Northwest Arkansas Community College
Business and Computer Information Systems Division

Discipline Code
DRFT

Course Number
2123

Course Title
Machine Design

Catalog Description
(S) This is a course that uses 3D parametric modeling software to design parts and assemblies. Several software packages currently used in industry will be introduced. Solid models and their associated working drawing sets will be produced. Problem solving, collaboration, and engineering design are the central features of this course.

Prerequisites
DRFT 2534-Parametric Modeling I

Credit Hours
3 credit hours

Contact hours
45 contact hours

Load hours
3 load hours

Semesters Offered
Spring

ACTS Equivalent
None

Grade Mode
A-F

Learning Outcomes
Students will:
- Define the major components of a complete set of working drawings
- Create a parametric model and the complete set of working drawing needed for production
- Render a parametric model for presentation
- Articulate the importance of accuracy and efficiency in design
- Reverse engineer a common object
- Design a solution to an engineering technical problem
- Demonstrate proficiency in their technical focus (Mechanical)

General Education Outcomes Supported
None

Standard Practices

Topics list
- Theory of gears
- Gear modeling CAD tools
- Theory of linkages
- Modeling 3D linkages
- Theory of cams
- Drawing cam diagrams
- Modeling cam and follower systems
- Material properties
- Strength simulation basics

Learning activities

Assessments
- Modeling Assignments
- Projects

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