

**Commerce 4QA3
Operations Modelling and Analysis
Winter 2020 Course Outline**

**Operations Modelling and Analysis Area
DeGroot School of Business
McMaster University**

COURSE OBJECTIVE

- *Obtain understanding of the fundamental issues arising in the operations functional area and its interfaces with other functional areas in an organization.*
- *Review decision areas contained in the production/operations function.*
- *Study quantitative tools available for analysis and decision support in this functional area.*

INSTRUCTOR AND CONTACT INFORMATION

CO1: Tue 11:30 – 14:20

Dr. Amr Elbadan

Instructor

elbadaam@mcmaster.ca

Office: TBA

Office Hours: TBA

Class Location: CNH

102

CO2: Fri 11:30 -14:20

Dr. Amr Elbadan

Instructor

elbadaam@mcmaster.ca

Office: TBA

Office Hours: TBA

Class Location: CNH

102

Patrick Beeson

TA

beesonp@mcmaster.ca

Office: TBA

Office Hours: TBA

Srinivas Tamvada

TA

tamvadss@mcmaster.ca

Office: TBA

Office Hours: TBA

COURSE ELEMENTS

Credit Value: 3	Leadership: NO	IT skills: Yes	Global view: Yes
A2L: Yes	Ethics: No	Numeracy: Yes	Written skills: Yes
Participation: NO	Innovation: NO	Group work: No	Oral skills: Yes
Evidence-based: NO	Experiential: No	Final Exam: Yes	Guest speaker(s): No

COURSE DESCRIPTION

Operations management is the set of activities that create value in the form of goods and services by transforming inputs into outputs. Operations managers plan, direct and control activities related to production of goods and services. The activities entailing operations management are product and service design, project management, total quality management and quality control, capacity and process planning, location, layout, forecasting, inventory management, aggregate planning, material requirement planning, just in time and scheduling. Quantitative techniques such as simulation, linear programming and decision theory are widely used as decision aids in operations management.

LEARNING OUTCOMES

Upon completion of this course, students will be able to complete the following key tasks:

- Demonstrate basic understanding of the operations function, the decisions areas encompassing it within a firm, and the linkages between the firm's strategy and its detailed processes.
 - Use quantitative procedures and tools available for analysis and decision support in the operations function.
-

COURSE MATERIALS AND READINGS

Required:

Course Materials Are Available on Avenue To Learn

- <http://avenue.mcmaster.ca>

Book:

“Operations Management: Sustainability and Supply Chain Management”,
13/e, by Heizer et al., Pearson., 2020

Custom Courseware

- Available at the bookstore or online

Optional:

EVALUATION

Learning in this course results primarily from in-class discussion and participation in examples / mini cases analyzed in class. The balance of the learning results from the readings, and assignments that analysis analytical techniques using dedicated software or Excel, and data analysis individually. All work is evaluated on an individual basis.

Missed tests/exams/quizzes will receive a grade of zero unless the student has submitted and been approved for a Notification of Absence or MSAF.

Late assignments will be penalized 5% of their mark for each day to a maximum of two days. If an assignment is late by more than two days, it will receive a zero grade (students with approved Notification of Absence or MSAF are excepted).

Your final grade will be calculated as follows:

Components and Weights

<i>Components</i>	<i>Weight</i>
Assignments (5)	25%
Exam 1	20%
Exam 2	20%
Final Exam	35%
Total	100%

NOTE: The use of a McMaster standard calculator is allowed during examinations in this course. See McMaster calculator policy.

Communication and Feedback

Students who wish to correspond with instructors or TAs directly via email must send messages that originate from their official McMaster University email account. This protects the confidentiality and sensitivity of information as well as confirms the identity of the student. Emails regarding course issues should NOT be sent to the Area Administrative Assistants. Instructors are required to provide evaluation feedback for at least 10% of the final grade to students prior to Week #9 in the term. Instructors may solicit feedback via an informal course review with students by Week #4 to allow time for modifications in curriculum delivery.

Course Deliverables

Assignment #1

This assignment is worth **5%** of your final grade and will be marked individually. It covers topics in weeks 1-2 inclusive. The Assignment should be submitted on avenue to learn before the lecture on week 3 refer to the course schedule.

Assignment #2

This assignment is worth **5%** of your final grade and will be marked individually. It covers topics in weeks 3-4 inclusive. The Assignment should be submitted on avenue to learn before the lecture on week 5 refer to the course schedule.

Assignment #3

This assignment is worth **5%** of your final grade and will be marked individually. It covers topics in weeks 5-6 inclusive. The Assignment should be submitted on avenue to learn before the lecture on week 7 refer to the course schedule.

Assignment #4

This assignment is worth **5%** of your final grade and will be marked individually. It covers topics in weeks 7-8 inclusive. The Assignment should be submitted on avenue to learn before the lecture on week 9 refer to the course schedule.

Assignment #5

This assignment is worth **5%** of your final grade and will be marked individually. It covers topics in weeks 9 to 11 inclusive. The Assignment should be submitted on avenue to learn before the lecture on week 12 refer to the course schedule.

Exam #1

The exam accounts for **20%** of your final grade. It will assess the material covered in weeks 1 to 5 inclusive. This exam is individual, in class work. If you miss the exam due to a valid reason, approved for a Notification of Absence or MSAF, then **Exam 2** will be used to calculate your grade (or a make up exam could be administered).

Examinations are closed book. The use of a McMaster standard calculator is allowed during examinations. You are expected to know the formula for each method (example: the formula for each forecasting method).

Exam #2

The exam accounts for **20%** of your final grade. It will assess the material covered in weeks 7-9 inclusive. This exam is individual, in class work. If you miss the exam due to a valid reason, approved for a Notification of Absence or MSAF, then **Exam 1** will be used to calculate your grade (or a make up exam could be administered).

Examinations are closed book. The use of a McMaster standard calculator is allowed during examinations. You are expected to know the formula for each method (example: the formula for each forecasting method).

Final Exam

This exam will be cumulative and worth **35%** of your final grade. Examinations are closed book. The use of a McMaster standard calculator is allowed during examinations. Tables or extra material will be provided if needed, but formulas will NOT be provided where you are expected to know the formula for each method (example: the formula for each forecasting method).

ACADEMIC INTEGRITY

You are expected to exhibit honesty and use ethical behaviour in all aspects of the learning process. Academic credentials you earn are rooted in principles of honesty and academic integrity.

Academic dishonesty is to knowingly act or fail to act in a way that results or could result in unearned academic credit or advantage. This behaviour can result in serious consequences, e.g. the grade of zero on an assignment, loss of credit with a notation on the transcript (notation reads: "Grade of F assigned for academic dishonesty"), and/or suspension or expulsion from the university.

It is your responsibility to understand what constitutes academic dishonesty. For information on the various types of academic dishonesty please refer to the *Academic Integrity Policy*, located at:

www.mcmaster.ca/academicintegrity

The following illustrates only three forms of academic dishonesty:

1. Plagiarism, e.g. the submission of work that is not one's own or for which other credit has been obtained.
2. Improper collaboration in group work.
3. Copying or using unauthorized aids in tests and examinations

AUTHENTICITY/PLAGIARISM DETECTION

In this course we will be using a web-based service (Turnitin.com) to reveal authenticity and ownership of student submitted work. Students will be expected to submit their work electronically either directly to Turnitin.com or via Avenue to Learn (A2L) plagiarism detection (a service supported by Turnitin.com) so can be checked for academic dishonesty. Students who do not wish to submit their work through A2L and/or Turnitin.com must still submit an electronic and/or hardcopy to the instructor. No penalty will be assigned to a student who does not submit work to Turnitin.com or A2L.

All submitted work is subject to normal verification that standards of academic integrity have been upheld (e.g., on-line search, other software, etc.). To see the Turnitin.com Policy, please go to;

www.mcmaster.ca/academicintegrity.

ONLINE COURSE COMPONENTS

In this course we will be using Avenue to Learn and McMaster email. Students should be aware that when they access the electronic components of this course, private information such as first and last names, user names for the McMaster e-mail accounts, and program affiliation may become apparent to all other students in the same course. The available information is dependent on the technology used. Continuation in this course will be deemed consent to this disclosure.

If you have any questions or concerns about such disclosure, please discuss this with the course instructor.

REQUESTING RELIEF FOR MISSED ACADEMIC WORK

Students may request relief from a regularly scheduled midterm, test, assignment or other course components. Please refer to the policy and procedure on the DeGroote website at the link below;

<http://ug.degroote.mcmaster.ca/forms-and-resources/misled-course-work-policy/>

STUDENT ACCESSIBILITY SERVICES

Students who require academic accommodation must contact Student Accessibility Services (SAS) to make arrangements with a Program Coordinator. Academic accommodations must be arranged for each term of study. Student Accessibility Services can be contacted by phone 905-525-9140 ext. 28652 or e-mail sas@mcmaster.ca.

For further information, consult McMaster University's Policy for Academic Accommodation of Students with Disabilities:

<http://www.mcmaster.ca/policy/Students-AcademicStudies/AcademicAccommodation-StudentsWithDisabilities.pdf>

ACADEMIC ACCOMMODATION FOR RELIGIOUS, INDIGENOUS OR SPIRITUAL OBSERVANCES (RISO)

Students requiring academic accommodation based on religious, indigenous or spiritual observances should follow the procedures set out in the RISO policy. Students requiring a RISO accommodation should submit their request, including the dates/times needing to be accommodated and the courses which will be impacted, to their Faculty Office normally within 10 days of the beginning of term or to

the Registrar's Office prior to their examinations. Students should also contact their instructors as soon as possible to make alternative arrangements for classes, assignments, and tests.

<https://multifaith.mcmaster.ca/riso>

POTENTIAL MODIFICATION TO THE COURSE

The instructor reserves the right to modify elements of the course during the term. There may be changes to the dates and deadlines for any or all courses in extreme circumstances. If either type of modification becomes necessary, reasonable notice and communication with the students will be given with explanation and the opportunity to comment on changes. It is the responsibility of the student to check their McMaster email and course websites weekly during the term and to note any changes.

RESEARCH USING HUMAN SUBJECTS

All researchers conducting research that involves human participants, their records or their biological material are required to receive approval from one of McMaster's Research Ethics Boards before (a) they can recruit participants and (b) collect or access their data. Failure to comply with relevant policies is a research misconduct matter. Contact these boards for further information about your requirements and the application process.

McMaster Research Ethics Board (General board): <https://reo.mcmaster.ca/>

Hamilton Integrated Research Ethics Board (Medical board): <http://www.hireb.ca/>

ACKNOWLEDGEMENT OF COURSE POLICIES

Your enrolment in Commerce 4QA3 will be considered to be an implicit acknowledgement of the course policies outlined above, or of any other that may be announced during lecture and/or on A2L. **It is your responsibility to read this course outline, to familiarize yourself with the course policies and to act accordingly.**

Lack of awareness of the course policies **cannot be invoked** at any point during this course for failure to meet them. It is your responsibility to ask for clarification on any policies that you do not understand.

COURSE SCHEDULE

**Commerce 4QA3
Operations Modelling and Analysis
Winter 2030 Course Schedule**

WEEK	DATE CO1	DATE CO2	TOPICS	CHAPTERS	ASSIGNMENTS
1	Jan, 7	Jan, 10	Introduction, Operations strategy	Ch 1	
2	Jan, 14	Jan, 17	Project management Assignment 1 issued	Ch 3	
3	Jan, 21	Jan, 24	Total quality management (TQM) and Statistical process control (SPC)	Ch 6	Assignment 1 due
4	Jan, 28	Jan, 31	Process strategy: Capacity Planning, Constraint Management Decision Making Tools Assignment 2 issued	Ch 7 Module A	
5	Feb, 4	Feb, 7	Facility Location, Facility Layout	Ch 8-9	Assignment 2 due
6	Feb, 11	Feb, 14	Exam-1 Forecasting Aggregate planning - I Assignment 3 issued	Ch 4 Ch 13	
	Feb, 18	Feb, 21	<i>Midterm Recess – NO CLASS</i>		
7	Feb, 25	Feb, 28	Linear Programming Aggregate planning - II	Module B Ch 13	Assignment 3 due
8	Mar, 3	Mar, 6	Transportation Network flow planning Assignment 4 issued	Module C	
9	Mar, 10	Mar, 13	Inventory Management, Quantity discounts model	Ch 12	Assignment 4 due
10	Mar, 17	Mar, 20	Exam-2 Inventory Management, Sales and Operations Planning		
11	Mar, 24	Mar, 27	Sales and Operations Planning, Material Requirement Planning Assignment 5 issued	Ch 14	
12	Mar, 31	Mar, 3	Scheduling, JIT System	Ch 15 - 16	Assignment 5 due
13	April, 7	April, 10	No Classes		
			Final Exams		