University of Toronto

APS1023H: New Product Innovation

Instructor: Amir Rahim, a2rahim@hotmail.com
Office Hours: By appointment only.
Lectures: TBD
Webpage: Course details will be available in portal.

Course Description:
This course examines technical and organizational aspects of managing new products and process innovations. Topics include human creativity and problem solving, product design and development, product feasibility assessments, requirements engineering, managing research and development, project management, team communication, technology implementation, and innovation strategy.

Learning Objectives:
At the end of the course students should be able to:

1. Define, explain and utilize the characteristics of product and process design
2. Understand various industry wide processes and how to evaluate these techniques in a business context
3. Understand the organizational challenges relating to product/process innovation
4. Understand the significance of interdisciplinary forces like Intellectual Property, Marketing, Finance, Strategy and Manufacturing on new product/process development
5. Communicate the course objectives clearly through formal written reports and/or oral presentations

Recommended Text:
Ulrich, Karl T., Eppinger, Steven D., 2011, Product Development and Design – 5th ed., New York: McGraw-Hill.
Authors' site: http://www.ulrich-eppinger.net/
(The 4th edition may suffice but don't go older than that and do shop around for bargains)

Optional Readings:

Design Paradigms: Case Histories of Error and Judgment in Engineering by Henry Petroski

The Myths of Innovation by Scott Berkun

Topics Covered:

Chapter 1/2	Development Process and Organizations
Chapter 3	Opportunity Identification
Chapter 4	Product Planning
Chapter 5	Indentifying Customer Needs
Chapter 6	Product Specifications
Chapter 7	Concept Generation
Chapter 8	Concept Selection
Chapter 9	Concept Testing
Chapter 10	Product Architecture
Chapter 11	Industrial Design
Chapter 12	Design for Environment
Chapter 13	Design for Manufacturing
Chapter 14	Prototyping
Chapter 15	Robust Design
Chapter 16	Patents and Intellectual Property
Chapter 17	Product Development Economics
Chapter 18	Managing Projects

Evaluation:

Class participation	10%	
3-5 Assignments	60%	= 20+10+30
Midterm	15%	
Final Examination (in class)	15%	

Where Midterm mark + Final Exam mark must be greater than a 50%.

Late work will not be accepted. Unauthorized missed assignments and examinations will receive a grade of zero. Assignments will be due at the beginning of the class at their designated times (to be announced). Marked assignments/projects and midterms will be returned to students in class. Group work is acceptable only for group assignments; all students are expected to contribute equally.

Class Participation:
I want to encourage and promote discussions during the lectures. There will be class exercises and ample opportunity for everyone to participate.

Attendance will be taken during the classes.

Exam Schedule:

Midterm	Typically $5^{th}/6^{th}$ week of class
Final	Last day of class