A. COURSE DESCRIPTION

Credits: 3
Lecture Hours/Week: *.*
Lab Hours/Week: 6
OJT Hours/Week: *.*

Prerequisites:
This course requires all 14 of these prerequisite categories
1. MACH 1601 - Introduction to Precision Machining
   And
2. MACH 1610 - Precision Measuring and Gauging
   And
3. MACH 1615 - Precision Machining Processes
   And
4. MACH 1625 - Engineering Drawings 2
   And
5. MACH 1630 - Introduction to CNC Theory
   And
6. MACH 1642 - CNC Operations 1
   And
7. MACH 1643 - CNC Operations 2
   And
8. MACH 1650 - Introduction to EDM
   And
9. MACH 2633 - CNC Precision Machining Mill
   And
10. MACH 2635 - CNC Precision Machining Lathe
    And
11. MACH 2637 - CAM Programming and Toolmaking Application I
    And
12. MACH 2660 - Advanced CAD/CAM I
    And
13. One of these two
    CMAE 1510 - Print Reading
    MACH 1605 - Engineering Drawings 1
    And
14. One of these two
    MACH 1661 - Introduction to CAD/CAM
    MACH 1662 - Introduction to CAD/CAM + 3D Printing

Corequisites: None

MnTC Goals: None

This course will familiarize the student with the manufacturing methods using CNC machines to support manufacturing processes. The Instructor will give each student a design for a special projector multiple projects. Each student will manufacture the project 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

D. LEARNING OUTCOMES (General)
   1. Practice Southeast Technical College shop safety rules
   2. Wear proper attire for safety
   3. Use proper tool design theory and Master CAM software to design a project
   4. Use CNC machining applications to manufacture the project
   5. Use basic and advanced machining processes to manufacture 3-D components
   6. Prepare tooling and fixtures to support 3-D surface machining
   7. Use inspection report to record machined dimension tolerance of parts
   8. Use the lab time to support the capstone course project
   9. Practice 5-S procedures to clean work area and maintain machine lubrication
  10. 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