughing and finishing lathe parts.
2. Demonstrate proper tool selection using Mastercam for the lathe.

Course Objectives

- 1. Write programs for commonly shaped lathe parts
- 2. Write programs for roughing and finishing lathe parts.
- 3. Write programs that include internal and external threading
- 4. Write programs that include drilling, boring, reaming, and taping.
- 5. Edit NC files for lathe programs.
- 6. Demonstrate proper tool selection using Mastercam for the lathe.

Lecture Content

Review of geometry development Machine axis differences Tool library development Tooling conflicts Tooling parameters Threading Drilling cycles Boring cycles Roughing parameters Finishing parameters TNR compensation usage

Lab Content

See Course Content.

Method(s) of Instruction

- Lecture (02)
- DE Live Online Lecture (02S)
- Lab (04)
- DE Live Online Lab (04S)

Instructional Techniques

Lecture demonstration and guided activities using Mastercam

Reading Assignments

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Writing Assignments

Demonstrate writing and editing of CNC lathe programs

Out-of-class Assignments

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Demonstration of Critical Thinking

Midterm, projects, and final exam

Required Writing, Problem Solving, Skills Demonstration

Demonstrate writing and editing of CNC lathe programs

Textbooks Resources

1. Required Lin, SuChen Jonathon, and F.C. Tony Shiue. Mastercan Version 9 Mill and Solids, ed. Ann Arbor: Scholars International Publishing Corp., 2003 Rationale: -