

# New Product Development

**Course**      **New Product Development**; Course contents © Stephan Sorger  
UC Berkeley Extension International Diploma Program; Fall 2014

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**Meetings**     September 12 - November 3, 2014  
UC Berkeley Extension Golden Bear Building, Berkeley, California

## **Course Description**

Learn what it takes to develop a successful new product. Gain knowledge in customer need identification, concept generation and selection, industrial design, patents, financing and launch, all taught with an entrepreneurial approach. The instructor uses readings, case studies, videos and a prototyping team project to bring the subject to life. Find out more at [www.stephansorger.com](http://www.stephansorger.com).

## **Course Goals and Learning Objectives**

On successful completion, participants will be able to:

- Understand the market and its needs
- Develop innovative, well-designed products
- Protect inventions
- Gain approval for new product funding

## **Intended Audience**

This course targets marketing and product development professionals such as product managers, project managers, marketing professionals, and others aspiring to gain entry into the field.

## **Prerequisites**

- Introduction to Marketing or equivalent

## **Instructional Methodology**

- Lectures on core topics in new product development
- Videos highlighting aspects of the new product development process
- Case Studies of successful products
- Assignments to test new product development execution
- Exams to test product development concepts and terminology
- Design Project to exercise topics taught in course

## **Required Reading**

- Course Content: Stephan Sorger, "New Product Development": See [www.stephansorger.com](http://www.stephansorger.com)

## **Suggested Reading**

- Textbook, Recommended: Ulrich and Eppinger, "Product Design and Development", McGraw-Hill, 5<sup>th</sup> edition, 2012, ISBN 9780073404776 OR 4<sup>th</sup> edition, 2008, ISBN 9780073101422
- Textbook, Recommended: Recommended for use in creating plans for new products/services: Sorger, "Marketing Planning: Where Strategy Meets Action", Pearson Prentice-Hall, 2012, 1<sup>st</sup> edition, ISBN # 0132544709

## **Grading and Course Components**

Grading is calculated from the components shown below, using the following absolute scale:  
94-100%: A; 90-93%: A-; 86-89%: B+; 83-85%: B; 80-82%: B-  
76-79%: C+; 73-75%: C; 70-72%: C-; 66-69%: D+; 63-65%: D; 60-62%: D-; Below 60: F

	<u>Percent</u>
Project	20%
Class participation	10%
Homework assignments	10%
Midterm exam	30%
Final exam	30%
Total	100%

### **Project**

Students apply what they learn in class by forming teams and completing a team project.

- The project must be non-confidential.  
Example: Students assigned to secret projects at work should think of a non-work project.
- Product must be an original work.  
Example: Existing products that have been slightly modified or repurposed are not acceptable.
- Project should consist of a physical, tangible good created by students.  
Example: Instructor must approve requests for software applications or services.
- Product must be safe.  
Example: Product must not contain any harmful elements, such as fire or sharp edges.
- Product must demonstrate a market need.  
Example: Product must have existing competitors in the market.
- Product must be self-sufficient, to allow purchase by consumer.  
Example: Ballpoint pen is self-sufficient and can be sold; Spring in pen is not self-sufficient.
- Each person will receive their overall team's grade, calculated with "Project Grading Sheet."  
Example: If project receives a score of 90%, then all team members receive 90%.
- Students select their own project ideas.  
Examples: Jewelry storage; Bicycle rack; New type of beverage; Party plate with cupholder.

**Outline:** Students must present their project using the following outline:

- Process: Describe team and any special organization structure and processes used.
- Market Need: Identify market need and potential market segments.
- Competition: Discuss competing companies and their products/services.
- Concept Generation: Describe the process and ideas created during concept generation.
- Concept Evaluation: Show evaluation criteria and how the winning idea was selected.
- Architecture and Development: Describe architecture and development, especially tradeoffs.
- Industrial Design: Discuss how the team designed the product for usability and style.
- Economics: Develop an economic model showing costs, pro-forma, and break even analyses.
- Funding: Discuss how the team could gain funding for the product.
- Intellectual Property: Show USPTO trademark and URL availability, and patent approach.
- Risk Management: Describe how risk is managed in the product.
- Launch: Product: Describe the value proposition, positioning, and messaging. Include ad.
- Launch: Price: Discuss how team selected retail price and discounts, if any.
- Launch: Place: Identify distribution channels and expected costs and other concerns.
- Launch: Promotion: Describe efforts to promote the product during launch and beyond.
- Conclusion: State lessons learned and observations on product development process.

## **Class Participation**

Class participation is made up of two components, attendance (5 points) and discussions (5 pts).

**Attendance:** Students must attend classes to enjoy the full benefits the course offers. To that end, attendance will be monitored every class session, and points deducted for unexcused absences or tardiness more than 15 minutes. The scoring is calculated as follows (5 points max)

5 points: Attended all classes punctually

4 points: Missed one class, or was late to one class

3 points: Missed two classes or was late to two classes

0 points: Missed more than two classes or late to more than two classes.

**Discussions:** Students are expected to study the assigned material to prepare for class sessions and ask relevant questions to gain understanding during class. To that end, discussions will be monitored during every class session, and points calculated as follows (5 points max):

5 points: Participates regularly; Uses specific examples; Helps class come to consensus

4 points: Contributions are relevant and demonstrate understanding

3 points: Participates occasionally

2 points: Does not actively contribute to class

1 point: Interrupts other students; Not respectful of others; Discusses irrelevant topics

## **Homework Assignments**

Students will complete one group assignment and one individual assignment. In the group assignment, students are permitted to collaborate with other group members to complete the assignment. In the individual assignment, students must complete assignment without outside assistance. Each assignment is worth 5 points, for a total of 10 points.

Grading for each assignment uses a 5-point scale, calculated as follows:

1 point: Originality: Students start with a new Microsoft Word document (and do not simply print out the existing case and write on it).

1 point: Content: Students answer each of the questions.

1 point: Accuracy: Students show correct answers, and show their calculations.

1 point: Comments: Students include comments in the case that demonstrate they have thought about the situation facing the organization profiled in the case study.

1 point: Punctuality: Students shall email assignments to the instructor by the specified deadline.

## **Midterm Exam**

The midterm is closed-book, and tests the following content: Units 1 - 8

## **Final Exam**

The final exam is closed-book, and tests the following content: Units 9 - 16

## **Academic Ethics Honor Code**

All members of the UC Berkeley Extension community are expected to act with honesty, integrity, and respect for others. For further information, please refer to:

Tips for maintaining academic integrity:

[http://extension.berkeley.edu/upload/academic\\_integrity.pdf](http://extension.berkeley.edu/upload/academic_integrity.pdf)

UC Berkeley Extension Code of Student Conduct:

<http://extension.berkeley.edu/upload/studentconduct.pdf>

## **Disabled Student Services**

If you require academic accommodations for this course, you should obtain approval from Extension Disabled Student Services. Please contact them at [dss-unex@berkeley.edu](mailto:dss-unex@berkeley.edu) or (510) 643-5732. If you already have a letter of accommodation from Extension Disabled Student Services, please make an appointment with your instructor to have a confidential discussion of what you will require for this course.

## **Schedule**

PDD: Product Design and Development book. Usage: PDD5 Ch. 2: 5th Edition, Chapter 2.

MP: Marketing Planning book. Usage: MP Ch. 3: Chapter 3.

### **Meeting 1: Friday, September 12, 2014, 1:30PM - 4:30PM**

- Administration: Review syllabus, Introduce class members, Set up teams, discuss project
- Unit 1 Introduction (PDD4/PDD5 Ch. 1)
- Unit 2 Product Management Process (PDD4/PDD5 Ch. 2, PDD4 Ch. 4, PDD5 Ch. 3)
- Videos Bradley Vehicle's poor process (09:57); Adidas Cube (2:22)
- Case 1 Process: Sportswear industry: Adidas Innovation Center

### **Meeting 2: Friday, September 19, 2014, 1:30PM - 4:30PM**

- Unit 3 Market Need (MP Ch. 3, MP Ch. 4)
- Unit 4 Competition (MP Ch. 5)
- Videos WildPlanet, Identifying Customer Needs (9:23); Umpqua Bank (4:35)
- Case 2 Market Need: Financial Services: Umpqua Bank
- Project Class time to work on project

### **Meeting 3: Friday, September 26, 2014, 1:30PM - 4:30PM**

- Unit 5 Concept Generation (PDD4 Ch. 6; PDD5 Ch. 7)
- Unit 6 Concept Evaluation (PDD4 Ch. 7; PDD5 Ch. 8)
- Video IDEO and idea generation (8:22)
- Case 3 Concept Generation: Food industry: Shopping carts

### **Meeting 4: Friday, October 3, 2014, 1:30PM - 4:30PM**

- Unit 7 Architecture and Development
- Unit 8 Industrial Design (PDD4 Ch. 10; PDD5 Ch. 11)
- Video AutoDesk CAD (3:02); Everyday Edisons (3:14); GE Appliances (8:28)
- Case 4 Assignment (Group): Product Architecture: Home appliances: GE Appliances
- Project Class time to work on project

### **Meeting 5: Tuesday, October 14, 2014, 9:30AM - 12:30PM**

- Unit 9 Economics (MP Ch. 11)
- Unit 10 Funding
- Video VC David Rose at TED (14:39); Angel Investors (3:20)
- Case 5 Assignment (Individual): Economics: Sporting goods: Simon's Surfboards

### **Meeting 6: Tuesday, October 14, 2014, 1:30PM - 4:30PM**

- Unit 11 Intellectual Property
- Video Typical Cost for Patents (2:57); Patent Trolls (6:40)
- Exam Midterm Exam: Units 1 - 8 (students may leave class once finished)

### **Meeting 7: Wednesday, October 22, 2014, 9:30AM - 12:30PM**

- Unit 12 Risk Management (MP Ch. 12)
- Unit 13 Launch: Product (MP Ch. 7)
- Video 3D Printing for prototyping (2:27); Storyboard for services (2:11)
- Video Turbo Encabulator and value propositions (1:49)
- Case 6 Risk Management: Consumer Electronics: Reducing risk of phone launch

**Meeting 8: Monday, October 27, 2014, 9:30AM - 12:30PM**

- Unit 14            Launch: Price (MP Ch. 8)
- Unit 15            Launch: Place (MP Ch. 9)
- Unit 16            Launch: Promotion (MP Ch. 10)
- Video             Apple iPhone Pricing (1:31); Apple Store (4:14); Will It Blend? (2:25)
- Case 7             Launch: Consumer Electronics: Launch plan for Apple iPhone

**Meeting 9: Monday, October 27, 2014, 1:30PM - 4:30PM**

- Assignments      Assignments due
- Project:            Team project presentations

**Meeting 10: Monday, November 3, 2014, 1:30PM - 4:30PM**

- Exam                Final Exam: Units 9 - 16 (students may leave class once finished)

**New Product Development**  
**Project Grading Sheet**  
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Date: \_\_\_\_\_  
 Topic: \_\_\_\_\_  
 Members: \_\_\_\_\_

No.	Grading Criterion	Score: 1-5	Total
<b>Deliverables</b>			
1.	Time: 15 min. max; Start: _____; End: _____; ____min	1 2 3 4 5	_____
2.	<u>Hardcopy</u> : PPT Presentation, printed two slides per page	1 2 3 4 5	_____
3.	<u>Softcopy</u> : Presentation on CD/ USB Flash Drive (for instructor to keep)	1 2 3 4 5	_____
4.	<u>Demonstration</u> : Operate product in likely usage situation	1 2 3 4 5	_____
<b>Presentation</b>			
5.	<u>Process</u> : Describes team, organization structure, and processes. Comments: _____	1 2 3 4 5	_____
6.	<u>Market Need</u> : Identifies market need and potential market segments. Comments: _____	1 2 3 4 5	_____
7.	<u>Competition</u> : Discuss competing companies and products/services. Comments: _____	1 2 3 4 5	_____
8.	<u>Concept Generation</u> : Describe generation process and ideas created. Comments: _____	1 2 3 4 5	_____
9.	<u>Concept Evaluation</u> : Show criteria and how winning idea was selected. Comments: _____	1 2 3 4 5	_____
10.	<u>Architecture &amp; Development</u> : Describe arch., development, tradeoffs. Comments: _____	1 2 3 4 5	_____
11.	<u>Industrial Design</u> : How team designed product for usability and style. Comments: _____	1 2 3 4 5	_____
12.	<u>Economics</u> : Show costs, pro-forma, break-even analyses. Comments: _____	1 2 3 4 5	_____
13.	<u>Funding</u> : Discuss how the team could gain funding for the product. Comments: _____	1 2 3 4 5	_____
14.	<u>Intellectual Property</u> : Show USPTO trademark, URL, patent approach. Comments: _____	1 2 3 4 5	_____
15.	<u>Risk Management</u> : Describe how risk is managed in the product. Comments: _____	1 2 3 4 5	_____
16.	<u>Launch: Product</u> : Show value proposition, positioning, messaging, ad. Comments: _____	1 2 3 4 5	_____
17.	<u>Launch: Price</u> : Discuss how team selected retail price and discounts. Comments: _____	1 2 3 4 5	_____
18.	<u>Launch: Place</u> : Identify distribution channels, costs, concerns. Comments: _____	1 2 3 4 5	_____
19.	<u>Launch: Promotion</u> : Describe efforts to promote product. Comments: _____	1 2 3 4 5	_____
20.	<u>Conclusion</u> : State lessons learned and observations on process. Comments: _____	1 2 3 4 5	_____
<b>Total</b>			
	Total Score: 20 criteria x 5 pts each = 100 points max	100 max	_____
	Comments: _____		