

NATIONAL TSING HUA UNIVERSITY, DEPARTMENT OF INDUSTRIAL ENGINEERING AND ENGINEERING MANAGEMENT

(114.9-114.12)

課程名稱	創新與研發管理	課程編號	IEEM1140102	學分數	3
上課時間	每週二晚上 6:30~9:20	教室	R901	人數	30 位
授課教師	邱銘傳 教授	學歷	美國賓州州立大學工業工程博士		
		專長	永續設計、服務創新、產品服務系統、智慧製造		
課程大綱	一、課程目的				
	This course is intended to introduce the concept and principle for effective management of innovation and R&D that is becoming the prime opportunities and the competitive advantages for the technology-based business. The class will review and discuss the key issues and related cases with a view to bridge the engineering and business considerations, along with the presentation of selected approaches, methods and tools to enable effective management of product, process, service, and business model innovation and development.				
	二、課程進度				
	Theme	Reading (text chapter)			
	I. Executing & Building Technology Innovation	Organizing for Innovation (Ch. 10)			
	Organization & Process	Managing New Product Development Process (Ch.11)			
	for Technology Development				
	Core Competence & Strategic Intent	Managing New Product Development Team (Ch. 12)			
	Corporate strategy in emerging markets	Defining Strategic Direction (Ch. 6)			
	Creating Project Plan, Portfolio & Dynamics	Choosing Innovation Projects (Ch. 7)			
	Creating Project Plan, Portfolio & Dynamics	Collaboration Strategies (Ch. 8)			
	II. Exploring Innovation Dynamics	Source of Technology Innovation (Ch. 2)			
	Innovation Roadmap & Pattern	Type & Pattern of Innovation (Ch. 3)			
	Technology Standard & Dominance	Standard Battle & Design Dominance (Ch. 4)			
	Change management & Leadership	Entry Timing (Ch. 5)			
	R&D Special Topic 1	Guest Speaker			
	III. Managing Innovation Value Network	Crafting Deployment Strategy (Ch. 13)			
	Service Innovation	R&D Comes to Services			
	Intellectual Property	Protecting Innovation (Ch. 9)			
	Term-project/ Final review	Review (or mid-term/final presentation @ class #9/ #15)			

教學方式	<p>Lecture and discussion on case and reading (with case-base participative learning)</p> <p>Class discussion, homework and term project in groups</p> <p>Course material site: iLMS or elearn</p>
指定用書	<p>Schilling, M.A. Strategic Management of Technological Innovation, 6th ed., McGraw-Hill, 2021. (李亭林譯 科技創新管理，華泰文化，2021)</p> <p>K.T. Ulrich and S.D. Eppinger, Product Design and Development, 6th ed, McGraw Hill, 2016, Selected cases and readings</p>
成績考核	<p>To pursue the course objective effectively, the following are required:</p> <ol style="list-style-type: none"> 1. Prepare and discuss readings and case (40-45%) 2. Plan, perform and present term project (35-40%) 3. Homework Q&A (20%)
參考書籍	<p>Thomke, S. <i>Managing Product and Service Development: Text and Cases</i>, McGraw-Hill, 2007</p> <p>Burgelman, R.A., Christensen, C.M. & Wheelwright, S.C. <i>Strategic Management of Technology & Innovation</i>, McGraw-Hill, 2009</p> <p>Silverstein, D., Samuel, S., and DeCar, N. <i>Innovator's Toolkit: 10 Practical Strategies to Help You Develop and Implement Innovation</i>, Harvard Business School Press, 2009.</p> <p>Skarzynski, P. and Gibson, R. <i>Innovation to the Core: A Blueprint for Transforming the Way Your Company Innovates</i>, Harvard Business School Press, 2008.</p> <p>Chesbrough, H.W. <i>Open Innovation</i>, Harvard Business School Press, 2003.</p> <p>Dyer, J., Gregersen, H. and Christensen, C.M. <i>Innovator's DNA: Mastering the Five Skills of Disruptive Innovators</i>, Harvard Business School Press, 2011.</p> <p>Clark, K.B. and Wheelwright, S.C. <i>Managing New Product and Process Development: Text and Cases</i>, Free Press, 1993.</p> <p>The PDMA handbook of new product development, Wiley, 1996.</p>