CAD 211: Computer Aided Manufacturing

This course is a hands-on computer-aided manufacturing course. Students will utilize the latest PC-based industrial CAM software to produce Computer Numerical Control machine tool programs for a CNC mill and CNC lathe. The students will learn to use the CAM software to select tools, enter part geometry, and convert screen graphics into a CNC program. Topics include creating programs for milling and turning operations (ID and OD turning, threading, grooving, and back turning), communication between program and machine, and editing models to improve software utilization. In addition, the student will learn the integration of Computer-Aided Design (CAD) with CAM to enhance the understanding of the design to manufacturing process. Pre or co-requisite: EGR 111 or EGR 112 and CAD 111 or CAD 172. Two lecture hours and three laboratory hours per week. Instructional Support Fee applies. NOTE: Utilizes Windows based software only.

Course Student Learning Outcomes

1. Utilize parametric solid modeling Computer Aided Manufacturing software (CAMWorks) to analyze model features, determine cutting parameters, select tooling, and generate computer numerical codes.
2. Demonstrate proper set-up, download of computer numerical code, and first piece prove out procedures for the in Fanuc Vertical Milling and Turning machine centers.
3. Generate manufacturing documentations consisting of tool list, operation sheets and drawings.
4. Demonstrate safe machine shop practices per OSHA and Industrial standards.

Credits: 3
Program: Computer Aided Drafting