Course Code
Product Development and Management
Module 4, 2019-2020

Course Information

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Classes:
Lectures: Day, Time
Venue: Online course
Course Website:

1. Course Description

1.1 Context

Course overview:
Product Design and Management is a project-based course that covers modern tools and methods for product design and management, focusing on the cross-functional nature of product design activities and decision making. The cornerstone is a project in which teams of interdisciplinary students conceive, design, prototype, and testing a product. Class sessions are conducted in workshop mode and employ cases and hands-on exercises to reinforce the key ideas.
Topics include: design thinking skills, product planning, customer needs analysis, concept development, industrial design, concept testing, prototyping, design for environment, product architecture, project management.

Prerequisites:
Social Research Methods

1.2 Textbooks and Reading Materials

Ulrich, K. T. and Eppinger S. D. (2012). Product design and development. New York: McGraw-Hill Education.
Thomke, Stefan, and Ashok Nimgade. "IDEO Product Development." Boston, MA: Harvard Business School Case 9-600-143.

2. Learning Outcomes

2.1 Intended Learning Outcomes

Learning Goals	**Objectives**	**Assessment (YES with details or NO)**
1. Our graduates will be effective communicators.	1.1. Our students will produce quality business and research-oriented documents.	YES. Product planning.
	1.2. Students are able to professionally present their ideas and also logically explain and defend their argument.	YES. Product develop and case present.
2. Our graduates will be skilled in team work and leadership.	2.1. Students will be able to lead and participate in group for projects, discussion, and presentation.	YES. During group projects, discussion, and presentation.
	2.2. Students will be able to apply leadership theories and related skills.	
3. Our graduates will be trained in ethics.	3.1. In a case setting, students will use appropriate techniques to analyze business problems and identify the ethical aspects, provide a solution and defend it.	YES. Design for environment, design for society.
	3.2. Our students will practice ethics in the duration of the program.	
4. Our graduates will have a global perspective.	4.1. Students will have an international exposure.	YES. Readings and discussions.
5. Our graduates will be skilled in problem-solving and critical thinking.	5.1. Our students will have a good understanding of fundamental theories in their fields.	YES. Theory of Invention Problem Solving, Game Theory, Design Theory, etc.
	5.2. Our students will be prepared to face problems in various business settings and find solutions.	YES. Structure methods.
	5.3. Our students will demonstrate competency in critical thinking.	YES. Critical design review.

2.2 Course specific objectives

The focus of Product Design and Development is integration of the marketing,

design, and manufacturing functions in creating a new product. The course is intended to provide you with the following benefits:
- Competence with a set of tools and methods for product design and development.
- Confidence in your own abilities to create a new product.
- Awareness of the role of multiple functions in creating a new product (e.g. marketing, finance, industrial design, engineering, production).
- Ability to coordinate multiple, interdisciplinary tasks in order to achieve a common objective.
- Enhanced team working skills.

Your challenge in the project portion of this course is to design a new product and to produce a prototype version of it. The goal of this exercise is to learn principles and methods of product development in a realistic context. Most product development professionals work under tremendous time pressure and do not have sufficient opportunity to reflect on the development process. In this course, the project stress level will be low enough that there will be time to experiment and learn. Project ideas come from the students in the class plus one or more sponsored project opportunities.

2.3 Assessment/Grading Details

This is a 16-unit graduate course. It is expected that each student will prepare for and attend all of the class sessions and will regularly enhance class discussions. Please come to class on time, no mobile phone or laptop computer usage during class presentations and discussions, and conducting one conversation at a time. Most important though are substantial and continuous contributions to the progress of the team project.

Activities	Percentages
Class Participation	15%
Individual Project Proposal	25%
Team Assignments	35%
Final Project Presentation	25%

Individual project proposal: each student will based on reading topic, present one product case study for 15 minutes.
Team assignments: student group (no more than 4 students) will go through one product development process (Exhibit 2-2, Ulrich and Eppinger, 2012, p. 14) before Jun. 20.
Final project presentation: each group will present their final work on June 22.

2.4 Academic Honesty and Plagiarism

It is important for a student's effort and credit to be recognized through class assessment. Credits earned for a student work due to efforts done by others are clearly unfair. Deliberate dishonesty is considered academic misconducts, which include plagiarism; cheating on assignments or examinations; engaging in

unauthorized collaboration on academic work; taking, acquiring, or using test materials without faculty permission; submitting false or incomplete records of academic achievement; acting alone or in cooperation with another to falsify records or to obtain dishonestly grades, honors, awards, or professional endorsement; or altering, forging, or misusing a University academic record; or fabricating or falsifying of data, research procedures, or data analysis.

All assessments are subject to academic misconduct check. Misconduct check may include reproducing the assessment, providing a copy to another member of faculty, and/or communicate a copy of this assignment to the PHBS Discipline Committee. A suspected plagiarized document/assignment submitted to a plagiarism checking service may be kept in its database for future reference purpose.

Where violation is suspected, penalties will be implemented. The penalties for academic misconduct may include: deduction of honour points, a mark of zero on the assessment, a fail grade for the whole course, and reference of the matter to the Peking University Registrar.

For more information of plagiarism, please refer to *PHBS Student Handbook*.

3. Topics, Teaching and Assessment Schedule

Time	Topics	Readings
Lecture 1	Introduction to PDM	Ulrich and Eppinger, Chapter 1; Design Thinking (Brown)
Lecture 2	Systematic Innovation + Real-Win-Worth-It	Ulrich and Eppinger, Chapter 2, 3; CBS interview of IDEO founder 2013
Lecture 3	Customer Needs Analysis	Ulrich and Eppinger, Chapter 5; Bloomberg on Lego (2011), Zara (2014)
Lecture 4	Project Selection Present and select opportunities to from project teams	
Lecture 5	Product Specifications + Scrum Process Mission statement	Ulrich and Eppinger, Chapter 6; Scrum Guide (2017)
Lecture 6	Creativity and Concept Generation	Ulrich and Eppinger, Chapter 7; TED Talk on creativity
Lecture 7	Prototyping Customer needs and competitive analysis	Ulrich and Eppinger, Chapter 14; How to make almost anything (2012)
Lecture 8	Concept Selection	Ulrich and Eppinger, Chapter 8
Lecture 9	` Concepts, specs, and patent search	Ulrich and Eppinger, Chapter 11; Yves Bahar's TED Talk
Lecture 10	Experience and Service Design	Ulrich and Eppinger, Chapter 17; Disney's Billion Bet; Words matter

Lecture 11	Concept model design review	
Lecture 12	Design for Environmental Sustainability	Ulrich and Eppinger, Chapter 12
Lecture 13	Product Architecture and Modularity Project timing and risk plan	Ulrich and Eppinger, Chapter 10; Simpson, 2004;
Lecture 14	Product Testing and Validation Testing and production plans	Ulrich and Eppinger, Chapter 9; Mankins, 1995; Ogawa and Piller, 2006
Lecture 15	Detail Design Review Life cycle assessment and patent review	Ulrich and Eppinger, Chapter 16;
Lecture 16	Product Managing	Product management for the web
TBD	Onsite study or online seminar	
Final	Group presentation	

4. Miscellaneous

Develop and manage product for the society, for the users.