

School of Management

MGMT 206 SYSTEMS THINKING AND DECISION MAKING

Trimester 1, 2016

COURSE OUTLINE

Prescription

An examination of various approaches to understanding and improving managerial decision making, challenging students to think systemically about complex issues that confront managers when managing change, resources or processes, and in general, managing situations where events unfold over time.

Course Learning Objectives

Objective	By the end of this course, students should be able to:	Addressed via
CLO1	Demonstrate an understanding of relevant systems thinking and problem-solving concepts and frameworks	Assignment 1 & 2, Tutorials and Exam
CLO2	Apply different systems thinking and problem-solving frameworks to describe and develop an understanding of problematic decision situations and issues (both strategic and operational) in a variety of managerial and organisational contexts	Assignment 1 & 2, Tutorials and Exam
CLO3	Demonstrate critical and creative thinking skills through selection and use of a range of systems thinking and problem solving frameworks to develop solutions to problematic situations	Assignment 1 & 2, Lectures, Tutorials and Exam
CLO4	Demonstrate communications skills using both written and diagrammatic representations to convey understanding developed through the use of systems thinking and problem-solving frameworks	Assignments 1 & 2, Tutorials and Exam
CLO5	Demonstrate an ability to work constructively in groups to develop systems thinking, problem-solving and decision-making skills	Assignment 1 and Tutorials

Course Content

Often decisions are made in a fragmented way, without regard to the effects on other parts of the organisation, resulting in impaired performance or unexpected outcomes. The course provides an introduction to a range of relevant systems-based decision making concepts and frameworks to address this issue, and provides an understanding of how everyday situations can be better managed. A range of typical managerial issues are explored, showing how they can be approached differently using decision-making approaches underpinned by systems thinking such that performance as a whole is improved.

The course is an applications-oriented course and will challenge you to think critically and creatively about typical issues that confront managers when managing change, managing resources, managing projects, and managing uncertainty and variability. You will learn new ways of communicating with others regarding such issues.

Each of the lectures covers a different modelling tool or aspect of a systems-thinking method, and will build on preceding weeks' material. Most classes will include in-class worked examples **in addition to the**

lecture slides that will illustrate what you need to do for your tutorial preparation. **Tutorials** then provide an opportunity to practise using the tools and work with other students on tutorial questions and group projects. Lecture material and tutorials are directly focused on developing skills and understanding needed for your assessments.

Trimester Dates

Teaching Period: Monday 29th February – Friday 3rd June

Study Period: Monday 6th June – Thursday 9th June

Examination Period: Friday 10th June – Wednesday 29th June (inclusive)

Withdrawal from Course

1. Your fees will be refunded if you withdraw from this course on or before Friday 11th March 2016.
2. The standard last date for withdrawal from this course is Friday 13th May 2016. After this date, students forced to withdraw by circumstances beyond their control must apply for permission on an 'Application for Associate Dean's Permission to Withdraw Late' including supporting documentation. The application form is available from either of the Faculty's Student Customer Service Desks or [online](#).

Names and Contact Details

COURSE COORDINATOR

Professor Vicky Mabin

Room: RH 920, Rutherford House

Phone: 463 5140

Email: vicky.mabin@vuw.ac.nz

ACADEMIC STAFF

A/Prof Bob Cavana

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Office hours will vary for each lecturer, so please email for an appointment

UNDERGRADUATE PROGRAMME MANAGER ADMINISTRATOR

Garry Tansley

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Misa Ito

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Phone: 463 5397

Email: misa.ito@vuw.ac.nz

Class Times and Room Numbers

Lectures: Mondays 3:30 – 5:30 in RH LT1

Tutorials: One 50 minute tutorial per week, over 8 weeks.

Course Delivery

The course consists of 12 two-hour lectures, 8 tutorials, group work, plus your own study time.

We expect you to attend all lectures and tutorials offered. Lectures will start in week 1, tutorials in week 2. Lectures are run weekly during term time. Tutorials are offered on the weeks shown in the course schedule.

We expect you to read the readings and resources provided, go over examples covered in lectures, and try applying the methods yourself to specific examples before coming to tutorials. You will need to provide a hand-in of some sort each time (or evidence of your preparation for each tutorial). This way, you will work

out which bits are easy/straightforward for you and what your own sticking points are, so that you can make informed contributions to tutorial discussions and ask relevant questions of your tutor.

Readings

Key texts for this course are:

- K. E. Maani and R. Y. Cavana, *Introduction to Systems Thinking*, 2010, Pearson NZ
- Plus either or both the following novels:
- E. M. Goldratt and J. Cox, *The Goal*, 2nd revised edition, 1992 or later editions
 - A. Knight. *Pride and Joy*. 2014.

Other readings and resources will be provided during the course via Blackboard.

*For students planning to advance onto MGMT 315 'Systems Thinking and Modelling' in 2016, we recommend that, instead of *Introduction to Systems Thinking*, you purchase a copy of:
Maani, K. E., & Cavana, R.Y. (2007). *Systems Thinking, Systems Dynamics: Managing Change and Complexity*. Auckland: Pearson Education (NZ) Ltd.

Mandatory course requirements

In addition to achieving an overall pass mark of at least 50%, students must:

- a. Attend at least 5 out of 8 tutorials so that they have the opportunity to develop oral communication and teamwork skills using systems thinking and problem solving frameworks, CLO 5;
- b. Obtain at least 40% in the exam, in order to demonstrate that they have achieved the CLO's 1, 2, 3, and 4 independently of any external assistance.

Note: Failure to meet mandatory requirements does not prevent a student completing other pieces of assessment, including sitting the final examination.

If you cannot complete an assignment or sit a test or examination, refer to www.victoria.ac.nz/home/study/exams-and-assessments/aegrotat

If you believe that exceptional circumstances may prevent you from meeting the mandatory course requirements, contact the Course Coordinator for advice as soon as possible.

If you cannot complete an assignment or sit a test or examination, refer to www.victoria.ac.nz/home/study/exams-and-assessments/aegrotat

Expected Workload

A total of 150 hours of work is expected from students in this course. That consists of 32 hours of classes and tutorials, 8 hours per week outside classes during teaching weeks spent reading, studying, preparing for tutorials and writing assignments (96 hours), and a further 22 hours preparing and revising during mid-trimester break and exam preparation. This includes about 10-15 hours outside classes for group meetings for Assignment 1.

Assessment

The Assessment Handbook will apply to all VUW courses: see

<http://www.victoria.ac.nz/documents/policy/staff-policy/assessment-handbook.pdf>.

The assessment for this course comprises two Systems Thinking/Decision Making assignments: the first assignment is a group assignment, focussing on applying Causal Loop modelling to an issue, organisation, operation or process of your choice; the second focusses on applying the Theory of Constraints systems thinking tools.

The group systems thinking assignment will involve working in a small group of 2 to 5 students. This assignment will involve undertaking a causal loop modelling analysis to assist with the examination of a relevant problematic, managerial or policy issue. This project will involve preparing a group management report.

All members of the group are expected to contribute to the group report. On the cover sheet of the report, the members of the group should be identified and a statement made that either all members have on balance contributed equally, or the relative contributions of the members stated. All members of the group will receive the same mark unless their contributions are unequal, in which case the lecturer will make an equitable adjustment.

A marking guide for this assignment will be provided on Blackboard.

Assessment also includes the preparation and participation at tutorials, and a final examination.

Each piece of assessment involves a combination of the Course Learning Objectives as detailed below.

1 Tutorial Preparation and Participation 10 marks

Participation in tutorials is crucial to the learning process on this course. This is a participation mark, not an attendance mark. The grade will depend on the student's preparation for, and then the extent and quality of the contribution to tutorial class exercises and discussions. Students will be expected to provide a one-page summary of their work to their tutor at the start of the tutorial, or bring along their completed workbook when asked to. You should be prepared to share an example with the group, and work constructively with others to enhance the learning of all participants. This is reflected in the tutorial marking criteria/scale.

To maximise your tutorial marks, you must attend at least five (5) of the tutorials offered. The tutorials are held as shown in the schedule. Your tutorial mark will be based on your best 5 marks. Attending fewer than 5 tutorials will reduce your tutorial mark accordingly.

You will be assessed on your ability to develop your systems thinking competencies through preparation for and participation in tutorials. The demonstrated quality of your **written preparation** and participation for your best five (5) tutorials will guide the outcome of your preparation and participation marks. The assessment of preparation and participation will be based on the following scale:

Tutorial Preparation and Participation	Mark range
No or minimal preparation and participation	0-2
Limited preparation, and little evidence of understanding, interest or ability to contribute	3-4
Adequate preparation and contribution: provides examples, ideas, participates in activities, showing interest and basic understanding	5-6
Evidence of good preparation, well worked examples and critical thinking, shows a lot of interest, participates actively and constructively	7-8
Excellent worked examples, links theory and practice, works very well with others, helps others to 'see' and improve the situation	9-10

Tutorial activities contribute to Course Learning Objectives 1, 2, 3, 4, and 5.

2 Assignments

There will be **two (2) Assignments Reports – totalling 40 marks**

Assignment 1 (Group Assignment):

Causal Loop Modelling

15 marks

Due Noon Tuesday 12 April , in Box 25, first floor Railway West Wing

Assignment 2 (Individual Assignment):

Theory of Constraints Modelling

25 marks

Due Noon Monday 23 May in Box 25, first floor Railway West Wing

For Assignments 1 & 2, you will be asked to present a report setting out your description of a problematic situation using systems diagrams and narrative, showing how the systems representation may lead to appropriate intervention. These assignments require demonstration of insight developed from the use of systems thinking, and the benefits of using a systems approach.

Assignment 1 is generally around 2500 words max and assignment 2 around 10 pages maximum. Full instructions and marking guidelines for assignments 1 and 2 will be made available on blackboard.

The Assignments contribute to Course Learning Objectives 1, 2, 3, and 4. Assignment 1, the group project, contributes to CLO 5.

3 Examination

50 marks

The exam is worth 50% of the marks available for this course. The exam will be closed book and will be 3 hours in duration. As a mandatory course requirement, students are required to obtain at least 40% in the exam.

Preparation for the Examination contributes to Course Learning Objectives 1, 2, 3, and 4.

Examinations

Students who enrol in courses with examinations are obliged to attend an examination at the University at any time during the formal examination period. The final examination for this course will be scheduled at some time during the following period:

Friday 10th June – Wednesday 29th June (inclusive)

Late assignments

Late assignments are to be handed in at **Level 10 Reception, RH 1022** during Reception Desk hours, **9am till 5pm Monday to Friday during term time**. An Administrator or Duty Receptionist will stamp the assignment with the date and time. Late assignments that do not have **the time and date and signed by** the Administrator or Duty Receptionist, will incur late penalties from the time the Administrator receives it. Assignments left on the Reception Counter, or slid under the door of the Reception office will also incur penalties from the time and date they are recovered. Note that there is no provision to accept assignments on weekends or public holidays.

Penalties – for Lateness

- (i) In fairness to other students, work submitted after any deadline will incur a penalty for lateness. **The penalty is 10% of the marks available (marks available means what the assignment is worth i.e. 20% or 20 marks) for an assignment submitted after the due time on the due date for each part day or day late.** (for example if an assignment is out of 20 and the assignment receives 50% then one day late means the mark will be out of 18 and the student will receive 50% of 18). **Closed University days, Saturdays, Sundays and public holidays** will be included when counting the number of days late. An assignment late day begins from the time the assignment is due. Assignments received **more than 7 days after the due date** will not be accepted.
- (ii) Course Outlines provide a signal to students of forthcoming workload, dates of submission etc, and thus student study plans should take account of course requirements across all courses. Consequently, workload issues related to other courses and employment will not be accepted as reason for dispensation from mandatory requirements or waiver of penalties. **Extensions** to submission deadlines for any assigned work will only be granted in **exceptional circumstances**.
- (iii) Students who are unable to comply with any of the mandatory requirements should make a written application for an extension to the due date for submission of assigned work or for waiver of a penalty,

in advance, to the **Undergraduate Programme Manager for the 1st assignment and the Course Coordinator for the 2nd assignment**, providing documentary evidence of the reasons of their circumstances.

- (iv) All such applications must be made **before** the deadline and be accompanied by documentary evidence, e.g. a medical certificate, or counsellor's report clearly stating the degree of impairment, and the dates the illness or event prevented you from undertaking your academic studies. This can be applied retrospectively.
- (v) In the event of unusual or unforeseeable circumstances (e.g. serious illness, family bereavement or other exceptional events), that precludes an application in advance, students should make contact with the **Undergraduate Programme Manager for the 1st assignment and the Course Coordinator for the 2nd assignment** as soon as possible, and make application for waiver of a penalty as soon as practicable.
- (vi) Word limits should be adhered to, especially so when they provide a guide to limiting the student's coverage of a topic and the intended assignment work load. You are strongly advised to adhere to the word limit so as to keep your workload at a manageable level. Any material that is above the word limit may not be taken into account by the marker. Your marker will simply stop at the maximum words for the assignment and you will receive the appropriate grade.

Remarking

Application for remarks must be made within 14 days after the assignments or marks are made available.

Every attempt is made to ensure that the marking is consistent across tutors and fair to students. Students may ask for their written work to be remarked. A different tutor will do the remarking and provide comments.

For marks: If the mark differs by 10% or less the two marks are averaged. If it exceeds 10% then it is independently marked by a third marker and the average of the two closest marks is taken.

For grades: If the grade differs by one grade then the highest grade is taken. If the grade differs by more than one grade then the assignment is marked by a third marker and the average grade is taken. Experience from previous years is that almost all remarks are within 10% or one grade. Occasionally there is a significant shift in the mark or grade.

To apply for a remark, complete the request for re-examination of assessed work form (Annex B) stating which sections (criteria listed in the mark sheet) you wish re-examined. You must provide academic reasons on why you think the mark does not, in your view, fairly reflect the quality of your work. Your assignment will only be reconsidered on the points you raised. Complete remarks will not be undertaken. Hand this with your assignment into the following place:

- Pipitea Campus – the Reception Desk on Level 10 Rutherford House where your assignment will have the **time, date and signature** noted on the front cover by the person receiving it.

Allow a minimum of 5 days for remarks to be completed.

Group Work

The first assignment is a group project. You are expected to work in small groups of 2 to 5 students on this assignment, which means working together to decide on an organisation to study, developing an understanding of the system under study, and developing the analysis. This is way more than using a stapler to combine your individual efforts, so don't just assign different sections to individuals to do independently! You will need to divide the work evenly and also work together as a group. Your diagrams should be discussed and agreed on by the group preferably in person, though you can obviously choose one person to make them presentable. To ensure logical connections between the parts of the assignment will require that you work together on the various parts: you will need to allow 10-15 hours for group meetings outside class and tutorial time.

Resources are available at <http://www.victoria.ac.nz/vbs/teaching/group-work> to support you in working in groups, to overcome the issues that often arise. We encourage you to make use of them, to improve your performance when working as a group – teamwork is a skill valued highly in the workplace.

While we encourage working and studying together in groups, all other assessment items are strictly individual. Collaboration on **individual** assessment items should be limited to general discussion as to how

one might interpret the nature of the assigned question, and testing out ideas with each other. You should not work together to formulate a common response. Do not loan out your completed individual assignments. Assignments showing evidence of such actions will be investigated for plagiarism.

Use of Turnitin

Student work provided for assessment in this course may be checked for academic integrity by the electronic search engine <http://www.turnitin.com>. Turnitin is an on-line plagiarism prevention tool which compares submitted work with a very large database of existing material. At the discretion of the Head of School, handwritten work may be copy-typed by the School and submitted to Turnitin. A copy of submitted materials will be retained on behalf of the University for detection of future plagiarism, but access to the full text of submissions will not be made available to any other party. For information on the definitions of plagiarism and how to avoid it, see the University policy on Academic Integrity at <http://www.victoria.ac.nz/vbs/studenthelp/general-course-information>

Materials and Equipment

PowerPoint slides will be available on Blackboard, but these are not sufficient to pass the course. You need to come to class to annotate the slides and make your own notes, especially of the worked examples. Bring pencils/coloured pens and paper to all sessions, as you will need to draw diagrams in class, and there will be practical in-class exercises. These are all carefully designed to help you understand the concepts covered, linking theory and practice.

Additional readings, resource material, and links to resources will also be made available via Blackboard. Student workbooks will be provided on Blackboard for the topics starting in Week 5/6. Use them well!

Electronic devices such as computers will not be permitted in the examination. Electronic calculators with memories cleared are permitted.

Student feedback

The course has changed this year in some significant ways. Offering the course twice in a year allows greater student flexibility in course timetabling. The smaller class size will facilitate more interaction in class. Topic coverage has changed a little from the last two years due to changes in teaching staff.

Student feedback on University courses may be found at www.cad.vuw.ac.nz/feedback/feedback_display.php.

Class Representative

A class representative will be elected in the first class, and that person's name and contact details made available to VUWSA, the course coordinator and the class. The class representative provides a communication channel to liaise with the course coordinator on behalf of students.

Communication of Additional Information

Additional information or information on changes will be conveyed to students in class and via Blackboard. Announcements will be made via Blackboard which uses your student email addresses. If you use another email address, ensure you have set up automatic forwarding from your student email address. You should also check Blackboard regularly and at least once per week.

Contacting academic staff

When emailing staff, please put MGMT 206 and the nature of the query in the header, along with your name/ID. Be aware that emails from non-VUW addresses may get rejected as spam/junk mail.

Eg MGMT206 Week 4 tutorial example-Jo Bloggs ID 12345678

Link to general information

For general information about course-related matters, go to

<http://www.victoria.ac.nz/vbs/studenthelp/general-course-information>

Note to Students

Your assessed work may also be used for quality assurance purposes, such as to assess the level of achievement of learning objectives as required for accreditation and academic audit. The findings may be used to inform changes aimed at improving the quality of VBS programmes. All material used for such processes will be treated as confidential, and the outcome will not affect your grade for the course.

COURSE SCHEDULE - T1, 2016

Wee k	Date	Topic	Tutorials	Assignments
1	29 Feb	Course Overview Introduction to Systems Thinking	No Tutorials	
2	7 Mar	Problem Structuring	<i>Tutorial 1</i> Problem Structuring	
3	14 Mar	Causal Loop Modelling	<i>Tutorial 2</i> Causal Loop Modelling	
4	21 Mar	Group Model Building	<i>Tutorial 3</i> Analysing CLDs	
Easter break – 1 week				
5	4 Apr	Managing Conflict and Dilemmas using TOC's Evaporating Clouds	<i>Tutorial 4</i> Evaporating Clouds	
6	11 Apr	Designing Robust Change	<i>No tutorial</i>	Group Asst due Noon Tuesday 12 April
7	18 Apr	Implementing Change	<i>Tutorial 5</i> Negative Branches, Prerequisite Trees and Goal trees	
Second break – 1 week (Finish Reading <i>The Goal</i> and/or <i>Pride and Joy</i>)				
8	2 May	Theory of Constraints for managing systems (TOC) – Goals and constraints	<i>No tutorials</i>	
9	9 May	Managing operations using TOC's Five focusing steps	<i>Tutorial 6</i> Applying TOC's 5FS and Buffer Management	
10	16 May	Managing variability in operations and projects	<i>Tutorial 7</i> Critical Path for planning projects	
11	23 May	Managing Projects using Critical Chain Project Management	<i>Tutorial 8</i> Critical Chain for managing projects	TOC assignment due Noon Monday 23 May
12	30 May	Course Review, Revision and Exam Briefing		



School of Management

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Assignment 1: Group Cover Sheet

Name(s): _____ Student ID: _____ (1)

Name(s): _____ Student ID: _____ (2)

Name(s): _____ Student ID: _____ (3)

Name(s): _____ Student ID: _____ (4)

Name(s): _____ Student ID: _____ (5)

Tutor's Name: _____

Tutorial Number: _____

Tutorial Day: _____

Tutorial Time: _____

Date Due: _____

Date Submitted: _____

I/We have read and understood the university policy on Academic Integrity and Plagiarism. I declare this assignment is free from plagiarism.

Signed:

(1) _____ (2) _____

(3) _____ (4) _____

(5) _____

We agree to an equal share of the marks awarded Yes / No (Please circle)

If **No**, please attach a letter detailing your preferred split of marks, **signed by all group members**.

Please attach a copy of the note authorising your extension.

Date extension applied for: _____

Extension granted until: _____

Extension granted by: _____



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Assignment 2 Cover Sheet

Name(s): _____ Student ID: _____

Tutor's Name: _____

Tutorial Number: _____

Tutorial Day: _____

Tutorial Time: _____

Date Due: _____

Date Submitted: _____

I/We have read and understood the university policy on Academic Integrity and Plagiarism. I declare this assignment is free from plagiarism.

Signed: _____

Extension of the due date (*if applicable*)

Please attach a copy of the note authorising your extension.

Date extension applied for: _____

Extension granted until: _____

Extension granted by: _____



School of Management

MGMT 206

Request for re-examination of assessed work

	Assessment affected <i>e.g. Individual Assignment, Group Assignment</i>	
Student ID	Name <i>As it appears in your enrolment</i>	Tutorial No/Tutor's name
Contact Details	<i>Phone</i> _____	
	<i>Email</i> _____	

Specify which section (specified in the mark sheet) you wish to be re-examined

Note: requests to re-examine "all" sections will not be considered.

Clearly state why you believe each of these sections should be re-examined:

Note: "I think it is worth more," is insufficient.

.....
Signature

.....
Date