MET 113 Manufacturing Processes 3

Course Description: A continuation of MET 112. Topics include: CAM simulation, machining processes, prototyping techniques, and using CAD/CAM software to create programs for producing components on CNC machines.

Prerequisites(s): MET 112 **Corequisite(s):** No corequisite

Lecture Hours: 2	Lab Hours: 3	Credit Hours: 3
Lab Fee: 105	Supplemental Fee: 0	Purpose:
☐ Transfer Assurance Guide Course (TAG)	☐ Transfer Module Course (TM)	
Course Format: Lec/Lab	Grading: A/B/C/D/F/I	
Delivery Method: □ Web	□ Hybrid	x Classroom
Semesters Offered: x Fall	x Spring	x Summer

Course Primary Text:

Title: None – Manuals provided by software manufacturers	Edition:
Author(s):	
Publisher:	

Supplemental Materials:

Tutorials provided by MasterCAM
HAAS Mill and Lathe books provided in .PDF format

Course Outcomes:

1	The student will be able to apply knowledge, techniques, skills and modern tools of the discipline to narrowly defined engineering technology problems
2	The student will have the ability to apply a knowledge of mathematics, science, engineering, and Technology to engineering technology problems
3	The student will have an ability to function effectively as a team member of a technical team
4	The student will have the ability to identify, analyze, and solve narrowly defined engineering technology problems

5	The student will demonstrate a commitment to quality, timeliness, and continuous improvement

Course Topics:

Week 1	Introduction, Safety, G-code, CNC machine tools review
Week 2	CAD/CAM, Post Processing and G-Code review, CNC Mill Review
Week 3	CAD/CAM, and CNC machine tools
Week 4	Introduction to *other* work holding, Soft jaws, Fixtures
Week 5	CAD/CAM Lathe, Introduction to 3D Printing
Week 6	CAD/CAM, Begin Major Project, 3D Printing
Week 7	CAD/CAM, Rapid Prototyping, Major Project
Week 8	Major Project, Speeds and Feeds for Dynamic motion, Tool selection and Set-up
Week 9	Major Project, Program and Process Refinement
Week 10	Major Project, Cost analysis
Week 11	Project Presentations
Week 12	Mass production techniques, Automation
Week 13	Multi Axis CAD/CAM CNC
Week 14	Multi Axis CAD/CAM CNC
Week 15	Final Exam, Small Project

Methods of Evaluation/Assessment

□ Formative: □ Summative

List assessment activities (e.g. quizzes, discussions, essays, research papers, debates, oral presentations, exams):

Exams will consist of computations based on part geometries and conversion of parts to CNC codes by the use of CAD/CAM programs.
Weekly quizzes will cover topics covered in lecture and in laboratory exercises.

Course Keeper: Zane Decker Date Completed: 8/11/18