

YORK UNIVERSITY
School of Administrative Studies
Summer (S1) 2023, AP/ADMS 3330 Section A
Introduction to Management Science

Course Director: Dr. Hassan Qudrat-Ullah, **Email:** hassanq@yorku.ca

Time: Monday and Wednesday, 4:00 pm – 7:00 pm

Location: RS205

Office Hours: Thursday 2:00 – 3:30 pm

Course Description:

This course is an introduction to the basic theory underlying Management Science and Operations Research. This course not only helps the students learn how to model real-life problems as mathematical models but also provides them the mathematical foundation and the spreadsheet skills to solve them. Specifically, using spreadsheets, the course focuses on modeling a variety of applications of finance, marketing, and production/operations management with spreadsheets. Some of these applications include inventory control, workforce management, location and distribution problems, revenue management, portfolio selection, capital budgeting, and optimal sales allocation. The course also focuses on theories on basic optimization techniques such as the simplex method for solving linear programming, duality theory, Branch-&-Bound algorithm for solving integer linear programming, and multi-criteria decision making.

Prerequisite: AP/ADMS 2320 3.0

Course credit exclusion: AP/ADMB 3330 3.00

Course Website: <https://eClass.yorku.ca/>

Required Textbook:

Anderson, Sweeney, Williams, Camm, Cochran, Fry, and Ohlmann, *An Introduction to Management Science: Quantitative Approaches to Decision Making*, 15th Edition, 2019 South-Western Cengage Learning.

Reference/Optional: Spreadsheet Modeling and Decision Analysis, A Practical Introduction to Business Analytics, 8th edition, C.T. Ragsdale, 2016.

Supporting/Additional material (if any) will be posted on the course website.

Marking Scheme:

Test – I	30%
Test – II	30%
Final Exam	40 %
Total	100 %

Tutorials: TBA

NOTE:

The use of electronic gadgets such as laptops/notebooks/tablets, smart phones, or cell phones is NOT allowed in the classroom.

- Please keep your electronic gadgets in your bag, They should not be on your desk.
- If there is anything urgent requiring your attention, you may leave the classroom quietly, without disturbing your classmates, and use your gadget outside.
- No excuses (e.g., use of e-book, use of slides or taking notes directly on the gadget) will be accepted.

Academic honesty and integrity

In this course, we strive to maintain academic integrity to the highest extent possible. Please familiarize yourself with the meaning of academic integrity by completing SPARK's [Academic Integrity module](#) at the beginning of the course. Breaches of academic integrity range from cheating to plagiarism (i.e., the improper crediting of another's work, the representation of another's ideas as your own, etc.). All instances of academic dishonesty in this course will be reported to the appropriate university authorities and can be punishable according to the [Senate Policy on Academic Honesty](#).

Term Tests/Final Exam

- There will be two tests within the term and a final exam. Both term tests and the final examination may consist of multiple-choice questions and questions/problems requiring full answers/solutions. Tests and Final Exam are all closed book and notes; however, a formula sheet will be provided, as may be required.

Answers for Multiple Choice and True/False Questions must be recorded on a SCANTRON sheet by pencil within the designated time of the testing components. NO EXTRA time will be granted to “bubble in” the Scantrons. No Excuses (e.g., “I answered all questions. Just need to transfer to Scantron.”) will be accepted.

It is your responsibility to correctly bubble on Scantron the test/exam version under “Test Form”. Questions papers will not be returned to the students, you will get answer book which will have your MCQs portion of marks. However, you can review on individual basis during office hours. To review you must submit your request via email within five days from the return date not from your collection date. When reviewing you are not allowed to take notes, pictures or copy any part of the testing instrument.

- If you miss any term test, the weight of **one and only one** missed test (30%) will be automatically transferred (no documents such as doctor's note needed) to the final examination. If you miss both term tests, your final examination will only weigh 70%.
- If you have written BOTH Term Test I and Term Test II, the final exam will be non-cumulative. On the other hand, the 70% final exam will be comprehensive. Exams are **closed** book and notes. However, a formula sheet, as may be required, will be provided by the professor for each exam.
- Do not write an exam if you do not feel well. Once you start to write an exam, the marks you receive will be used. (If no work is completed, a mark of zero will be assigned.)
- **There are no alternative exam dates and times for the Term Tests.**
- If students miss the Final Examination and have to defer the exam, the deferred exam will be a **comprehensive** examination.
- If you need religious accommodations, please follow the York University policy/procedure, and once approved, update your professor at least 7 days before the testing component.

General Policy

1. **WARNING: Distribution or uploading of course content is STRICTLY PROHIBITED. All material is copyright protected.**
2. Concerns regarding marks **will not be entertained after a week** from the release of the marks/result.
3. Students will not be allowed to write the term tests and final exam unless they are on the class list/sign-in sheet. There will be no exceptions. It is the responsibility of students to ensure that they are properly enrolled in the course.
4. Due to unavoidable circumstances, if any lecture is missed due to technical reasons, the date for the make-up lecture will be announced on the course website.
5. Please ensure you read all documentation on the course eClass site.
6. It is your responsibility to visit the course eClass site regularly.
7. If you have a query about the questions solved in any tutorial session, communicate directly with the tutor, if you are not satisfied with the reply of your tutor, then contact your professor.
8. Due to the high volume of emails, it might be possible that replies to your email queries might take longer than usual. Please expect no (or limited) response to your e-mails during the weekends.

SCANTRON PROTOCOL

There may be multiple-choice type questions (MCQs) in the testing components. The answers to these questions must be marked on the SCANTRON sheet. Scantron must be filled by PENCIL only. The following information is required to mark on Scantron. Name (Last, First), I.D. Number, Test Form, Code, and MCQ answers.

- **Name (Last, First):** 20 columns are available. You must fill in from the first column. The machine cannot read the information provided if the first column is left blank.
- **I.D. Number:** 10 columns are available. You must fill in from the first column. The machine cannot read the information provided if the first column is left blank.
- **Test Form:** Four choices are available A, B, C, and D. Need to fill out yours. This field is critical. The machine detects the marking key Version from this field to mark the answers.
- **Code:** 2 columns are available; your section should be marked here. For example, if your section is "V," mark it "VV."
- **Your answers to MCQs:** For each MCQ, five choices are available (A to E). Just mark one best Answer for each MCQ. MCQs are numbered from 1 to 200. Fill in as many as the number of MCQs given.

Scantron is marked by the machine automatically. The machine cannot read correctly if, for any reason, it finds multiple marks for a field. To be safe, avoid using an eraser on Scantron. If you use an eraser, clean it neatly so the machine will not read your erased mark.

Last but not the least essential point is that the machine can read a mark if a black pencil marks it, preferably H.B. If you use a pen, the machine will read all field blank.

You must adhere to the above instructions. If it is not complied, then you might lose marks. Note that.

- If the machine reads any **MCQ's** answer marked as multiple answers, those MCQs will get **0 marks**.
- The machine can't read any **MCQ's** answer marked by pen, those MCQs will get **0 marks**.

Course Schedule:

Note that the course schedule below is subject to change as deemed appropriate/necessary by the Professor during the semester.

Check the course website periodically for possible changes in coverage, if any.

Session	Date	Topic	Quiz/Chapters
1	May 8	Introduction to Optimization LP Graphical Method	Ch 2
2	May 10	LP Sensitivity Analysis	Ch 3
3	May 15	LP Applications	Ch 4
4	May 17	Integer LP & 0-1 Variables	Ch 7
	May 21 SUNDAY	Term Test I at 10:00 am Location: TBA Details: TBA	Chapters 2, 3, and 4
5	May 24	Distribution and Network Models	Ch 6
6	June 5	Multicriteria Decisions	Ch 14
7	June 7	Time Series Analysis and Forecasting	Ch 15
	June 11 SUNDAY	Term Test II at 6:00 pm Location: TBA Details: TBA	Chapters 6, 7, and 14
8	June 12	LP: Simplex Method (Part-I)	Ch 17 (Cengage website)
9	June 14	LP: Simplex Method (Part-II)	Ch 17 (Cengage website)
10	June 19	Nonlinear Optimization Models	Ch 8
11	June 21	Simulation	Ch 12
Common Final Examination* (June 28 - 30) (Date, Time and Location to be announced on registrar's/university website)			

* If the student wrote both term tests, Coverage will be Chapters 8, 12, 15 and 17. If a student misses a term test (or both term tests), his/her final exam will be a more balanced comprehensive exam that covers all chapters.

RELEVANT UNIVERSITY/LA&PS/SCHOOL REGULATIONS

Applicable to all ADMS and DEMS courses

RELEVANT UNIVERSITY REGULATIONS

All students are expected to familiarize themselves with the following information:

- [Student Rights & Responsibilities](#)
- [Academic Accommodation for Students with Disabilities](#)
- [University & School Policies](#)

Deferred Standing

In addition to the information under the above link.

NOTE: The deferred examination will be cumulative/comprehensive and cover all material for the semester. This applies to all students writing a deferred Final Exam, including those who wrote both Test 1 and Test 2.

To be clear, deferred exams in this course will be cumulative exams.