

Department of Agribusiness and Agricultural Economics

***ABIZ 2520 Introduction to
Management Science
Winter 2021***

Online in Microsoft Teams

Instructor: Dr. Gary V. Johnson

Room 130 Agricultural Building

204-474-9795

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INSTRUCTOR CONTACT

Email: Response guaranteed within three business days when in town

Face-to-face meetings by Microsoft Teams

Course Presentation:

The course will be held in the time period as per the class schedule. All lectures will be live and online using Microsoft Teams. All lectures will be recorded and available to stream in Microsoft Teams after a particular lecture is given. The lectures are copyrighted and the property of Dr. Gary V. Johnson and can be used only with his consent.

OBJECTIVES:

1. To gain familiarity with the management science and/or system approach to solving problems
2. To gain skills in use of quantitative methods in decision making
3. To improve students modeling skills
4. To continue to build student skills with spreadsheets
- 5.

Required Text :

Hillier, F. S., and M. S. Hillier. 20. *Introduction to Management Science*.

Boston: McGraw-Hill Education. 6e Edition. **McGraw-Hill Connect program**

Additional Materials:

Notes, outline, and honesty declaration available in Microsoft Teams and on UM Learn.

Grading:

| | |
|-----------------------|-----|
| Assignments (6) | 20% |
| Tests (4 at 20% each) | 80% |

All tests will be given during the scheduled class period. There will be no make-up tests. If a student misses a test, the amount of the course grade

for the test will be divided and added to the other tests. A student must take a minimum of 3 tests. If a student misses a second test the grade of zero will be entered for the additional test missed.

Test Dates:

Test 1—Friday, February 5, 2021

Test 2—Friday, March 5, 2021

Test 3—Friday, March 26, 2021

Test 4—Friday, April 16, 2021

All students must sign and submit an “Honesty Declaration” (see below) before any assignment will be graded.

A student caught plagiarizing or cheating will be subject to the regulations in the University of Manitoba Undergraduate Calendar for the Academic Year 2020-2021 under the heading of **Academic Integrity**.

The University of Manitoba takes academic integrity seriously. As a member of the International Centre for Academic Integrity, the University defines academic integrity as a commitment to six fundamental values: honesty, trust, fairness, respect, responsibility and courage.

To help students understand the expectations of the University of Manitoba, definitions of types of prohibited behaviours are in the Student Academic Misconduct Procedure

<https://umanitoba.ca/student/records/media/UM-Undergraduate-Calendar-2020-2021-v07.pdf>. . and provided below.

“Academic Misconduct” means any conduct that has, or might reasonably be seen to have, an adverse effect on the academic integrity of the University, including but not limited to:

(a) Plagiarism – the presentation or use of information, ideas, images, sentences, findings, etc. as one’s own without appropriate citation in a written assignment, test or final examination.

(b) Cheating on Quizzes, Tests, or Final Examinations – the circumventing of fair testing procedures or contravention of exam regulations. Such acts may be premeditated/planned or may be unintentional or opportunistic.

© Inappropriate Collaboration – when a student and any other person work together on assignments, projects, tests, labs or other work unless authorized by the course instructor.

(d) Duplicate Submission – cheating where a student submits a paper/assignment/test in full or in part, for more than one course without the permission of the course instructor.

(e) Personation – writing an assignment, lab, test, or examination for another student, or the unauthorized use of another person’s signature or identification in order to impersonate someone else. Personation includes both the personator and the person initiating the personation.

(f) Academic Fraud – falsification of data or official documents as well as the falsification of medical or compassionate circumstances/documentation to gain accommodations to complete assignments, tests or examinations.

Assignments:

Assignments will be given on a Monday are due the Monday of the next week by 11:59 p.m. Late assignments will be given a 0 grade and the grade for late or not handed in assignments **will not be added to the tests**. The purpose of the assignments is for students to demonstrate their understanding and ability to use the analytical tools discussed in class.

1. Every thing is to be handed in UM Learn. Name all Files with your name and the assignment number
 - example: Joe Blow assignment 1
 - put all problems in one Excel workbook
2. Written answers in MS Excel
 - equations in Excel
 - Use Microsoft Equation Editor (**Insert** menu, click Symbols and click Equation)
3. Graphical solutions
 - Excel drawing method
 - find the solution using the spreadsheet model solution before the graphical solution
4. Keep it simple
 - don’t include unnecessary graphs, pictures, etc.
 - keep as small as possible
5. Assignments can be in Excel 2003 format (.xls) or Excel 2007-2010 format (.xlsx)
6. Assignments will not be graded without submission of an “Honesty Declaration”
7. Assignments are due at 11:59 p.m. on due date. Late assignments will receive a grade of 0

Microcomputer Laboratory:

There is two scheduled weekly computer laboratory periods

Online
Tuesday
10:30-11:20 a.m.

Online
Thursday
10:30-11:20 a.m.

Students are expected to attend both lectures and encouraged to attend laboratories. The laboratories will provide hands-on experience with building, interpreting and presenting analytical models for decision making. **There will not be a laboratory in the first week of classes.**

Tentative Course Outline:

| Topic | Reference |
|--|------------------|
| I. Introduction | Chapter 1 |
| II. Optimization, Linear Programing & Spreadsheets | Chapters 2 & 3 |
| III. Linear Programing Applications & Sensitivity | Chapter 4 & 5 |
| IV. Network Optimization | Chapter 6 |
| V. Using Binary Integer Programing | Chapter 7 |
| VI. Nonlinear Programing | Chapter 8 |
| VII. Decision Analysis | Chapter 9 |
| VIII. Forecasting | Chapter 10 |
| IX. Queueing Models | Chapter 11 |
| X. Simulation | Chapter 12 & 13 |

Student Code of Conduct:

1. No talking when the instructor or other students are talking
2. Eating is allowed as long as it does not interfere with the instructor or with the ability of other students to enjoy the course
3. Cell phones must be turned off during class

Honesty Declaration – ABIZ.2520

Individual Work

This form must be completed and handed in to me before your FIRST assignment is accepted. Assignments will only be accepted for marking from students who have submitted this Honesty Declaration.

I, the undersigned, declare that all assignments I submit are wholly the product of my own work, and that no part of them have been:

- **copied** by manual or electronic means from any work produced by any other person(s), present or past, including tutors or tutoring services
- based on laboratory work that I did not complete
- **copied** from any other source including textbooks and web sites except as directly authorized by the Instructor.

Note: It is acceptable for students to work together on assignments. However, any interpretation and/or discussion should be **your own**. I understand that penalties for submitting work which is not wholly my own, or distributing my work to other students is considered an act of Academic Dishonesty and is subject to penalty as described by the University of Manitoba's Student Discipline Bylaw*.

Please PRINT all information:

Last Name: _____ First Name: _____

Student Number: _____ UM Email: _____

Course: _____

Date: _____

Signature: _____

(*) Penalties that may apply, as provided for under the University of Manitoba's Student Discipline Bylaw, range from a grade of zero for the assignment, failure in the course to expulsion from the University. The Student Discipline By-Law may be accessed at:

http://umanitoba.ca/admin/governance/governing_documents/students/index.html