Northwest Arkansas Community College
Business and Computer Information Systems Division

Discipline Code
DRFT

Course Number
2293

Course Title
Computer Aided Manufacturing

Catalog Description
This course explores the current technology used in Computer Aided Manufacturing (CAM). Students will first become familiar with basic cutting tool technology and progress to basic knowledge in design and manufacturing of parts used in industry. Current industry standard software will be used to generate machined part programs for a CNC mill and CNC lathe. Students will analyze Computer Aided Drawing (CAD) files and write CNC programs of increased complexity. The emphasis of the course is placed on learning to use the CAM software to select tools, manipulate part geometry, and convert CAD files and models into a CNC program.

Prerequisites
DRFT 2534 Parametric Modeling I

Credit Hours
3 Credit Hours

Contact hours
45 contact hours

Load hours
3 load hours

Semesters Offered
Fall

ACTS Equivalent
None

Grade Mode
A-F

Learning Outcomes

Students will:

- Demonstrate a basic understanding of machining fundamentals including tooling systems and work-holding systems for CNC milling and turning equipment
- Demonstrate a basic understanding of the various CAD/CAM and CNC processes and strategies
- Demonstrate an understanding of the working principles of CNC vertical machining center and CNC turning center and how they are used in part making
- Develop CNC programs for milling and turning machining operations
- Integrate the CAD system and the CAM system by using the CAD system for modeling design information and converting it into a CAM model for manufacturing

General Education Outcomes Supported

None

Standard Practices

Topics list

- Learn various gcode commands
- String together simple gcode scripts manually
- Understand basic electronics
- Set up a toolpath in a CAM software
- Set up tooling in a CNC machining center
- Optimize tooling processes for specific tooling

Learning activities

Assessments

Grading guidelines

- A = 90-100%
- B = 80-89%
- C = 70-79%
- D = 60-69%
- F = 0-59%