Course Description: This course explores contemporary thinking on the process of bringing new products and services to market within the overall strategic context of the firm. Where do new products come from, and what is it that makes them new? What are the elements that promote ongoing generation of new products over time? We examine critical issues of cost estimation, risk definition and management, status measurement. How do new products relate to the financial performance of the company? Who are the key players in the process, and how are they organized? What roles do customers and suppliers play in new product definition and introduction? We contrast classical phase-sequential techniques with new approaches facilitating faster convergence in dynamic high-risk environments.

Much of the material in the course comes from the literature of software products; however, the lessons are not limited to that environment. Projects now so often contain both hardware and software that the engineer or manager involved in new product introduction requires familiarity with both domains.

Method of Instruction: Taught through lectures, guest lectures, readings, and case-based discussion of current management literature. Offered on-campus and through Interactive Compressed Video (ICV) at off-campus sites.

Textbooks:
- Product Leadership: Creating and Launching Superior New Products
- Developing Products in Half the Time: New Rules, New Tools
  Preston G. Smith and Donald G. Reinertsen; Van Nostrand Reinhold [1998], ISBN 0442025483
- Rapid Development: Taming Wild Software Schedules
  Steve McConnell; Microsoft Press [1996], ISBN 1556159005

Requirements and Grading: Three equally-weighted elements:
1. Contribution to class understanding through analysis and discussion of assigned cases and readings
2. Written analysis of one case assigned in common to all students
3. A written and oral report on best contemporary practice in one topic-area addressed in the course. Areas for review will be identified and assigned within the first three class sessions

4 Credits:

Prerequisites: Graduate standing or consent of the instructor. Previous work experience and previous experience in the case-discussion method will greatly facilitate learning.
Part I: Introduction, Overview, Foundation Concepts

Class sessions: **Sept 5, Sept 10, Sept 12, Sept 17, Sept 19**

Topics addressed:
1. Product Strategy as an element of competitive strategy
2. Ways to characterize business risk
3. Characterizing the product / market environment that new products live in
4. What’s new about new products

Cases:
- *Hewlett Packard – The Sally Project*, To Be Distributed by the Instructor
- *Boeing 767: From Concept to Production (A)*, HBSP 688040
- *Nissan Motor Co. Ltd.: Target Costing System*, HBSP 194-040
- *Cytic 2000 Annual Report* – To be distributed by the instructor

Readings:
- Cooper: *Product Leadership*, Chapter 1 – *Winning Is Everything*
- *Managing Innovation: Controlled Chaos*, HBSP 85312

Supplemental Readings:
  Reprint No. 79208

Part II: Product Definition


Topics addressed:
1. The Fuzzy Front End
2. Who’s the customer?
3. Customers as development partners
4. Vendors as development partners

Cases:
- *Silicon Graphics, Inc. (A)*, HBSP 695-061
- *Silicon Graphics, Inc (B)*, HBSP 697-038
- *Versioning: The Smart Way to Sell Information*, HBSP 4789
- *Lucent Technologies: Optical Networking Group*, HBSP 600-053

Readings:
- McConnell: *Rapid Development*, Chapter 10 – *Customer-Oriented Development*
- McConnell: *Rapid Development*, Chapter 14 – *Feature-Set Control*
- *The Manager’s Guide to Supply Chain Management*, HBSP BH044
- *Specifications: Do We Really Understand What They Mean*, HBSP BH041

Part III: Product Development


Topics addressed:
5. Phase-sequential and phase-overlapping models
6. Estimating the development schedule

* Guest speaker
7. Managing development risk
8. Dealing with uncertainty and change in product definition (requirements)
9. Measuring project status – ‘Are we there yet?’
10. Recovering from failure

Cases:
- *Chrysler and BMW: Tritec Engine Joint Venture*, HBSP 600-004
- *Applied Materials*, HBSP 692-078

Readings:
- McConnell: Rapid Development, Chapter 2 – *Rapid-Development Strategy*
- McConnell: Rapid Development, Chapter 3 – *Classic Mistakes*
- Smith and Reinertsen: Developing Products, Chapter 12 – *Managing Risk Proactively*
- McConnell: Rapid Development, Chapter 5 – *Risk Management*
- McConnell: Rapid Development, Chapter 7 – *Lifecycle Planning*
- McConnell: Rapid Development, Chapter 8 – *Estimation*
- McConnell: Rapid Development, Chapter 9 – *Scheduling*
- McConnell: Rapid Development, Chapter 16 – *Project Recovery*

**Part IV: Selecting Among Projects, Project Economic Value, The Value of Speed, Student Reports**

Class sessions: Nov 14, Nov 19, Nov 26, Nov 28, Dec 3, Dec 5, Dec 10

Topics addressed:
- 11. Product portfolio management
- 12. Incremental and radical innovation
- 13. Putting a price tag on time

Cases:
- *Investment Analysis and Lockheed Tristar*, HBSP 291-031
- *E Ink: Financing Growth*, HBSP 800252
- *Airbus A3XX: Developing the World’s Largest Commercial Jet (A)*, HBSP 201028

Readings:
- Market Selection and Direction: Role of Product Portfolio Planning, HBSP 581107
- Diversification, the Capital Asset Pricing Model, and the Cost of Equity Capital, HBSP 276183
- Smith and Reinertsen: Developing Products, Chapter 2 – *Putting a Price Tag on Time*
- Cooper: Product Leadership, Chapter 4 - *The Stage-Gate New Product Process*
- Cooper: Product Leadership, Chapter 5 - *Effective Gates and Gatekeeping – Picking the Winners*
- Cooper: Product Leadership, Chapter 6 - *Managing Your New Product Portfolio*

Supplemental Readings:
- *Note on the Boston Consulting Group Concept of Competitive Analysis and Corporate Strategy*, HBSP 175-175