University of Arkansas - Fort Smith
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General Syllabus

DFTG 2834 Parametric Modeling

Credit Hours: 4   **Lecture Hours:** 4   **Lab Hours:** 0

Prerequisite: DFTG 1234 Engineering Graphics or consent of instructor

Effective Catalog: 2023-2024

I.   Course Information

A.   Catalog Description
Introduces the concepts, commands and techniques of parametric modeling. Brings together tools used for part modeling, assembly modeling and surface modeling.

B.   Additional Information
Part modeling allows the user to construct "intelligent" 3D solid models with features like holes and fillets that update automatically when the dimensions are changed. With assembly modeling, multiple parts can be brought together in defined relationships. Assemblies can be analyzed to check for interference between components, displayed in exploded views, etc. Finally, the surface modeling tools can create complex contoured shapes, either as stand-alone surface models or in combination with solids to further refine the shape of parts. The parametric software used in this course will be selected to support local needs.

II. Student Learning Outcomes

A. Subject Matter
Upon successful completion of this course, the student will be able to:

1. Create and edit 3D parametric computer models.
2. Create and edit assemblies using multiple parts.
3. Create, edit, and annotate drawing with the appropriate views used in industry.
4. Create animated assemblies and exploded views.

B. University Learning Outcomes
This course enhances student abilities in the following areas:
Analytical Skills

Critical Thinking - Students will determine the views necessary to properly define an object.

Quantitative Reasoning – Students will analyze assemblies, both graphically and mathematically with software to ensure that design requirements are met in fit and interaction with all components of the assembly.

Communication Skills (written and oral)
Students will create parametric models of objects utilizing Parametric Modeling software. The finished product will include a model, industry standard drawings, animated assemblies where appropriate, and other industry standard output.

III. **Major Course Topics**

A. Sketch profiles and constraints
B. Creation of 3D parts
C. Part modeling techniques
D. Sculpting tools
E. Creating surfaces
F. Creating surfaces from other surfaces
G. Advanced part modeling
H. Assemblies and dimensioned drawings
I. Scenes and view drawing annotation