THE UNIVERSITY OF AUCKLAND
BUSINESS SCHOOL

Course Outline 2012
OPSMGT 780: SPECIAL TOPIC IN OPERATIONS MANAGEMENT
(15 POINTS)

Semester 2 (1125)

Course Prescription

Focuses on the issues fundamental to supply chain coordination. Impact of information asymmetry, limits of information sharing, incomplete contracts, strategic customers and other selected topics typically covered in separate subjects such as Contract Theory, Industrial Organization and Implementation Theory are studied in the supply chain management context. The course is taught from the quantitative perspective.

Programme and Course Advice:

Prerequisite: none

However, although no formal prerequisites are listed, students not familiar with basic topics covered in calculus such as derivatives and maximization may find that mastering the course material is very time-consuming. For the students taken ECON 212 and MATH 253 the course is not likely to present any technical challenges.

Goals of the Course

By the end of this course it is expected that a student will:

- understand the major factors affecting performance of a supply chain.
- know exactly how some of these factors limit supply chain performance.
- be able to analyse real-life problems and identify which of the major factors are relevant in a particular situation.
- be able to model and analyse typical problems supply chain management is dealing with in order to demonstrate the interplay of the major factors relevant in the problem.
- be able to propose specific mechanisms mitigating the effect of the factors adverse for supply chain performance.

Learning Outcomes

By the end of this course it is expected that a student will:

1. Have an advanced understanding of supply chain management as a managerial paradigm and its objective: supply chain coordination;
2. have an advanced understanding of the factors affecting supply chain performance such as private information, hidden action, competitiveness and commitment;
3. be able to develop the ability to analyse models proposed in the literature for studying different aspects of supply chain coordination;
4. be able to understand limitations of the models proposed in the literature;
5. be able to identify factors relevant for some of the typical problems supply chain management is dealing with and develop stylized models to understand their interplay; and

6. be able to propose specific mechanisms addressing typical issues in supply chain management.

Content Outline

- Weeks 1-2: Introduction to supply chain management. Information asymmetry.
- Weeks 2-3: Brief review of Game Theory. Types of games & solution concepts. Supply Chain Mis-coordination: Double Marginalization.
- Weeks 4-5: The Principal Agent Problem: adverse selection. The Revelation Principle.
- Weeks 5-6: The Principal Agent Problem: moral hazard. The Generalized Revelation Principle.
- Week 7: Signalling games.
- Week 8 Information disclosure and information sharing.
- Week 9 Information leakage.
- Week 10: Complete/incomplete/relational contracts.
- Week 11: Basics of the Implementation Theory.
- Week 12: Special topics, course review.

The more detail information regarding the course material and its sequencing can be found in the course schedule on CECIL. Due to different factors, the schedule is subject to changes. However, every effort will be made to minimize their number.

Learning and Teaching

This course is taught on the city campus and the anticipated class size is about 30 students. A variety of teaching approaches will be utilized including lectures, class discussions, assignments and exams. The class typically meets for three hours a week. Students are expected to spend at least six additional hours each week in reading and preparing for the class. Active participation, particularly questions, is essential for mastering the course material.

Teaching Staff: Dr Valery Pavlov

Tel: 373 7599 ext. 88726 (please, note the voice mail is unattended)
Room 424 Level 4 OGGB
Email: v.pavlov@auckland.ac.nz
Office hours: several options will be offered to students to choose from during the first week of classes.

Learning Resources

Students are required to complete the prescribed readings prior to each class session and be fully prepared to contribute to an in-depth discussion.

No textbook is required in the course. The primary sources of readings will be the lecture notes, available on CECIL, and the original research articles, available from the library. The required readings are indicated on the course schedule on CECIL.

Students may find the following texts helpful both for referencing and for reading:

1. "The Theory of Incentives: The Principal-Agent Model" by J.J. Laffont & D. Martimort. Princeton University Press (2001).
2. "Microeconomic Theory" A. Mas-Colell, M. Whinston and J. Green. Oxford University Press (1995).

Students not familiar with Game Theory are recommended to refer to one of the great variety of excellent texts used in undergraduate courses, such as

- "Strategy: An Introduction to Game Theory" by J. Watson (2002).

Students feeling lack of mathematical background are advised to refer to

- "Fundamental Methods of Mathematical Economics" by A. Chiang (1984).

Assessment

Ten* individual HW assignments (5% each)	40%	
Ten* in-class quizzes (1% each)	10%	
Mid-semester test	15%	
Final examination (3 hours)	35%	Covers the entire course
Total	100%	

Learning Outcome	In-class quizzes	HW Assignments	Mid-semester test	Final ** Examination
1	**X**	**X**	**X**	**X**
2	**X**	**X**	**X**	**X**
3	**X**	**X**	**X**	**X**
4	**X**	**X**	**X**	**X**
5	**X**	**X**	**X**	**X**
6	**X**	**X**	**X**	**X**

* A smaller number may be offered but the allocated weight remains the same

** There is no minimum mark required to get on the final exam in order to pass the course