University of Manitoba
Department of Supply Chain Management
MSCI.2150 Introduction to Management Science
Winter 2018.MW

Course Outline

A02	Winter 2018	11:30 AM -12:45 PM	MW, Jan 03, April 06, 2018

Course Number:	MSCI 2150
Course Title:	Introduction to Management Science
Credit Hours:	3 credit hours
Class Location	TBA
Pre Requisite:	Please crosscheck them on UM learn or Aurora
Instructor Name:	Dr Yuvraj Gajpal
E-mail:	Yuvraj.Gajpal@umanitoba.ca (Email is usually answered within 2 days
Office Location:	Room 622 Drake Building
Phone:	(204) 474-7421
Fax :	(204) 474-7545
Office Hours:	Monday and Wednesday, 11:30 AM - 12:30 PM or by appoint through email.
Text Book:	Bernard W. Taylor III, (2013). Introduction to Management Science, Second Custom Edition for the University of Manitoba, Publisher: Prentice Hall; Compiled by S.S.Appadoo

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Introduction to Management Science

An Introduction to Management Science techniques and models. Topics include linear programming, distribution problems, decision theory and queuing models.

COURSE OBJECTIVES

1. Understand the core concept of Management Science and Operations Management, so important in the modern business and industrial world with the increased use of computers.

2. Use Mathematical tools and technique to add decision making and planning in the wide area of Management such as Finance, Production/ Operations Management, Accounting, M.I.S., Marketing, Operational Research, Supply Chain Management etc.
3. Enhance the level of critical thinking by building mathematical model, interpreting the results of mathematical model

Intended Learning Objectives

After completing this course, students will be able to:

a) Perform break even analysis to make managerial decision.
b) Build a linear programming based mathematical model to capture the real life decision making process.
c) Solve linear programming model using graph method and using the Excel spreadsheets.
d) Perform sensitivity analysis to know the managerial interpretation of linear programming model.
e) Model a wide variety of medium to large linear programming (LP) problem applied in the various functional area of management such as marketing, production, Finance, transportation etc.
f) Perform network analysis, decision analysis for uncertain situation and waiting line analysis to make managerial decision

AACSB Assurance of Learning Goals and Objectives.

The Asper School of Business is proudly accredited by AACSB. Accreditation requires a process of continuous improvement of the School and our students. Part of "student improvement" is ensuring that students graduate with the knowledge and skills they need to succeed in their careers. To do so, the Asper School has set the **learning goals and objectives** listed below for the **Undergraduate Program**. The checked goal(s) and objective(s) will be addressed in this course and done so by means of the items listed next to the checkmark.

	Goals and Objective in the Undergraduate Program	Goals and Objectives Addressed in this Course
1	Quantitative Reasoning	
	A. Determine which quantitative analysis technique is appropriate for solving a specific problem.	
	B. Use the appropriate quantitative method in a technically correct way to solve a business problem.	✓
	C. Analyze quantitative output and arrive at a conclusion.	✓
2	Written Communication	
	A. Use correct English grammar and mechanics in their written work.	
	B. Communicate in a coherent and logical manner	
	C. Present ideas in a clear and organized fashion.	
3	Ethical Thinking	
	A. Identify ethical issues in a problem or case situation	
	B. Identify the stakeholders in the situation.	
	C. Analyze the consequences of alternatives from an ethical standpoint.	
	D. Discuss the ethical implications of the decision.	
4	Core Business Knowledge	✓

Evaluation:

Midterm Test → Saturday, Feb 17 , 2018 9.30 AM – 12:00 PM 35% weight

FINAL EXAMINATION (Comprehensive), 60% weight

Mid–Term Test and the Final Exam will be Cumulative.

Components and Weights

In class Assignments	5 assignments	5%
Mid-term Examination		35%
Final Examination		60%
Total		100%

In Class Assignments

The in-class assignments are based on the lecture taught in that day. You need to finish these assignments in the class. There is no fixed schedule for in-class assignments; hence, your attendance is required to complete the in-class assignments. If you miss the class, you will miss the in class assignment. However, I will give total of 6 in-class assignments and select best 5 in-class assignments, hence, you can afford to miss maximum of one in-class assignment.

Grade Conversion

At the end of the course your standard percentage grade will be converted to your letter grade in accordance with the following conversion scheme.

LETTER GRADE	PERCENT	LETTER GRADE	PERCENT
A+	90 - 100	C+	65 - 69
A	80 - 90	C	60 - 64
B+	75 - 79	D	55 - 59
B	70 - 74	F	00 - 55

EXAMINATION POLICY:
No cellular telephones or other electronic communication devices are allowed during examinations. Such items will be removed when discovered, and returned upon the completion of the examination.

No make-up examinations will be given. If you miss a Mid-Term Examination for health reasons you are expected to have your doctor complete the attached University of Manitoba Medical Absenteeism Form and submit it to your instructor. In that case you will write a 100% final exam

If you miss the Final Examination you will be required to consult with the Student Advisors in the Undergraduate Program Office, Room 268 Drake Centre. If you meet the criteria and qualify for a Deferred Final Examination, the Department of Supply Chain Management will schedule another opportunity for you to write your Final Examination in the course.

If you miss a Mid-Term Examination for a reason other than illness, you are expected to contact your instructor at your earliest possible opportunity and explain the circumstances surrounding your absence. Your instructor will require appropriate documentary evidence to justify your absence. Then the matter will be referred to the Department Head to ensure that all scenarios are dealt with in a uniform manner. There will be no make-up mid-term exams

ADDITIONAL RESOURCES:
Your textbook contains numerous Problems, Self Test Exercises and Case Problems (voluntary or otherwise) at the conclusion of each chapter. You are seriously encouraged to work through many of them in order to consolidate your understanding and provide you with confidence when writing the examinations.

Practice Mid-Term Examinations and a Practice Final Examination will be made available on D2L. These former examinations will make you aware of the examination format and the scope of the material included in an examination in this course. You will realize that you will be expected to solve a variety of analytical problems in a limited amount of time and space.

The best way to succeed in this course is to read your textbook, practice solving problems, complete homework prior to each class, and review the lecture notes with the examples done in class. It is strongly advised that you start studying for this course well before the examination date. Few students are able to learn all the required topics in the last week before the examination. Limited knowledge of a few of the topics covered in the class may not be sufficient to earn a passing grade in the course.

ACCESSIBILITY POLICY STATEMENT:
Any student requesting academic accommodations based upon a disability is required to register with Accessibility Services (A.S.) each semester. A.S. is located at 155 University Centre (basement-level). If you are unsure whether you qualify for their assistance, you are encouraged to visit or call A.S. in order to make an appointment with a staff member. The A.S. telephone number is 474 – 6213.

All Accessibility Service discussions are confidential. If you meet their criteria, A.S. staff will notify me. I will work with them to ensure that examinations are delivered on time and picked up at the conclusion of the examination.

Class Notes and power point slides will be uploaded on UM learn

Tentative Course Schedule – Winter 2018 M/W

Date	Topic
Jan 03	**Ch1:** Introduction, Break Even Analysis (Brief discussion)
Jan 8	**Ch2:** Introduction to Linear Programming Model Formulation
Jan 10	**Ch2:** Introduction to Linear Programming Graphical Solution
Jan 15	**Ch2:** Graphical Solution (continued), slack/surplus variables
Jan 17, 22, 24	**Ch3**: Linear Programming: Computer Solution and Sensitivity Analysis
Jan 29, 31 Feb 5, 7	**Ch4:** Linear Programming: Modelling Examples Applications in various business areas
Feb 12, 14	**Ch5:** Transportation, Transhipment and Assignment Problems
Midterm Test Saturday Feb 17, 2018 9.30 A.M. - 12. 00 P.M. **Weight - 35%** **Material covered: From Ch1 to Ch5** **Exam room: TBA**	
Feb 26	**No class on Feb 26 to compensate mid-term exam**
Feb 28, Mar 05	**Ch6**: Network Flow Models. Shortest Route Problem, Minimal Spanning Tree Problem
March 07, 12	**Ch8:** Decision Analysis.
Mar 14, 19, 21	**Ch8:** Decision Analysis.
Mar 26, 28 April 02	**Ch9:** Queuing Analysis
April 4	**Review**

<u>Important Note</u>

Students are strongly advised to go through solved examples, Problems and Case Problems in the textbook. Always adopt pen and paper for doing Management Science problems. You will be deceiving yourself if you simply read the text. In order to draw the maximum benefit out of this course, you should always, before going to the next lecture, go through the reading assignment. This will create greater interest in the lecture.

• Responsibility: You are responsible for obtaining notes and handouts from any classes you miss.

• Attendance: It has been observed that your attendance in class has a direct correlation with your final grade. Do make an attempt to attend all classes.

• Exams: The Tests and Final will be closed book, no notes allowed.

Academic Integrity

It is critical to the reputation of the Faculty of Management and of our degrees, that everyone associated with our faculty behave with the highest academic integrity. As the faculty that helps create business and government leaders, we have a special obligation to ensure that our ethical standards are beyond reproach. Any dishonesty in our academic transactions violates this trust. The University of Manitoba's rules can be found in the General Calendar, under "General Academic Regulations and Policy." The University of Manitoba General Calendar addresses the issue of academic dishonesty under the heading "Plagiarism and Cheating." Specifically, acts of academic dishonesty include, but are not limited to:

- using the exact words of a published or unpublished author without quotation marks and without referencing the source of these words
- duplicating a table, graph or diagram, in whole or in part, without referencing the source
- paraphrasing the conceptual framework, research design, interpretation, or any other ideas of another person, whether written or verbal (e.g., personal communications, ideas from a verbal presentation) without referencing the source
- copying the answers of another student in any test, examination, or take-home assignment
- providing answers to another student in any test, examination, or take-home assignment
- taking any unauthorized materials into an examination or term test (crib notes)
- impersonating another student or allowing another person to impersonate oneself for the purpose of submitting academic work or writing any test or examination
- stealing or mutilating library materials
- accessing test prior to the time and date of the sitting
- changing name or answer(s) on a test after that test has been graded and returned
- submitting the same paper or portions thereof for more than one assignment, without discussions with the instructors involved