

**NorthWest Arkansas Community College
Business and Computer Information Division**

DRFT 2343– Design and Production Technology (F)

Catalog Description:

This course is a study of the modern techniques of design, production, and operations including material and process selection. The correct application of these concepts to engineering drawings is emphasized. The importance of concurrent engineering and computer-integrated manufacturing in design is examined. Students will tour local manufacturing plants that use these techniques.

Prerequisites:

DRFT 1234

Credit hours/Contact Hours/Load hours:

3/3/3

Target Audience/Transferability:

This course is required for students in the mechanical design option of the AAS CAD degree and is non-transferable

Student Learning Outcomes:

Students will:

- Describe the relationship of product design, product function, materials used, and manufacturing processes
- Identify the major categories of engineering materials and their applications
- Correctly apply dimensioning and tolerancing, symbols, finish requirements, and manufacturing processes to engineering drawings
- Define the concepts of concurrent engineering, manufacturing planning, production, and total quality management
- Define how graphic models drive computer integrated manufacturing

Topics:

- Introduction to manufacturing systems, processes and materials
- The challenges of manufacturing in a competitive environment
- Rapid prototyping and just-in-time manufacturing
- Concurrent engineering and computer aided process planning
- Computer-integrated manufacturing
- Quality control and assurance
- Lean manufacturing
- Engineering materials and their relationship to design and function
- Manufacturing processes including casting, metal cutting, welding and joining, finishing, and non-traditional processes

Forms of Assessment:

- Tests/quizzes on engineering materials and processes

- Written reports on plant tours
- Student project on computer-integrated manufacturing