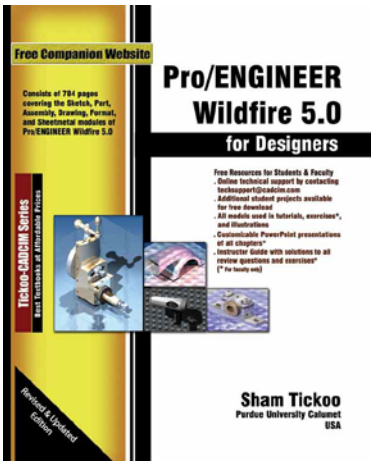
THE CENTER FOR PROFESSIONAL STUDIES



Advanced Pro Engineer

Organizations that utilize the Pro Engineer Wildfire Computer Aided Design (CAD) system to develop their products are using a cutting edge system that help analyze, validate and document products utilized throughout the complete product life cycle.

The Pro Engineer Wildfire course covers fundamentals through more advanced features of Pro Engineer. Keeping in mind the requirements of the users, the course first introduces sketching and part modeling in Pro Engineer, and then gradually progresses to cover assembly and drafting. The course is a series of tutorials and emphasizes hands on exercises and activities. The course provides an excellent introduction to Pro Engineer and sets a strong foundation for gaining skills in more advanced features. The text stands as a valuable resource beyond the scope of the course.

Participants will bring information on specific company projects to be worked on during this training for real application of these concepts, tools and techniques.

- First, every module is covered and they begin with a section that provides a detailed explanation of the commands and tools in Pro Engineer Wildfire.

- Next, the command section is followed by tutorials that are created using these commands. This approach allows the student to use the text initially as a learning tool and then later as reference material.

- Lastly, the students will work on specific projects that show the preferred method of application of Pro Engineer Wildfire for their job requirements.

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Course Syllabus

I. IDENTIFYING INFORMATION

Course:	Advanced Pro Engineer
Prerequisite:	Design or Engineering experience Basic computer skills
Time Frame:	40 total contact hours, 5 modules will be covered
Instructor:	Lee Kittredge Lead CAD Instructor 20 years in the CAD field
Mobile:	(248) 844-9090
E-mail:	lee@cpspoly.com

II. REFERENCE MATERIALS

1. Pro Engineer Wildfire 5 for Designers, by Sham Tickoo

III. COURSE GOALS AND OBJECTIVES

1. Creation of assembly files
2. Add and position assembly components
3. Understanding of view states
4. Preparation of Pro Engineer drawings of parts and assemblies
5. Ability to create surfaces
6. Understand and create sheet metal parts
7. Create Mechanisms
8. Perform basic FEA analysis of solid models using Pro Mechanica

IV. METHODOLOGY

This course provides the solid fundamentals of the CAD tool to prepare the student for more specific and advanced functions. Each module will introduce new material that will prepare the student for the projects to be completed.

Lectures

Each detailed subject will be presented in a lecture format outlining the theory and standardized accepted methodology. A PDF file of the lecture material will be provided for the student's personal use as reference material. Lecture note outlines will be distributed to the students for each lecture to help the student capture personal notes.

In-Class Assignments

Using the theory and industry examples the student will conduct several projects that outline each key principal on in-class projects. These projects will increase in complexity as the students further develop their skills in applying these tools and techniques.

V. COURSE OUTLINE AND ASSIGNMENTS

Module 1: Assemblies

Assembly Files	Discussion
Top-Down Method	Discussion
Bottom-Up Method	Discussion
Placement Constraints	Discussion
Packaged Components	Discussion
Component Operations	Discussion
View States, Bill of Materials	Discussion
Chapter 11 Tutorials 1 and 2, Exercise 1	Assignment

Module 2: Drawings I

Drawing Files	Discussion
Templates	Discussion
Drawing Views	Discussion
Drawing Sections	Discussion
Drawing Options	Discussion
Chapter 12 Tutorials 1 and 2, Exercise 1	Assignment

Module 3: Drawings II

Dimensioning Drawings	Discussion
Reference Datums	Discussion
Geometric Tolerance	Discussion
Notes	Discussion
Chapter 13 Tutorials 1 and 2, Exercise 1	Assignment

Module 4: Drawings III

Sketches in Drawings	Discussion
Formats	Discussion
Tables	Discussion
Bill of Materials	Discussion
Balloons	Discussion
Chapter 14 Tutorials 1 and 2, Exercise 1	Assignment

Module 5: Surface Modeling

Style Feature	Discussion
Boundary Blends	Discussion
Mirror and Merge	Discussion
Trim and Fill	Discussion
Intersect and Offset	Discussion
Thicken and Solidify	Discussion
Chapter 15 Tutorials 1 and 2, Exercises 1 and 2	Assignment

Module 6: Sheet Metal

Sheet Metal File Sub-type	Discussion
Walls	Discussion
Adding Relief	Discussion
Conversion	Discussion
Cuts	Discussion
Flat Pattern	Discussion
Chapter 16 Tutorials 1 and 2, Exercise 1	Assignment

Module 7: Mechanism Design I

Kinematics	Discussion
Joints	Discussion
Mechanism Project 1 Handout	Assignment

Module 8: Mechanism Design II

Dynamics	Discussion
Mechanism Project 2 Handout	Assignment

Module 9: Pro Mechanica I

FEA for Designers	Discussion
P-elements vs H-elements	Discussion
Constraints and Loads	Discussion
Materials	Discussion
Static Analysis	Discussion
Result Windows	Discussion
Pro Mechanica Project 1 Handout	Assignment

Module 10: Pro Mechanica II

Standard Design Studies	Discussion
Sensitivity Studies	Discussion
Optimization Studies	Discussion
Multiple Load Sets	Discussion
Pro Mechanica Project 2 Handout	Assignment