

**University of California, Santa Barbara
College of Engineering**

Course Syllabus

Engineering 285D New Product Development 4 units
(Elective)
Phelps 3515 MW 4-5:45 pm

Professor:	TA:	Assistant:
John Bowers	Tony Lin	Christine Dillard-DeHerrera
Engineering Science Building	Eng. Science Building	Eng. Science Building
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Catalog Description:

Engineering 285D. New Product Development

Prerequisites: Senior or graduate standing. Lecture, 4 hours.

Instruction is provided in a wide range of engineering and business topics important to the development of innovative customer driven engineering products. Design optimization, innovative thinking and the principles and methodologies of product development will be stressed. Students will learn new product development processes, and the tools, techniques and organizational structures that underlie new product development(S).

Prerequisites: Junior standing or higher.

Text, References, and Software:

K. T. Ulrich and S. D. Eppinger, *Product Design and Development*, 4th Edition, McGraw Hill, New York, 2008.

Supplemental Texts:

Product Strategy for High Technology Companies: Accelerating your Business to Web Speed, Michael McGrath, 2nd Edition, McGraw Hill, New York, 2001.

The Innovator's Solution, : Creating and Sustaining Successful Growth, by Clayton Christensen and Michael Raynor, Harvard Business School Press, Boston, 2003.

The Product Manager's Handbook: The Complete Product Management Resource, by Linda Gorchels, 2nd Edition, NTC Business Books, Chicago, 2000.

Course Objectives:

This course provides knowledge in the development of innovative and realistic customer drive engineer products. Design concepts and techniques are discussed, along with design optimization and social and economic implications. Students will gain an understanding of new product development processes as well as useful tools, techniques and organizational structures that support new product development practice.

There will be a project where you go through the entire product design sequence and write up a report and present the results in class.

Grading:

Class Participation:	10%
Homework:	20%
Midterm:	20%
Final:	25%
Project:	25%

Schedule:

M 3/30:	Lecture 1	Development Processes and Organizations (Chapters 1,2)
W 4/1:	Lecture 2	Product Planning (Chapter 3)
M 4/6:	Lecture 3	Identifying Customer Needs (Chapter 4)
W 4/8:	Lecture 4	Product Specifications (Chapter 5)
M 4/13:	Lecture 5	Concept Generation (Chapter 6)
W 4/15:	Lecture 6	Concept Selection (Chapter 7)
M 4/20:	Lecture 7	Concept Testing (Chapter 8)
W 4/22:	Lecture 8	Product Architecture (Chapter 9)
M 4/27:	Lecture 9	Industrial Design (Chapter 10)
W 4/29:	Lecture 10	Design for Manufacturing (Chapter 11)
M 5/4:	Midterm	
W 5/6:	Lecture 11	Prototyping (Chapter 12)
M 5/11:	Lecture 12	Patents and Intellectual Property (Chapter 14)
W 5/13:	Lecture 13	Product Development Economics (Chapter 15)
M 5/18:	Lecture 14	Gantt, PERT charts,etc. (Chapter 16)
W 5/20:	Lecture 15	Managing Projects (Chapter 16)
M 5/25:	Memorial Day Holiday	
W 5/27:	Project Presentations	
M 6/1:	Project Presentations	
W 6/3:	Lecture 16	Review
F6/12:	Final	