



**ABIZ 2520 & SECTION A01(3 CH)
Introduction to Management Sciences**

WINTER 2024

130 Agriculture Building MWF 8:30 AM - 9:20 AM

TERRITORY ACKNOWLEDGEMENT

The University of Manitoba campuses are located on original lands of Anishinaabeg, Cree, Oji-Cree, Dakota and Dene peoples, and on the homeland of the Métis Nation. We respect the Treaties that were made on these territories, we acknowledge the harms and mistakes of the past, and we dedicate ourselves to move forward in partnership with Indigenous communities in a spirit of reconciliation and collaboration.

INSTRUCTOR

Name: Farhan Islam (He/Him)

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Office hours: Monday and Friday 9:30 – 10:30 am (By appointment only via Zoom)

Mr. Farhan Islam is one of the respected Instructor at Asper Business School with vast working and teaching experience and interests. He has extensive experience in green sustainability, risk analysis, lean systems, and economic development. He has also been involved in developing and launching start-up small companies as well as government projects.

Farhan has taught a wide variety of courses in Agribusiness, Economics, Statistics, Mathematics, Marketing, Information Systems, and Management. Farhan also teaches at the University of Winnipeg and Red River College Polytechnic. He is a business and Policy Consultant and runs an independent consultancy firm globally. He was a major researcher and was involved in policy consideration in University of Manitoba Transport Institute (UMTI) “GrEEEn Trucking Program” in 2011-2012 which become one of the major successful projects in UMTI. Farhan is currently pursuing Chartered Financial Analyst (CFA), completing Project Management Professional (PMP), Actuarial designation (ASA), VMware Certification, and Lean Six Sigma Certification.

COURSE ELEMENTS

Credit value	3	Leadership	Yes	IT skills	Yes	Global view	Yes
Ethics	Yes	Numeracy	Yes	Written skills	Yes	Participation	Yes
Innovation	Yes	Group work	Yes	Oral skills	Yes	Evidence-based	Yes
Experiential	Yes	Final exam	No	Guest speakers(s)	No		

REQUIRED TEXTBOOK AND/OR MATERIALS

Hillier. Introduction to Management Science and Business Analytics, 7e, Mcgraw Hill.

CONNECT w ebook - 9781260719277

OR

CONNECT/Print Bundle - 9781265426576



Please respect copyright laws. Photocopying textbooks or other reading material is a violation of copyright laws and is unethical, unless permission to copy has been obtained.

COURSE LEARNING OUTCOMES

An introduction to management science techniques and models relevant to the agricultural and agri-food sectors. Topics include linear programming, distribution problems, decision theory and queuing models.

May not be held with MSCI 2150 or MSCI 2151. Prerequisites: A minimum grade of C in [MATH 1300 (MATH 1301) or MATH 1210] and [MATH 1500 (MATH 1501) or MATH 1510 or MATH 1520]. Pre- or corequisite: AGRI 2400 or STAT 1000 or STAT 1001.

Note that some topics will be covered in much greater depth than others. Depending on time constraints, some topics may not be covered.

Successful completion of this course should enable students to:

- Perform break even analysis to make managerial decision.
- Build a linear programming based mathematical model to capture the real-life decision-making process.
- Solve linear programming model using graph method and using the Excel spreadsheets.
- Perform sensitivity analysis to know the managerial interpretation of linear programming model.
- 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.
- Perform network analysis, decision analysis for uncertain situation and waiting line analysis to make managerial decision

EQUITY, DIVERSITY & INCLUSION (EDI)

At the Department, we believe that an exceptional learning environment is sustained by diverse perspectives, equitable opportunities, and inclusive spaces. We are committed to challenging biases and confronting discrimination; nurturing openness, empathy, and active participation in our collaborations; and creating inclusive communities that foster belonging for all students, staff and faculty. Above all, we strive to embed principles of equity, diversity, and inclusion in all elements of business education, in our classrooms and beyond.

[Report your EDI concerns here.](#)

REQUESTING RELIEF FOR MISSED ACADEMIC WORK/ EXAM AND LATE SUBMISSION POLICY

No make-up examinations will be given. If you miss a *test* for health *reasons*, your *test* exam weight will be *average it out with other tests*. If you miss a *test* 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 exams.

ATTENDANCE POLICY

You are allowed a maximum of 4 unexcused absences. This does not include excused absences due to:

- a) medical and/or compassionate reason
- b) participation in an inter-university, provincial, inter-provincial, national, or international scholastic or athletic event
- c) religious obligations
- d) qualification for accommodation under one of the Asper approved list of events

If you have over 4 unexcused absences, it will result in an automatic F grade in the course, as per the School's Debarment Policy. There will be no exceptions to this rule. If you feel you will have over 4 unexcused absences, you are strongly encouraged to VW if possible.

Attendance will be taken daily starting the second week of classes. Joining the class over 15 minutes late or leaving more than 15 minutes early (without the instructor's prior approval) will be considered absent for that class.

ACADEMIC ACCOMMODATION

Student Accessibility Services (SAS) provides supports for students with disabilities and to foster success for your academic future. If you need help and support as a student please reach out to [the SAS office](#).

Students with disabilities may have academic accommodations that include extensions on course work and test deferrals. These accommodations are separate from the self-declaration for brief and temporary absence policy. A student or faculty member can contact an Accessibility Coordinator to discuss academic accommodations related to disability.

COMMUNICATION AND FEEDBACK

Students who wish to correspond with instructors or TAs directly via email must send messages that originate from their official University email account. This protects the confidentiality and sensitivity of information as well as confirms the identity of the student. Emails regarding course feedback should be sent to the instructor.

COURSE FORMAT AND HEALTH & SAFETY PROTOCOLS

This course will be taught in-person, unless there's a directive from the university that requires us to move to remote delivery. We will observe the health-related safety protocol mandated by the university. The course will move forward as group discussions thus high level of class participation is required in the course.

Stay home when sick

In line with our commitment to maintaining a healthy and safe campus environment, we kindly remind everyone to stay home when feeling unwell. We urge you to consider the well-being of others and be respectful of their choices when assessing your own health and ability to attend campus. UM continues to be a mask friendly space.



You can find the self declaration form [here](#) if you find yourself sick and need to miss class/exam/assignments.

What to do if you become ill while at UM:

1. If you have a mask, please wear it and leave the classroom, lab, or workspace immediately.
2. Perform hand hygiene (soap and water or hand sanitizer) and avoid contact with others and minimize contact with the physical environment.
3. Inform your instructor(s) or, if in residence, the appropriate individual.
4. Please remain off-campus and all UM facilities until cleared to return in accordance with self-assessment, testing results, and UM recommended isolation procedures.

AI TOOLS

AI tools can be used to enhance learning and problem-solving skills, but they should not replace independent thinking and learning. Students must exercise critical thinking when using AI tools and acknowledge their use in academic work. Prohibited uses include generating or completing academic work with AI tools without appropriate acknowledgement. Academic honesty is paramount, and students should accurately represent their individual effort and knowledge. Faculty will provide guidance on AI tool usage and incorporate discussions on AI ethics and academic integrity. Violations may lead to disciplinary actions, including academic penalties or suspension.

TECHNICAL REQUIREMENTS

In the event health mandates or the instructor falling sick for an extended period require switching to remote delivery of classes, you will need a device enabled with a camera and microphone. Further, you will have to be in a location with a stable Internet connection that is strong enough for streaming video.

For quizzes/exams that will be administered via the Respondus Lockdown browser, you will need a device (computer or iPad; note that smartphones and Chromebooks will not work) with one of the following operating systems:

- Windows 10 or 8 (note: will not work with Windows 10S)
- MacOS 11.1+ to 10.12
- iPad iOS: 11.0+ (will not work with other tablets)
 - Memory: 2 GB RAM
 - Hard Disk Space: 200 MB of free hard disk space for program files

You will need the Chrome browser. Other browsers such as Safari will not work.

If you do not have a laptop computer or one that meets the above specifications, please make sure you let your instructor know as soon as possible.

ASSESSMENT OF LEARNING

NOTE: There is NO FINAL EXAM.

Performance Evaluation	Weight (%)
Class Contribution: Attendance, Discussions & In Class Exercises	10 %
Online Assignments and quizzes (Connect)	10 %
Lab Exercises and Quizzes	10 %
Term Tests (4 Tests – Jan 29 th , Feb 26 th , March 18 th , and April 8 th)	70 %
Total	100 %

Grade Conversion:

The following table shows the *tentative* grade cut-offs:

Cumulative Marks	Grade	Performance
$92 \leq x \leq 100$	A+	Excellent
$85 \leq x < 92$	A	Very Good
$80 \leq x < 85$	B+	Good
$75 \leq x < 80$	B	Satisfactory
$68 \leq x < 75$	C+	Marginal
$60 \leq x < 68$	C	Unsatisfactory
$50 \leq x < 60$	D	Unsatisfactory
< 50	F	Unsatisfactory

In the event of a skewed distribution of grades, the total course marks may be curved up or down as necessary (the weighting of each component will remain unchanged).

1. Class Contribution: Attendance, Discussions and in class Exercises (10 %)

The class contribution portion of your grade will be determined by your contribution (including in class exercises) to the learning of the class.

During classes with assigned textbook chapter(s), part of the class may be used to do group exercises based on the assigned textbook chapter(s). All members of the group will receive the same group mark unless the group advises otherwise.

2. Online Connect Assignments and quizzes (10 %)

There will be online assignments and quizzes available on CONNECT (McGraw Hill).

3. Lab Exercises and Quizzes (10 %)

There will be Lab exercises and quizzes during lab time.

3. Term Tests (70 %)



There will be 4 term tests which will be conducted in person during class time. The term test exams may contain multiple choice questions, fill in the blank, case analysis and short answer questions and some quantitative analysis questions. There is no make up test, however, if a student miss a test, the weight will carry forward to the other tests.

To protect the academic integrity of education at the Asper School, certain protocols will be observed for online exams. For instance, the online exam will be set up such that each student will get a random subset of questions from a larger question bank, which means no two students will get exactly the same exam. Further, a very small number of questions will appear on a screen, and you may not have the option to move back to questions you have already answered. The instructor may require your camera be on and directed at you for the entire duration of the exam.

ELECTRONIC DEVICE POLICY

To maintain a focused and distraction-free atmosphere during class, please refrain from using your cellphones for texting, browsing, or any other non-academic activities.

Recording Lectures: If you wish to audio/video record any of the lectures for personal study purposes, I kindly ask that you obtain my permission beforehand.

Before the lecture, approach me to discuss your intention to record. Provide a clear explanation of how you plan to use the recorded material for your studies. If permission is granted, follow any specific guidelines I provide for recording, such as ensuring the recording device is not disruptive to others. Please note that recorded material should be used solely for your personal educational purposes and not shared without proper authorization. By adhering to these guidelines, we can create an environment that promotes effective learning, respectful behavior, and positive interactions among all participants.

OUT OF CLASS COMMUNICATION

PowerPoint files and Pdf files, assignments, other class-related files, and intermediate grades will be posted on [UM Learn](#). Any announcements outside of class will be sent by e-mail from *UM Learn*. It is your responsibility to check your UofM e-mail account frequently so that you don't miss these communications from me. *UM Learn* will also be used to submit your individual/group assignment.

REFERENCING STYLE FOR WRITTEN WORK

For the citations in the assignments or group assignments, you may use APA, MLA, or Chicago style. However, use only one of these styles throughout your written work and use it consistently. Refer to resources where you can learn the style you expect them to use (e.g., librarian, <http://libguides.lib.umanitoba.ca/citationmanagers/referencemanagers>)

CLASS SCHEDULE

Week	Date	Topic	Chapter
1	Jan 8/10/11	Introduction Break Even Analysis	Supplement to Chapter 1 (available online)
2	Jan 15/17/19	Introduction to Linear Programming Model Formulation	Chapter 5 and Supplement to Chapter 5



3	Jan 22/24/26	Introduction to Linear Programming Model Formulation	Chapter 6
4	Jan 29	Test 1 (Jan 29th from 8:30 AM – 9:15 AM) – Topics will be based on Week 1 to 2.	
	Jan 31/Feb 2	Sensitivity Analysis	Chapter 8
5	Feb 5/7/9	Sensitivity Analysis (Contd.)	
6	Feb 12/14/16	Transportation, Assignment and Allocation Problems	Supplement to Chapter 17 and additional notes available on UM Learn
Feb 19 – Feb 23		Winter Term Break – No classes	
7	Feb 26	Test 2 (Feb 26th from 8:30 AM – 9:15 AM) – Topics will be based on Week 3 to 5.	
	Feb 28/ Mar 1	Transportation, Assignment and Allocation Problems (Contd.) Network Optimization Problems	Chapter 9 and Supplement to Chapter 9
8	Mar 4/6/8	Network Optimization Problems	Chapter 9 and Supplement to Chapter 9
9	Mar 11/13/15	Decision Analysis	Chapter 12 and Supplement to Chapter 12
10	Mar 18	Test 3 (March 18th from 8:30 AM – 9:15 AM) – Topics will be based on Week 6 to 8.	
	Mar 20/22	Decision Analysis	Chapter 13 and Supplement to Chapter 13
11	Mar 25/27/29	Queueing Analysis	Chapter 13 and Supplement to Chapter 13
12	Apr 1/3/5	Queueing Analysis	
13	Apr 8	Test 4 (April 8th from 8:30 AM – 9:15 AM) – Topics will be based on Week 9 to Week 12.	
		No Class on April 10	

IMPORTANT DATES AND DEADLINES

Refund deadline	- Jan 18 th
VW deadline	- March 20
Final Exam	- No Final Exam

A list of all important dates and deadlines at the University of Manitoba can be [found here](#).

ACADEMIC HONESTY

Academic integrity is critical to the reputation of the University of Manitoba and for the degrees we award. As the Faculty that helps create business and government leaders, we have a special obligation to ensure that our ethical standards are beyond reproach. Therefore, the University takes academic misconduct very seriously and does what it takes to uphold the highest academic integrity standards. You can find information on what constitutes academic misconduct on the University of Manitoba's [Academic Integrity webpage](#). It is your responsibility to educate yourself on what's acceptable and what's not. Ignorance is no excuse. When in doubt, talk to your instructor.

Examples of academic misconduct include, but are not limited to:

- using the exact words from a published or unpublished source without quotation marks and without referencing that source both in-text and in the Bibliography
- reproducing a table, graph, or diagram, in whole or in part, without referencing the source
- paraphrasing someone else's words without referencing the source both in-text and in the Bibliography
- using a paper (or parts of it) that was submitted in one course for an assignment in another course, without discussion with both the instructors involved
- getting your assignment done by someone else, either for payment or otherwise
- using material available on file-sharing sites such as Course Hero, Chegg, etc. Uploading material to such sites also constitutes academic misconduct depending on what is shared.
- copying the answers of another student in any exam or assignment
- providing exam answers or assignments to other students via any medium or obtaining them from other students or websites
- taking any unauthorized materials into an examination (crib notes), regardless of whether those are used during the exam
- recording exam questions using any method, regardless of whether those are shared with others
- sharing exam questions with those who are yet to take the exam, including future students or attempting to sell exam questions
- impersonating another student or getting another person to impersonate you for the purpose of attendance, earning class participation marks, submitting academic work, or writing an exam
- changing any part of test answers after that test has been graded and returned

Group Projects and Group Work

Many courses in the University require group projects. All group members should exercise special care to ensure that the group project is free from plagiarism. Should a violation occur, group members are jointly accountable unless the violation can be attributed to specific individuals.

Some courses, while not requiring group projects, encourage students to work together in groups before submitting individual assignments. If it's unclear whether it is allowed, students are encouraged to seek clarification from the instructor to avoid violating the academic integrity policy.

All suspected cases of academic misconduct in undergraduate courses are reported to the Dean's office and follow the approved [disciplinary process](#).



SPIRITUAL CARE AND MULTI-FAITH CENTRE

Academic accommodation for religious, Indigenous or spiritual observances [multi-faith calendar](#).

The [Spiritual Care and Multi-Faith Centre \(SCMC\)](#) supports students as they navigate through the highs and lows of academic life, helping to piece together and make sense of the troubling, confusing, and exciting parts that make up their lives.

Spiritual health services are available to all, whether you identify as spiritual, atheist, religious or agnostic. We recognize, affirm and work with your existing values and beliefs.

STUDENT SERVICES AND SUPPORTS

The University of Manitoba provides many different services that can enhance learning and provide support for a variety of academic and personal concerns. You are encouraged to visit the below websites to learn more about these services and supports.

If at any time you feel that your personal safety is in jeopardy, you can contact Security Services for a variety of supports.

Empower Me (free for U of M students) 1-844-741-6389

Klinik Crisis Line (24hrs) 204-786-8686 or 1-888-322-3019

Emergency Contact

- 555 from any university phone or #555 from MTS or Rogers Wireless
- 204-474-9341 from all other phones
- Any emergency phone on campus

Non-Emergency Contact

- Safewalk/Fort Garry Campus: 204-474-9312

Winnipeg Police Services

Contact this service if you feel concern for your safety, or if you would like to make a report of criminal behavior.

- Winnipeg Police (emergency line) 911
- Winnipeg Police (non-emergency line) 204-986-6222

More resources

Concern	Link
Reporting discriminatory behavior by another university member	Speak Up
Tech-related issues with UM Learn or videoconferencing	Information Services & Technology
Admission, Registration, Tuition Fees, Important Dates, Final Exams, Graduation, and Transcripts	Registrar's Office



Academic policies & procedures, regulations, Faculty-specific information, degree and major requirements	Academic Calendar
Help with research needs such as books, journals, sources of data, how to cite, and writing	Library Resources
Tutors, workshops, and resources to help you improve your learning, writing, time management, and test-taking skills	Writing and Learning Support
Support and advocacy for students with disabilities to help them in their academic work and progress	Student Accessibility Services
Copyright-related questions and resources to help you avoid plagiarism or intellectual property violations	Copyright Office
Student discipline bylaws, policies and procedures on academic integrity and misconduct, appeal procedures	Academic Integrity
Policies & procedures with respect to student discipline or misconduct, including academic integrity violations	Student Discipline
Students' rights & responsibilities, policies & procedures, and support services for academic or discipline concerns	Student Advocacy
Your rights and responsibilities as a student, in both academic and non-academic contexts	Your rights and responsibilities
Medical services for any physical or mental health issues	University Health Service
Information on health topics, including physical/mental health, alcohol/substance use harms, and sexual assault	Health and Wellness
Mental health, including anxiety, stress, depression, help with relationships or other life concerns, crisis services, and counselling.	Student Counselling Centre
Support services available for help regarding any aspect of student and campus life, especially safety issues	Student Support Case Management
Resources available on campus, for environmental, mental, physical, socio-cultural, and spiritual well-being	Live Well @ UofM
Help with any concerns of harassment, discrimination, or sexual assault	Respectful Work and Learning Environment
Concerns involving violence or threats, protocols for reporting, and how the university addresses them	Violent or Threatening Behaviour

UM Student Supports

[Sexual Violence Resource Centre](#)



[Student Advocacy and Case Management](#)



[Student Accessibility Services](#)



[Health and Wellness Centre](#)



[Spiritual Care and Multi-Faith Centre](#)



[University Health Services](#)

