



Victoria Management School

MMBA 508
PROBLEM SOLVING AND DECISION ANALYSIS

Trimester 1 2005

COURSE OUTLINE

CONTACT DETAILS

Lecturing Staff

Associate Professor Vicky Mabin

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If you have any queries, you are welcome to contact me. If I'm not in my office, I suggest you send me an email. Or you may email or phone ahead to arrange a time.

MBA Programme Administrator

Charlean Born

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CLASS TIMES AND ROOM NUMBERS

The class will meet weekly in **RLWY 315** on **Tuesdays** from **10.30 till 12.20**.

There will be an examination in the mid-year examination period, between 3 and 18 June.

COURSE OBJECTIVES

Purpose

Making decisions is a fundamental managerial task. Becoming a good decision maker is like becoming a good athlete: you need to examine the process of decision-making systematically, decide on better processes, and practise those improved methods. This course critically examines alternative approaches to managerial decision-making, allowing you to develop insights and understanding about the nature of decision making, and common errors associated with each part. We will explore a range of models to help you better understand, and improve, your own decision-making processes.

Course Objectives

The course has several objectives:

- Understand the variety of ways in which decisions are and can be made
- Understand the roles of intuition and analysis in decision making
- Exploring ways of approaching a range of typical business decision problems
- Improving your competence in structuring decision problems using models
- Developing analytical skills in data handling and interpretation
- Understand the role and impact of risk, uncertainty, ambiguity, preferences, judgement
- Developing familiarity with typical decision trade-offs and evaluation techniques
- Familiarising you with the use of computer-aided methods in decision making
- Developing your own ability to devise robust strategies and make balanced decisions.

COURSE CONTENT

Session content will vary, including discussion of problematic situations and how they may be approached, using lectures, class discussions, exercises, games and computer demonstrations. A schedule of topics considered in the course is attached and includes the dates on which they will be covered in class. Session outlines will be provided at least one week in advance. Optional tutorials/computer workshops can be arranged if desired.

This course will require approximately 8 hours per week, in addition to class time to complete the readings and assignments. However this is only a guide: the readings and assignments usually take longer than expected, and unexpected problems may occur, so you are advised to start applying the methods early to facilitate the on-time completion of assignments.

READINGS

Readings and cases will be made available at least a week in advance. Most sessions will draw on published literature as well as real cases, where possible New Zealand examples. Several books are drawn on, and while not required texts, it would be preferable for you to have access to these books at the appropriate times in the course.

In particular, I recommend:

Winning Decisions	JE Russo and PJH Schoemaker	Piatkus, 2003
OR: Decision Traps	by same authors	Fireside, 1989
Judgement in Managerial Decision-Making	- M Bazerman	Wiley, 1998 (4 th edn)
** The Goal (2nd Rev Edn)	- EM Goldratt and J Cox	North River Press 1992
** It's Not Luck	- E M Goldratt	North River Press 1994
Analytical Decision Making	- D Targett	Pitman, 1996
Insight.xla Business Analysis Software for MS Excel	- S Savage	Duxbury Press 1998

available from Victoria Book Centre.

** available from VMS

Copies of selected chapters and published articles, as well as lecture notes and other class materials, will be handed out in class.

MATERIALS AND EQUIPMENT

Access to a computer is expected, as all assignments should be typed, printed and bound/stapled, and some set work will need you to use spreadsheet or specialist computer software. Electronic calculators will be allowed in the examination room, but computers and communication devices are not allowed.

ASSESSMENT REQUIREMENTS

The course will be assessed as follows:

In-term work:

Assignment 1: Framing and reframing	20%
Assignment 2: TOC assignment (group)	30%
Mid Year Examination (Open book)	<u>50%</u>
Total	100%

Course Contributions and Assignments

1. Framing and Reframing assignment – due 15 March 2005

Length Guide: 10 pages max (see note on length guidelines below)

2. TOC Assignment - due 17 May 2005

Length guide: 15 - 20 pages (see below on length guidelines)

3. Examination

There will be an examination in the mid-year examination period. Electronic calculators will be allowed in the examination room, but computers and communication devices are not allowed.

4. Contributions to Class Discussion

As is the case with most post-graduate courses, course members will have plenty to learn from each other as well as the course director, and thoughtful contributions are welcomed in class. Please read materials/case studies prior to the class, and attempt to analyse the problem situation, the method being explored, and integrate those with your own experiences, so that you can make a valuable contribution to the discussion.

The two assignments are designed to allow you to develop your understanding of the methods explored in class, by applying them to real life problems. In each case, you will need to demonstrate a thorough understanding of the theoretical underpinnings of the method(s), as well as demonstrating its/their application to a real problem. You will be encouraged wherever possible to draw on your own experience or contacts when choosing a problem to use to demonstrate the application of the techniques.

The mid year examination will require you to demonstrate a sound knowledge of the material and an ability to apply the methods taught on the course.

MANDATORY COURSE REQUIREMENTS

To meet Mandatory Course Requirements, you must

- Submit both assignments by their due dates or within approved extensions;
- Obtain at least 30% on each of the two assignments; and
- Obtain at least 40% for in-term work.

If you fail to meet the Mandatory Course Requirements, you will receive an ungraded Q (fail) grade.

In order to pass the course, you must obtain at least 40% in the final exam and 50% marks overall.

PENALTIES

Penalties for lateness

In keeping with standards of professionalism appropriate to an MBA degree, it is expected that deadlines will be honoured. In fairness to students who complete work on time, work submitted after the due date/time will incur penalties for lateness. The penalty is up to 2% of the report's grade per day (or part thereof) late. Unusual or unforeseeable circumstances (e.g., serious illness, family bereavement) may lead to a waiver of this penalty but need to be discussed with the course director as soon as possible (prior to the due date when feasible).

Length Guidelines

No word limits are imposed on your assignments for this course, though length guidelines are given for each assignment. The length guides suggested are designed to incorporate a succinct statement of the problem situation; a brief description of the method(s) being applied; the demonstration of the application, including diagrams or tables; discussion of the findings, conclusion and recommendations; reflections/critique of the usefulness of the approach; and a full list of references and source material. You may allow additional pages for title pages, and appendices as appropriate. A style of writing suitable for business reports is normally required, though for the first assignment, you may wish to adopt a more personal style. Significant departures from an economical style or inattention to spelling, grammar, punctuation, formatting, ... will reduce the marks awarded to the report by up to 10% of the original mark.

COMMUNICATION OF ADDITIONAL INFORMATION

The MBA 508 email distribution list and Blackboard will be used for additional information, and students are advised to ensure that the MBA Programme Administrator has an up-to-date email address. Important notices and exam timetables are posted on Blackboard.

GENERAL UNIVERSITY POLICIES AND STATUTES

Students should familiarise themselves with the University's policies and statutes, particularly those regarding assessment and course of study requirements, and formal academic grievance procedures.

Student Conduct and Staff Conduct

The Statute on Student Conduct together with the Policy on Staff Conduct ensure that members of the University community are able to work, learn, study and participate in the academic and social aspects of the University's life in an atmosphere of safety and respect. The Statute on Student Conduct contains information on what conduct is prohibited and what steps can be taken if there is a complaint. For queries about complaint procedures under the Statute on Student Conduct, contact the Facilitator and Disputes Advisor. This Statute is available in the Faculty Student Administration Office or on the website at:

www.vuw.ac.nz/policy/StudentConduct.

The policy on Staff Conduct can be found on the VUW website at:

www.vuw.ac.nz/policy/StaffConduct.

Academic Grievances

If you have any academic problems with your course you should talk to the tutor or lecturer concerned or, if you are not satisfied with the result of that meeting, see the Head of School or the Associate Dean (Students) of your Faculty. Class representatives are available to assist

you with this process. If, after trying the above channels, you are still unsatisfied, formal grievance procedures can be invoked. These are set out in the Academic Grievances Policy which is published on the VUW website:

www.vuw.ac.nz/policy/AcademicGrievances.

Academic Integrity and Plagiarism

Academic integrity is about honesty – put simply it means **no cheating**. All members of the University community are responsible for upholding academic integrity, which means staff and students are expected to behave honestly, fairly and with respect for others at all times.

Plagiarism is a form of cheating which undermines academic integrity. Plagiarism is **prohibited** at Victoria.

The University defines plagiarism as follows:

Plagiarism is presenting someone else's work as if it were your own, whether you mean to or not.

'Someone else's work' means anything that is not your own idea, even if it is presented in your own style. It includes material from books, journals or any other printed source, the work of other students or staff, information from the Internet, software programmes and other electronic material, designs and ideas. It also includes the organization or structuring of any such material.

Plagiarism is not worth the risk.

Any enrolled student found guilty of plagiarism will be subject to disciplinary procedures under the Statute on Student Conduct (www.vuw.ac.nz/policy/studentconduct) and may be penalized severely. Consequences of being found guilty of plagiarism can include:

- an oral or written warning
- suspension from class or university
- cancellation of your mark for an assessment or a fail grade for the course.

Find out more about plagiarism and how to avoid it, on the University's website at:

www.vuw.ac.nz/home/studying/plagiarism.html.

Students with Disabilities

The University has a policy of reasonable accommodation of the needs of students with disabilities. The policy aims to give students with disabilities an equal opportunity with all other students to demonstrate their abilities. If you have a disability, impairment or chronic medical condition (temporary, permanent or recurring) that may impact on your ability to participate, learn and/or achieve in lectures and tutorials or in meeting the course requirements, then please contact the Course Coordinator as early in the course as possible. Alternatively you may wish to approach a Student Adviser from Disability Support Services to confidentially discuss your individual needs and the options and support that are available. Disability Support Services are located on Level 1, Robert Stout Building, or phoning 463-6070, email: disability@vuw.ac.nz. The name of your School's Disability Liaison Person can be obtained from the Administrative Assistant or the School Prospectus.

Student Support

Staff at Victoria want students' learning experiences at the University to be positive. If your academic progress is causing you concern, please contact the relevant Course Co-ordinator, or Associate Dean who will either help you directly or put you in contact with someone who can.

The Student Services Group is also available to provide a variety of support and services. Find out more at www.vuw.ac.nz/st_services/ or email student-services@vuw.ac.nz.

VUWSA employs two Education Coordinators who deal with academic problems and provide support, advice and advocacy services, as well as organising class representatives and faculty delegates. The Education Office is located on the ground floor, Student Union Building, phone 463 6983 or 463 6984, email education@vuwsa.org.nz.

COURSE SCHEDULE

Week 1 • Introduction to Problem Solving and Decision Making

This session introduces the course, learning objectives, and assignments. The first part of the course covers generic issues and methods, while after the break, the methods become more problem specific. Today we look at how people typically make decisions, some common shortcuts, traps we fall into, plus some models that have been proposed to describe the decision making process.

Week 2 • Framing the Problem

Russo and Schoemaker argue that the way we frame a problem determines critical elements of the problem and hence the solutions derived, yet framing is usually inadequately understood/performed. They provide a frame analysis worksheet which we will use to explore the impacts of frames on likely outcomes. In particular we focus on making explicit the features of a frame, such as the boundaries, values, objectives and performance measures, that often remain implicit, yet are crucial determinants of the quality of the 'solution' to the problem.

Week 3 • Setting the Direction for Improvement – Theory of Constraints

Goldratt's book, *The Goal*, describes a common problematic situation, and how the hero, Alex Rogo, resolves the mess with guidance from Jonah. We will start looking at the Theory of Constraints: starting with Goldratt's 'process of ongoing improvement'. We will discuss how this fits in with the previous week's framing concepts.

Week 4 • Taking a Systems View - TOC Thinking Processes Part I

Goldratt's Thinking Processes framework provides a useful analytical approach to problem structuring, solution and implementation that uses the decision maker(s)'s intuition in developing a systems view with appropriate levels of detail at each stage of the decision making process. In this session we will start our study of the TP tools with those that use 'necessary condition' thinking. We will use the Evaporating Cloud method to explore and resolve conflicts, dilemmas and tradeoffs.

Week 5 • Taking a Systems View - TOC Thinking Processes Part II

One of the key aspects of a frame is the boundaries it imposes: taking a systems view is important. However there is also a need to use the appropriate level of detail. In this session we will explore the tools that use 'sufficient cause' or cause-effect thinking.

Week 6 • Mid-course Review and Integration and Preview of Second Half

To round off the first part of the course, we will review the frameworks covered so far, and explore how they may be used together, for example to address the upcoming group assignment.

Week 7 • Dealing with Variability

Variability is an unavoidable part of our lives, and its effects are often underestimated. In this session we will explore the effects of variability and present some ways of using simulation models to evaluate the effects of variability in a range of situations.

Week 8 • Project Management

Many activities we undertake are one-off activities or projects, the management of which present special challenges. Moreover, current management practices are using 'project' management increasingly often. This session we will look at issues inherent in project management and some strategies for managing them.

Week 9 • Incorporating Multiple Criteria when making Choices

Sometimes choices are problematic because many criteria are considered to be important in making the choice, but no one alternative performs well on all criteria. Multi-criteria decision analysis provides a framework that helps managers decide between alternatives in such complex situations.

Week 10 • Product Mix Decisions using TOC and Linear Programming

Many decisions revolve around the best use of scarce resources, for example the (implicit or explicit) choice of product mix to make best use of production resources. TOC has a simple rule of thumb to help. In addition, optimisation tools can provide invaluable aids for such decisions, using the speed of the computer to aid decision making in well-structured problem situations.

Week 11 • Dealing with Risk and Uncertainty

Sometimes choices between alternative actions are made problematic by the uncertainty surrounding the outcomes that may result from each action. Prospect Theory provides an explanation of how we often deal with such situations. Decision Analysis provides an analytical framework for structuring and resolving such problems. Decision Analysis can also be used to structure and analyse sequences of decisions that commonly occur in real life problems.

Week 12 • Review and Integration

In reviewing the course, we will explore linkages and synergies between the methods described, and the benefits of taking a multi-perspective approach in order to arrive at robust strategies and well-balanced decisions.