

國立清華大學工業工程與工程管理學系

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

第四十七期 推廣教育碩士學分班

(108.9-109.1)

課程簡介

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| 課程名稱 | 創新與研發管理 | | 課程編號 | IEEM1080104 | 學分數 | 3 |
| 上課時間 | 每週四晚上 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 | 產品設計與供應鏈設計整合、周全設計、服務創新 | | | |
| | 朱詣尹 教授 | 學歷 | 美國伊利諾大學工業工程博士 | | | |
| | | 專長 | 科技管理、專案管理、同步工程管理 | | | |
| 課程大綱 | <p>一、課程目的</p> <p>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.</p> | | | | | |
| | <p>二、課程進度</p> | | | | | |
| | Theme | | | Reading (text chapter) | | |
| | I. New Product Development Process | | | Introduction (Ch. 1) | | |
| | Product Strategy & Planning | | | Development Processes (Ch. 2) | | |
| | Product Planning | | | Product Planning (Ch. 3) | | |
| | Product Specification | | | Identify Customer Needs (Ch. 4) | | |
| | | | | Product Specifications (Ch. 5) | | |
| | System Design and Function Decomposition | | | Concept Generation (Ch. 6) | | |
| | Product Architecture | | | Product Architecture (Ch. 9) | | |
| | II. Designing Technology Strategy & Process | | | Organizing for Innovation (Ch. 10) | | |
| | Organization & System for Technology Development | | | Managing New Product Development Process (Ch.11) | | |
| | Structure & Management for Development | | | Managing New Product Development Team (Ch. 12) | | |
| | Technology Strategy | | | Crafting Deployment Strategy (Ch. 13) | | |
| | Service Innovation | | | R&D Comes to Services | | |
| III. Managing Global Value Network | | | Source of Technology Innovation and Technology Roadmap (Ch. 2 & 3) | | | |
| Technology Leadership & Strategy | | | Standard Battle & Design Dominance and Entry Timing (Ch. 4 & 5) | | | |
| Core Competence & Strategic Intent | | | Defining Strategic Direction and Choosing Innovation Projects (Ch. 6 & 7) | | | |
| Value Creation & Protection | | | Collaboration Strategies & Protecting Innovation (Ch. 8 & 9) | | | |
| | | | Review (or mid-term/final presentation @ class #9/ #15) | | | |

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| 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 DropBox</p> |
| 指定用書 | <p>Schilling, M.A. <i>Strategic Management of Technological Innovation</i>, 4th ed., McGraw-Hill, 2013 (李亭林譯 科技創新管理, 華泰文化, 2013.)</p> <p>K.T. Ulrich and S.D. Eppinger, <i>Product Design and Development</i>, 5th ed, McGraw Hill, 2004.</p> <p>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> |