

Korea University International Winter Campus (KU IWC) 2018 \sim 2019

Choose Your Winter in Seoul - one of the most exciting cities in the world December 27, 2018 \sim January 17, 2019

IWC109 - Engineering Design

| . Instructor

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II. Textbook

Required Textbook : The Mechanical Design Process, D.G. Ullman, 4th Ed., McGraw-Hill, 2010. ISBN-13: 978-0072975741



Recommended:E. Ries, The Lean Startup, Crown: New York, 2011/T. Hopkins, Selling forAdditionalDummies, Wiley: Indianapolis, 2011ReadingsISBN-13: 978-0307887894

III. Course Description and Objectives

This course offers a <u>systematic design methodology</u> encompassing all design processes in engineering from the <u>conceptual design</u> to the <u>embodiment of products</u>. The course includes the whole process of product design starting from the problem definition, creation and synthesis of ideas, evaluation of the ideas, and combination of the generated ideas. Student will learn strategical methoology for building a Global Pitch Deck and Lean Canvas for preparing gobal investor relations (IR). Together with IR pitch demo, student will learn global <u>"Lean Startup"</u> and <u>"Stanford dSchool Desing Thinking"</u> framework through workshop. Student will also understand ASEAN emerging market and global startup stragety through Singapore based <u>ASEAN startup ecosystem and startup launch-pad platform</u>. The course also emphasizes group projects in which students have practical experiences through the actual product design, manufacturing, operation, and presentation of the results. This process requires <u>creative ideation</u> and synthesis of all knowledge and techniques acquired through their undergraduate courses.

IV. Grading

Attendance	:	10 %
Midterm Exam	:	15 %
Final Exam	:	25 %
Presentation	:	30 %
Assignments	:	10 %
Participation	:	10 %

V. Class Outline

Date	Торіс	Chapter	Remarks
Dec 27 (Thu)	Introduction to class and design process	1	
Dec 28 (Fri)	Enginering Design Problem Define	2	
Dec 31 (Mon)	Product Discovery - Human Centered Design Thinking	4	
Jan 1 (Tue)	New Year's Day (National Holiday, No	class)	
Jan 2 (Wed)	Global pitch deck and lean canvas		
Jan 3 (Thu)	Mock IR and Pitch Deck Presentation		
Jan 4 (Fri)	Plan for Design and Engineering Specification	5, 6	
Jan 7 (Mon)	Concept Generation	6, 7	
Jan 8 (Tue)	Midterm exam: Mock IR presentation		
Jan 9 (Wed)	Concept Evaluation and Project Generation	8, 9	
Jan 10 (Thu)	ASEAN startup platform and business environment		
Jan 11 (Fri)	Product evaluation - Performance, Reliability	10	
Jan 14 (Mon)	Product evaluation - Cost, Manufacturing, Assembly	11	
Jan 15 (Tue)	Summary of Engineering Design with Design Thinking	12	
Jan 16 (Wed)	Final exam: Engineering Design Presentation		
Jan 17 (Thu)	Final exam: Business IR Presentation		