

NOVA COLLEGE-WIDE COURSE CONTENT SUMMARY

CAD 241 - PARAMETRIC SOLID MODELING I (3 CR.)

Course Description

Focuses on teaching students the design of parts by parametric solid modeling. Topics covered will include, but not limited to, sketch profiles; geometric and dimensional constraints; 3-D features; model generation by extrusion, revolution and sweep; and the creation of 2-D drawing views that include sections, details and auxiliary. Part I of II. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

General Course Purpose

The course purpose is to give students in various engineering disciplines knowledge and proficiency in using parametric solid modeling methods in creating technical drawings. The course will use parametric type of CAD software extensively. It will also provide CAD students hands-on skills and experiences in generating 3D models and 2D design drawings using Parametric Solid Modeling techniques. Skills acquired in previous CAD classes will be adapted to parametric solid modeling to prepare the student for employment in the design and manufacturing.

Course Prerequisites/Corequisites

Prerequisite: CAD 202 or equivalent

Course Objectives

Upon completion of the course the student will be able to:

- Create 3D solid models using parametric solid model techniques.
- Use constraints in generating 3D models
- Organize 3D solid models for assembly
- Create 3D assemblies using different 3D solid models
- Generate 2D design drawings from 3D models
- Annotate (dimension and label) 2D design drawings

Major Topics to Be Included

- Designing of parts using parametric solid modeling
- Sketching, geometric and dimensional constraints
- 3D Features
- 3D Model generation: extrusion, revolution and sweep
- Creation of 2D drawing views: multi-views, sections, details and auxiliary views.
- Annotations and dimensions of 2D design drawings