MACH A134: CNC PROGRAMMING-MASTERCAM 2

Item	Value
Curriculum Committee Approval Date	12/02/2020
Top Code	095630 - Machining and Machine Tools
Units	3 Total Units
Hours	72 Total Hours (Lecture Hours 45; Lab Hours 27)
Total Outside of Class Hours	0
Course Credit Status	Credit: Degree Applicable (D)
Material Fee	Yes
Basic Skills	Not Basic Skills (N)
Repeatable	No
Grading Policy	Standard Letter (S)

Course Description

Advanced CNC programming using Mastercam to program CNC machines. Instruction emphases complex cutter movement and surfacing. PREREQUISITE: MACH A133. Transfer Credit: CSU.

Course Level Student Learning Outcome(s)

1. Design and process complex part geometry using Mastercam.
2. Demonstrate proficiency in the basics of post processors.

Course Objectives

- 1. Design and process relatively complex part geometry through the system.
- 2. Process cutters across various types of surfaces.
- 3. Demonstrate proficiency in the basics of post processors.
- 4. Demonstrate blending two surfaces together.
- 5. Develop skill at filleting intersections of surfaces.
- 6. Develop a working knowledge of advanced cutter path regeneration.
- 7. Demonstrate the process of grouping key part features.
- 8. Demonstrate proficiency in Mastercam file management.

Lecture Content

Introduction and overview of Mastercam and computer assisted parts programming Course requirements Review of Mastercam 2D Review of basic surface development Advanced surface development Driving cutters on surfaces Multi-surf Multi-axis Post processors New advanced features of Mastercam

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 and demonstration using the computer and software. Supervised and guided lab activities on the computer using Mastercam.

Reading Assignments

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Writing Assignments

Students will write short answers to quiz questions. Final exam will be practical.

Out-of-class Assignments

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Demonstration of Critical Thinking

Student will be evaluated on quizzes, programs, design of parts, and final exam.

Required Writing, Problem Solving, Skills Demonstration

Students will write short answers to quiz questions. Final exam will be practical.

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: -