

Course Outline  
OPSMGT 766: Fundamentals of Supply Chain Coordination  
(15 points)  
Semester 1 2018

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### 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.

### Prerequisites, restrictions and advice

*Prerequisite: none*

If you are not familiar with Game Theory, please access the relevant materials on Canvas before the first lecture.

### Goals of the course

The course equips students with skills necessary to identify situations when a supply chain may fail and to come up with appropriate actions to ensure supply chain coordination. Students will learn tools to analyse incentive conflicts between firms in a supply chain.

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

- understand the major factors affecting performance of a supply chain;
- have knowledge and skills to read and understand contemporary research papers using analytical models for studying supply chains in order to conduct research, deal with real life problems, and build expertise on their own;
- have an advanced understanding of the factors affecting supply chain performance such as private information, hidden action, competitiveness and commitment;
- be able to analyse real-life problems and identify which of the major factors known to hinder performance a supply chain are the most relevant in a particular situation;
- be able to model and analyse typical problems in supply chain management and demonstrate the interplay of the major factors relevant in the problem;
- be able to propose specific mechanisms allowing for the factors specific to a given real-life situation.

## Course learning outcomes

By the end of this course, you should be able to:

Course Learning outcome	Related Graduate Profile Capability*	Related Assessment
1. Identify practical situations when supply chain coordination is required	2. CRITICAL THINKING	Final Exam Test
2. Analyse models proposed in the literature for studying different aspects of supply chain coordination	1. KNOWLEDGE AND PRACTICE	Assignments Final Exam
3. Explain limitations of the models proposed in the literature	2. CRITICAL THINKING	Assignments
4. Identify factors relevant for some of the typical problems in supply chain coordination and develop stylized models to understand their interplay	2. CRITICAL THINKING 3. SOLUTION SEEKING	Assignments
5. Propose specific mechanisms coordinating supply chain in a particular situation	3. SOLUTION SEEKING	Final Exam Test

\* See your graduate profile in the appendix of this course outline

## Weekly content outline

Week	Topic	Relevant learning resources/activities	Assessment due this week
Week 1	Introduction to supply chain management. Common causes of failure in supply chain.	Beer game in class.	
Week 2	Non-cooperative game theory: basic concepts and examples. Different types of competition. Sequential games. Application to supply chain coordination.	Reading assigned.	
Week 3	Basic principles of coordination. Newsvendor model: ways to mitigate double marginalisation.		Assignment 1
Week 4	Cooperative game theory: basic concepts and examples.		Assignment 2

Week 5	Developing a menu of contracts. Revelation principle.	Reading assigned.	
Week 6	Wrap-up and mid-term test.		Test
Week 7	Unknown quality of supplier products: how to select the right supplier.	Reading assigned.	
Week 8	Suppliers help to develop a new product: coordinating their efforts.		Assignment 4
Week 9	Supplier collusion at an auction. Bargaining theory: who gets a larger share?		Assignment 5
Week 10	Biform games: first compete, then cooperate.	Reading assigned.	
Week 11	Renegotiation in supply chain: potential risks.	Reading assigned.	
Week 12	Procurement auctions. Wrap-up.		Assignment 6

Note that topics covered in weeks 8-12 are based on recent research papers and their choice is subject to changes based on the students' background and research interests.

### Learning and teaching

This course is taught on the city campus and the anticipated class size is about 15 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. Preparation for active participation in the discussions of the assigned articles is critical for mastering the course material.

The approximate study load for this course is 120 hours learning over a single semester including:

- 36 contact hours
- 36 hours preparatory reading
- 48 hours of self-study

### Teaching staff

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Role             Lecturer  
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### 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.

The primary sources of the readings are books and articles (available from the university library and/or online). The list of readings will be provided on Canvas.

## Assessment information

Assessment Task	Weight %	Related CLO	Group/individual	Submission
<b>SIX (6) ASSIGNMENTS</b>	30%	CLO2, CLO3, CLO4	Individual	Canvas
<b>TEST</b>	20%	CLO1, CLO5	Individual	In class
<b>FINAL EXAM</b>	50 %	CLO1, CLO2, CLO5	Individual	Exam venue

*Description of assessment tasks (more details are available in Canvas)*

### **Six (6) Assignments**

These are individual homework assignments, each worth 5%. Each assignment covers a particular topic of the course. The deadline is the beginning of the lecture. Both electronic and paper submissions are accepted.

### **Test**

The mid-semester test takes place during normal lecture time in week 6. The material from the first half of the course is tested. The students will have access to several practice mid-semester tests. The test duration is two hours.

### **Final Exam**

The final exam lasts 3 hours and covers all the topics discussed in class. It is an open-book exam and the calculators are allowed.

### *Pass requirements*

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

## Inclusive learning

Students are urged to discuss privately any impairment-related requirements face-to-face and/or in written form with the course convenor/lecturer and/or tutor.

## Academic integrity

The University of Auckland will not tolerate cheating, or assisting others to cheat, and views cheating in coursework as a serious academic offence. The work that a student submits for grading must be the student's own work, reflecting his or her learning. Where work from other sources is used, it must be properly acknowledged and referenced. This requirement also applies to sources on the world-wide web. A student's assessed work may be reviewed against electronic source material using computerised detection to provide an electronic version of their work for computerised review.

## Student feedback

We regularly seek feedback from students in order to shape and improve this and all courses on the programme. Students will be asked to complete formative fast feedback early in the semester, and course and teaching evaluations at the end of the course. In addition, each course will seek volunteers to serve as class reps.

## In the event of an unexpected disruption

We undertake to maintain the continuity and standard of teaching and learning in all your courses throughout the year. If there are unexpected disruptions, the University has contingency plans to ensure that access to your course continues and your assessment is fair, and not compromised. Some adjustments may need to be made in emergencies. In the event of a disruption, the University and your course coordinators will make every effort to provide you with up to date information via Canvas and the University website.

## Appendix: Bachelor of Commerce Graduate Profile

Graduate Profile Capability
<b>KNOWLEDGE AND PRACTICE</b> Graduates will be able to demonstrate global awareness and specialist knowledge in one or more fields within the discipline of Business and Economics
<b>CRITICAL THINKING</b> Graduate will be able to analyse and critique theory and practice within and across their disciplines
<b>SOLUTION SEEKING</b> Graduates will be able to recognise and frame a problem and use research skills, creativity and persistence to identify innovative solutions
<b>COMMUNICATION AND ENGAGEMENT</b> Graduates will be able to collaborate with others, demonstrate effective written and oral communication, use communication technologies and communicate across cultures
<b>INDEPENDENCE AND INTEGRITY</b> Graduates will be able to respond professionally and ethically in complex and ambiguous business situations

## **SOCIAL AND ENVIRONMENTAL RESPONSIBILITY**

Graduates will embrace ethical obligations towards sustainability, whilst displaying constructive approaches to diversity and recognising the significance of the Treaty of Waitangi