

# New Product Development

- Course**      **New Product Development**; Course contents © Stephan Sorger  
UC Berkeley Extension BUS ADM X405.8-010, 2 semester units; Fall 2016
- Instructor**    Stephan Sorger  
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email: [sorger@berkeley.edu](mailto:sorger@berkeley.edu); [www.stephansorger.com](http://www.stephansorger.com)
- Meetings**     April 22 – May 20, 2017; 5 Saturdays, 9AM – 4PM; 160 Spear Street, San Francisco, CA  
Some class meeting dates subject to change

## **Course Description**

Learn what it takes to develop a successful new product, service or app. Gain insider knowledge in customer need identification, concept generation and selection, industrial design, patents, financing and market introduction, all taught with a do-it-yourself 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 your invention
- Manage the entire product development process
- Gain approval for new product funding

## **Intended Audience**

This course targets marketing and product development professionals such as:

- Product Managers, Project Managers, Marketing Professionals, Business Development

## **Prerequisites**

- Introduction to Marketing or equivalent

## **Instructional Methodology**

- Lectures on vital areas of new product development
- Case Studies of successful products (and perhaps some failed ones too)
- Videos highlighting areas of the new product development process
- Exams to test product development concepts and terminology
- Design Project to exercise topics taught in course

## **Reading Requirements**

- 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

## **Credit Requirements**

Grading is calculated from the components shown below, using the following cutoff points:  
100 – 94 = A, 93 – 90 = A-, 89 – 87 = B+, 86 – 84 = B, 83 – 75 = B-, 74 – 65 = C

	<u>Percent</u>
Project	30%
Midterm Exam:	35%
Final Exam:	<u>35%</u>
Total	100%

### **Project**

Students apply what they learn in class by forming teams and completing a team project. Please select from the project selections below. In all cases, projects must be non-confidential (not secret), original (students must create the prototype from basic components), safe (no sharp edges, no fire, etc.), self-sufficient (able to be sold separately), and must demonstrate a market need (must show how why a market segment would benefit from the new product). Tangible products are preferred over services and software applications. Ideas not on the list below require approval from the instructor.

- Bicycle cup holder: Fits onto handlebar of bicycle to hold coffee and other beverage cups
- Bicycle first aid kit: Frame-mounted bag including basic first aid kit
- Cell phone mini wallet: Cell phone cover with attached enclosure for driver's license, etc.
- Cell phone acoustic amplifier: Attaches to phone to amplify sound from existing speaker
- Child backpack with leash: Parent holds leash to ensure security of child in crowds
- Cooking spice rack: Allows unusual sorting of spices to satisfy needs of specialty cooks
- Dog leash with built-in flashlight: Handle includes adaptor to fit standard AA flashlight
- Jewelry storage box: Box with lid to store and display bracelets, rings, and other jewelry
- Wine holder: Cardboard-constructed holder for bottle of wine, with handle on top
- Wine storage: Storage solutions to solve specific needs by homeowners and wine lovers

**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.

Students are suggested to work using the following outline (optional):

**Week 1: Project Roles:** Assign roles to team members (each can have more than one role)

- Role: Project coordination: Project management; Meetings; Drive deliverables; etc.
- Role: Marketing: Market research; Competitive analysis; Launch plans; etc.
- Role: Engineering: Prototype design; Development; Troubleshooting; etc.
- Role: Industrial Design: User interface; Color; Shape; etc.
- Role: Business: Finance; Intellectual property; etc.

**Week 2: Market Need and Prototype Development**

- Market need: Identify market need; Research competitors; Determine value proposition, etc.
- Concept generation and selection: Identify winning product/service concept
- Prototype development: Develop rough prototype

**Week 4: Feedback**

- Show draft prototype and presentation to instructor
- Discuss draft prototype with 5 – 10 people in target market

**Week 5: Project Presentation:** Give instructor two deliverables (for instructor to keep)

- Hardcopy: PowerPoint presentation, printed 2 slides per page
- Softcopy: PowerPoint presentation, with photo of project, on CD, DVD, or USB flash drive

**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>

**Professional Behavior**

The course does not tolerate any whining, complaining, or other non-professional behavior. We assume you are here to learn. Learning is a partnership between the instructor and the student. Both must engage with a positive attitude to succeed. Students who do not take responsibility for their own success and instead blame others (including the instructor) for their failures, such as low scores on exams and assignments, or poor team performance will be considered “disruptive students” due to the toxic environment they create for others. Disruptive students could be asked to leave the course.

**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.

**New Product Development Schedule: StephanSorger.com; sorger@berkeley.edu**

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

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

**April 22, 2017:**

**Meeting 1: Setting the Stage**

- 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
- Lunch
- 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

**April 29, 2017:**

**Meeting 2: From Inspiration to Concept**

- 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
- Lunch
- 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 Product Architecture: Home appliances: GE Appliances
- Project Class time to work on project

**May 6, 2017:**

**Meeting 3: From Concept to Product**

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

**May 14, 2017:**

**Meeting 4: From Product to Market**

- 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)
- Case 6 Risk Management: Consumer Electronics: Reducing risk of phone launch
- Lunch
- 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

**May 20, 2017:**

**Meeting 5: Closing & Group Presentations**

- Assignments Assignments due
- Project: Team project presentations (extend past lunch if necessary)
- Lunch
- 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: _____		