

# 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 a mold. The instructor will give each student a design for a mold cavity and other mold components. Each student will manufacture the components to specifications, and complete inspection reports on all components. (Prerequisites: MACH1601, MACH1605, MACH1610, MACH1615, MACH1625, MACH1630, MACH1641, MACH1650 & MACH1661, MACH2633, MACH2635, MACH2637, MACH2660 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