

**Course Syllabus - winter 2010**  
**TECH 313 – Product Design and Development**  
**Department of Technology**

**Instructor:** Dr. Seaman

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**Course web site:** <http://www.calstatela.edu/faculty/vseaman/>

**Office Hours:** After class or by appointment

**Course Times:** Tuesday/Thursday 4:20pm – 6:50pm

**Location:** ET B9, Engineering and Technology building.

**Course Description**

Prerequisite: TECH 310. In-depth examination of the process of designing products for manufacture. Analysis and application of methods, models, organizations, standards and practices used in industry.

Traditional design practices although still used throughout industry continue to be replaced by concurrent engineering practices. The concept of a product realization process used by many high technology companies includes: determining customer needs, developing specifications, generating conceptual design and design the final product and associated support practices. The importance of improving design methodology in order to remain competitive in a global economy requires our graduates to be responsive to shortened product design times. Industrial Technologists need to understand the product design and development process used to create products and how to use design tools and manufacturing methods to bring products to market quicker and more economically. (Required concentration course in Computer Integrated Design).

**Student Learning Outcomes**

*Upon completion of this course, students will be able to:*

1. Design products that are matched to user needs.
2. Use design skills using both traditional and rapid visualization tools.
3. Establish the design requirements, design criteria and deliverables for a product concept.
4. Use tools and methods to develop a conceptual design.
5. Identify the processes used for detail design.
6. Prepare documentation necessary for the final design of a product including selecting components, engineering drawings, and cost estimates.
7. Identify manufacturing processes to be used that are appropriate and cost effective.
8. Make oral presentations as a member of a team during the product design and development process

## Course Requirements

### Required Text

Ulrich, Karl T. and Eppinger, Steven D., *Product Design and Development*, 4<sup>th</sup> Edition, McGraw-Hill Education. (Note: 3<sup>rd</sup> edition o.k.)

### Course website

There is a website for the course - <http://www.calstatela.edu/faculty/vseaman/>

The course outline may be subject to change and will be reflected on documents posted on the TECH 313 course website.

### Important Dates to Remember

January 4	Winter quarter; classes begin
January 18	Martin Luther King, Jr. birthday; campus closed (Monday)
March 15-20	Final examinations
March 21-28	Student recess
March 29	Spring quarter; classes begin

### Grading

Students are required to attend all classes. The final grade for the course will reflect the degree of success with assignments, quizzes on the reading material, and assigned design projects and will be calculated on the following basis.

Class participation and attendance	-15%
Quizzes on reading material	-25%
Individual Project Proposal	-10%
Team Assignments	-25%
Final Project Presentation	<u>-25%</u>
	100%

Grades will be issued using the following scale:

A	=	93-100
A-	=	90-92
B+	=	87-89
B	=	83-86
B-	=	80-82
C+	=	77-79
C	=	73-76
C-	=	70-72
D+	=	67-69
D	=	63-66
D-	=	60-62
F	=	0-59

**\* Individual/Group Work**

Courses may include various combinations of individual and group work. Students must demonstrate individual aptitude, and achieve a passing grade for individual work, in order to pass the course. It is important where collaborative work is undertaken that students be able to clearly demonstrate that individual contribution has been made.

**\* Late Submission of Deliverables**

All deliverables submitted late will accrue a 10% per day or part of day deduction from the determined grade, to a maximum of 3 days, from the original deadline time and date. Failure to submit within 3 days, without approval from the instructor, will result in a grade of F. A comprehensive medical certificate or other documentation to substantiate the absence must be submitted as soon as possible after the student's return. Such documentation must state the date of illness onset, the expected date of recover, and the extent to which the student is incapacitated.

**\* Participation and Professionalism**

Active participation and professional conduct are particularly important in courses and will be evaluated. At the same time, when the student's work is reviewed at the end of the course, an evaluation will be made based on one or more of the following: in class discussion; consultation with instructor; and work ethic. However, none of these evaluations will be used to raise an overall failing grade, to a passing one, based on the quality of the work.

**Student Considerations and Responsibilities**

**\* Student Responsibility** (*lecture/lab courses*)

The student is responsible for knowing the content of this course outline, the schedule of classes, assignments, and quizzes; and material covered during any absence from scheduled classes.

**\* Academic Honesty / Cheating and Plagiarism**

The regulations of the university require that we bring to your attention regulations on *Academic Honesty*, descriptions of which can be found in the 2009-2010 *California State University Undergraduate Catalog* on pages 101 and 762. At the same time it seems that students do not always understand the meaning of cheating and plagiarism and how to avoid it.