Mechanical & Industrial Engineering
UNIVERSITY OF TORONTO
FACULTY OF APPLIED SCIENCE & ENGINEERING
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Course Outline – Summer 2014 Session

APS1017 – Supply Chain Management

Instructor: Chi-Guhn Lee
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Teaching Assistant To be announced

References/
Reading Material:
1. Chapters 4, 5 and 6 from Production and Operations Analysis, 4th, 5th or 6th Edition, Steven Nahmias, McGraw-Hill
2. "What is the right supply chain for your product" by Marshall Fisher at http://www.computingscience.nl/docs/vakken/scm/Fisher.pdf
3. "Supply Chain Coordination with Contracts" by Gerard Cachon at http://opim.wharton.upenn.edu/~cachon/pdf/scontracts3.pdf

Course Description: This course is to provide students with a framework to design and control supply chain systems. To achieve the goal, the course will cover key modules in supply chain. The students will be exposed to topics such as: product and supply chain matching, forecasting, inventory models, supply chain coordination via contract design, and the value of information.

Learning Outcomes: (At the end of the course) students should be able to:
1) Make inventory replenishment decisions with or without demand uncertainty at a single location as well as for the whole supply chain,
2) Supply chain design using network optimization, value of information, and product differentiation point, and
3) Contract design for supply chain coordination.

Evaluation Methods:

Assignment =	10 %
Exam 1 =	35 %
Exam 2 =	35 %
Team Project =	20 %
Total =	**100 %**

Examinations: Exam1 and 2 – Closed-book, closed-lecture-notes, one letter-size aid sheet allowed, calculator allowed, occurring in class on Fridays

Team Project: Each team may have up to three students and will have to submit a single report with no more than 30 pages. The report should include

1. Optimization models with justification
2. Solutions
3. Implementation to find the solutions
4. Discussion on the solutions

Course Topics:

Introduction
- Supply chain types and product types
- Key topics in supply chain management

Inventory management
- Deterministic models
- Stochastic models
- Multi-echelon inventory models

Supply Chain Design
- Network optimization (computational project)
- Transportation
- Value of information
- Product differentiation point

Supply chain coordination
- Contract design
- Value of information

Policies

1. Complaints regarding graded marks will **not** be accepted **after two days** from the distribution.

2. Late submission will not be accepted.