Minnesota State College Southeast

MACH 2637: CAM Programming and Toolmaking Application I

A. COURSE DESCRIPTION

Credits: 3
Lecture Hours/Week: *.*
Lab Hours/Week: 6
OJT Hours/Week: *.*
Prerequisites: None
Corequisites: None
MnTC Goals: None

This course will familiarize the student with the manufacturing of individual parts, and Tooling components using Precision Manual Machining, CNC Lathe, CNC Mill, & EDM Set-up and Operation. The Instructor will give each student several Machining Projects. Each student will manufacture the components to specifications, and complete inspection reports on all components. (Prerequisites: MACH1601, MACH1605 or CMAE1510, MACH1610, MACH1615, MACH1625, MACH1630, MACH1642, MACH1643, MACH1650, & MACH1661 or MACH1662 or equivalent) (3 Credits: 0 lecture/3 lab)

B. COURSE EFFECTIVE DATES: 01/27/2016 - Present

C. OUTLINE OF MAJOR CONTENT AREAS

1. Selection of tooling and related speeds & feeds for machining mold steels
2. Safety procedures in Plastic Injection Molding
3. 2-D & 3-D surface machining for mold making
4. Grinding and polishing technology
5. Inspection procedures for molded parts

D. LEARNING OUTCOMES (General)

1. Practice Southeast Technical College shop safety rules
2. Wear proper attire for safety
3. Use proper mold design theory CNC machining applications to manufacture an injection mold
4. Use basic and advanced machining processes to manufacture 3-D components
5. Prepare tooling and fixtures to support 3-D surface machining
6. Practice polishing methods to produce surface finish call out
7. Use the lab time to support the capstone course project
8. Use inspection report to record size and location of features on mold components related to print tolerance
9. Manufacture a runner system
10. Manufacture gate and vent system to produce a complete shot part
11. Verify parting line shut-off and clearance areas
12. Check mold alignment
13. Practice 5-S procedures to clean work area and maintain machine lubrication
14. Complete all assignments
E. Minnesota Transfer Curriculum Goal Area(s) and Competencies
   None

F. LEARNER OUTCOMES ASSESSMENT
   As noted on course syllabus

G. SPECIAL INFORMATION
   None noted