

COURSE OBJECTIVE

- Develop an understanding of the activities operations managers engage in.
- Learn to solve the important problems in operations management.
- Become familiar with the tools and software used to solve operations management problems.

TEACHING STAFF AND COURSE INFORMATION

Instructor: Dr. John Miltenburg, miltenb@mcmaster.ca, office hours - tba
 Teaching Assistant: tba, ? @mcmaster.ca, Zoom office hours tba

Class Times and Rooms:

O650 C01/ ? – RJC 214, Tuesday 2:30 to 4:20 and Thursday 11:30 to 1:20
 O650 C02/ ?– RJC 236, Monday 11:30 to 1:20 and Wednesday 8:30 to 10:20

Course Website: <http://avenue.mcmaster.ca>

Questions about course content should be posted on the Avenue Discussion Board. Other students, the teaching assistant, and the instructor can answer and discuss the questions for the benefit of the entire class.

COURSE ELEMENTS

Credit Value: 3	Leadership: No	IT skills: Yes	Global view: Yes
WebCT: Yes	Ethics: No	Numeracy: Yes	Written skills: Yes
Participation: No	Innovation: Yes	Group work: No	Oral skills: No

COURSE DESCRIPTION

Operations managers design and improve, and plan and control activities related to the production of products and services. The activities comprising operations management are product and service design, project management, quality improvement and control, capacity and process planning, lean systems, location, layout, forecasting, inventory management, supply chain, long-, medium- and short-term planning, and scheduling. In this course students develop an understanding of these activities, learn to solve problems associated with these activities, and become familiar with software used by operations managers.

LEARNING OUTCOMES

Upon completion of this course, students will:

- Understand the operations view of processes and supply chains, the operations function, the activities comprising operations management, and the linkages between business strategy and operations activities;
- Be able to use standard tools for operations analysis and decision making.

REQUIRED COURSE MATERIALS

Textbook: A textbook is **recommended** but not required. The quizzes and exams are open-book and open-computer (if they are written at the scheduled times for the entire class) so a textbook can be helpful.

Krajewski, L. and M. Malhotra, Operations Management: Processes and Supply Chains, Pearson/Prentice Hall, 13th edition, 2022. (The 10th or 11th or 12th editions can also be used.)

The bookstore sells an etext for about \$90. Used textbooks may be available from students who took the course previously.
 Software: Students must have an up-to-date computer and Excel. Whenever possible students should use McMaster University’s MS Office 365 (<https://www.mcmaster.ca/uts/>). The following software is used in the course. Some software will not work on old computers running old operating systems.

1. Excel templates (available on Avenue): several templates adapted from a package of templates called OM Explorer
2. MS Project (free at portal.azure.com, or remote application at vlab.business.mcmaster.ca): project management software
3. MegaStat (available on Avenue): business statistics in Excel
4. MyMaps in Google Maps (available on the internet): Geographic information system

EVALUATION

Cases 1, 2	2×3 marks each	During class; RJC; attendance with simple participation earns 3 marks; if a case is missed the marks are automatically added (no permission is needed) to the next exam
Quizzes 1, 2, 3	3×3 marks each	Quizzes are open book/computer; if a quiz is missed the marks are automatically added (no permission is needed) to the next exam
Group project	15 marks	
Exams 1, 2	30, 40 marks	RJC; exams are open book/computer and are normally not cumulative; exams are scheduled by the MBA Office; there are no alternate days or times to write an exam
Total	100 marks	

The total mark in the course will be converted to a letter grade using the following standard scheme.

<u>Letter grade</u>	<u>Percent</u>	<u>Points</u>	<u>Letter grade</u>	<u>Percent</u>	<u>Points</u>	<u>Letter grade</u>	<u>Percent</u>	<u>Points</u>
A+	90 – 100	12	B+	75 – 79	9	F	00 – 59	0
A	85 – 89	11	B	70 – 74	8			
A-	80 – 84	10	B-	60 – 69	7			

Questions about evaluation (e.g. a grade on an exam, quiz) must be discussed in person with the teaching assistant first and then the instructor within 10 days of a grade being posted on Avenue. Grades will not be discussed after the 10-day period.

Lectures, podcasts, practice problems

- Detailed notes for the lectures, cases, and practice problems are available at Avenue > Content.
- Podcasts are available on YouTube for all lectures, quizzes, exams, etc. and are accessed through Avenue > Content.
- Practice problems for self-study are assigned on the schedule below. Additional problems may be assigned during the course.

Cases

- Cases are in-class at RJC. Cases require a computer and advance preparation. Students need to attend class and participate in each case.
- If a case is missed then the 3 marks for the case are automatically added (i.e. no permission is needed) to the next exam (e.g. if case 1 in about week 3 is missed then exam 1 in about week 4 is worth 30 + 3 = 33 marks).

Quizzes

- Quizzes help students keep up with their studies and prepare for the exams. At assigned times (see course schedule) when selected lectures and practice problems should be complete, students take a 25-minute, 14-question, on-line on-Avenue quiz. Quiz questions are randomly assigned and are based on the lecture notes, the textbook, and the practice questions. Questions are descriptive and short calculations. An illustrative quiz 1 is posted on Avenue.
- Each quiz question has a mark of zero or one, so each quiz has 14 marks. However, the maximum mark for a quiz is 10. Students who correctly answer 10 or more questions get 10 out of 10 or 100%. Students, for example, who correctly answer 8 questions get 8 out of 10 or 80%. Quiz marks are posted on Avenue. Quizzes are not returned. Students can review their quiz with the teaching assistant within 10 days of the mark being posted on Avenue. Quizzes will not be reviewed after this 10-day period.
- If a student misses a quiz or receives a mark of zero on a quiz, then the marks for the quiz are automatically added (i.e. no permission is needed) to the next exam (e.g. if quiz 1 at about the end of week 2 is missed then exam 1 in about week 4 is worth 30 + 3 = 33 marks).
- In the quizzes (and on the exams) students ‘cannot go back’. This means students must answer each question when it appears on their computer screen; when students move to the next question they cannot return to a previous question to check their work or answer the question later. This is done to discourage students from sharing their answers. This ‘cannot go back’ feature is demonstrated on the illustrative quiz 1 posted on Avenue.

Group Project

Students may select their own group of 3 students; if they do not then the instructor will assign 3 students to a group. (A group of 4 students will only be allowed in exceptional circumstances.) It is not possible to switch groups. Groups must study the problem in the project, learn the software required to complete the project, do the necessary analysis, prepare a PowerPoint presentation, select software to record a group presentation (e.g. MS teams, Zoom, Camtasia, etc.), record and edit their presentation, drop their project and presentation files in the Avenue dropbox, etc. all as per the project instructions at Avenue > Content. The group project grade depends on the quality, quantity, and professionalism of the analytical work and the presentation material. It does not depend on the students’ speaking skills or style.

Exams

- Exam 1 is the midterm exam. It is not written during class time; it is written at RJC at a time scheduled by the MBA Office. Exam 2 is the final exam; it is written at RJC at a time scheduled by the MBA Office. Exams are normally not 'cumulative'. The material examined is from the lectures, practice problems, and textbook. Exams are open book and open computer. Students must use their own computer. Students can also use a textbook, notes and calculator. Each exam consists of randomly assigned descriptive questions, randomly assigned calculation questions, randomly assigned Excel template-, MS Project-, MegaStat- and Google Maps-questions. An illustrative exam 1 is posted on Avenue. In the exams, just as in the quizzes, students 'cannot go back'. This means students must answer the question when it appears on their computer screen; when students move to the next question they cannot return to a previous question to check their work or answer the question later. This is done to discourage students from sharing their answers. Answers are checked carefully to make sure students work individually. The 'cannot go back' feature is demonstrated on the illustrative exam 1 posted on Avenue.

- A student's computer must have good internet access, be able to access the school's vlab (virtual computer lab), run all the course software, access Avenue to download questions and data, upload answer files to Avenue dropboxes. No extra time, help or marks will be given because of problems with computers, software, or internet access.

- Exam marks are posted on Avenue. Exams are not returned. Students can review their exam 1 with the teaching assistant within 10 days of the mark being posted on Avenue. Exam 1 will not be reviewed after this 10-day period.

- Students who miss Exam 1 and have applied and been granted relief by the MBA Student Experience - Academic Office, will write a different Exam 2. (It is called Exam 1,2.) It will cover all the material in the course.

- **There are no alternate days or times to write Exam 1 or Exam 2 or Exam 1,2. No exceptions will be given.**

Communication and Feedback

Students who are uncomfortable directly approaching an instructor regarding a course concern may send a confidential email to the Operations Management Area Chair, Professor Verma (mverma@mcmaster.ca) or the Associate Dean (adbusac@mcmaster.ca). Students' e-mails to instructors or TAs must originate from their official McMaster University e-mail account. This protects the confidentiality of information and confirms the identity of the student. E-mails regarding course issues should NOT be sent to the Area Administrative Assistant.

Academic Dishonesty

It is the student's responsibility to understand what constitutes academic dishonesty. Please refer to the University Senate Academic Integrity Policy at: <http://www.mcmaster.ca/policy/Students-AcademicStudies/AcademicIntegrity.pdf> This policy describes the responsibilities, procedures, and guidelines for students and faculty should a case of academic dishonesty arise. Academic dishonesty is defined as to knowingly act or fail to act in a way that results or could result in unearned academic credit or advantage. Please refer to the policy for a list of examples. The policy also provides faculty with procedures to follow in cases of academic dishonesty as well as general guidelines for penalties. For further information related to the policy, please refer to the Office of Academic Integrity at: <http://www.mcmaster.ca/academicintegrity>

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MISSED EXAMINATION/ TESTS/ CLASS PARTICIPATION

When students miss a regularly scheduled midterm, test or class participation for legitimate reasons as adjudicated by the MBA Student Experience - Academic Office, the weight for that midterm/test/participation will be distributed across other evaluative components of the course at the discretion of the instructor. Documentation explaining an absence must be provided to the MBA Student Experience - Academic Office within five (5) working days upon returning to school.

To document absences for health related reasons, please provide the Petition for Relief for MBA Missed Term Work and the McMaster University Student Health Certificate, which can be found on the DeGroot website at: <http://www.degroote.mcmaster.ca/MBA/registration.html>

University policy states that a student may submit a maximum of three (3) medical certificates per year after which the student must meet with the Director of the program.

To document absences for reasons other than health related, please provide documentation supporting the reason for the absence and the Petition for Relief for MBA Missed Term Work at:
<https://mbastudent.degroote.mcmaster.ca/exams/term-work-midterms/>

Students unable to write a midterm at the posted exam time due to the following reasons: religious; work-related (for part-time students only); representing university at an academic or varsity athletic event; conflicts between two overlapping scheduled midterm exams; or other extenuating circumstances, have the option of applying for special exam arrangements. Such requests must be made to the MBA Student Experience - Academic Office at least ten (10) working days before the scheduled exam along with acceptable documentation. Instructors cannot themselves allow students to unofficially write make-up exams/tests. Adjudication of the request must be handled by the MBA Student Experience - Academic Office.

All applications for deferred and special final examination arrangements must be made to the MBA Student Experience - Academic Office. Failure to meet the stated deadlines may result in the denial of these arrangements. Deferred examination privileges, if granted, must be satisfied during the examination period at the end of the term immediately following. There will be one common sitting for all deferred exams. Please refer to the MBA Calendar for further details.

If any exam is missed without a valid reason, students will receive a grade of zero (0) for that component.

STUDENT ACCESSIBILITY SERVICES

Student Accessibility Services (SAS) offers various support services for students with disabilities. Students are required to inform SAS of accommodation needs for examinations on or before the last date for withdrawal from a course without failure (please refer to official university sessional dates). Students must forward a copy of such SAS accommodation to the instructor immediately upon receipt. If a student with a disability chooses NOT to take advantage of an SAS accommodation and chooses to sit for a regular exam, a petition for relief may not be filed after the examination is complete. The SAS website is: <http://sas.mcmaster.ca>

Potential Modifications to the Course

The instructor and university reserve the right to modify elements of the course during the term. The university may change 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.

Course Schedule

Week, day	Lecture topics* and reading		Practice Problems 'Practice Problem Solutions' are on Avenue.
	12th edition	13th edition	
Week 1a, May 9,10 Week 1b, May 11,12	Course outline Ch. 1: Intro. to Operations Ch. 3: Process Strategy Ch. 7 (254-258): Layout	Ch. 1: Operations to Create Value Ch. 2: Process Strategy & Analysis (53-67) Ch. 6 (231-236): Line layout	Ch.1: disc. questions 3, 6; prob. 2, 4, 8 Ch. 3: disc. question 5; prob. 1, 3*, 4* (*also use Excel template) Ch. 7: prob. 5, 6
Week 2a, May 16,17 Week 2b, May 18,19	Ch. 2: Project Management	Ch. 7: Project Management	Ch.2: prob. 1*, 5*, 8*, 17 (*also use Excel templates). Also solve 1 and 5 (with the additional resource information) in MSProject using start date of Feb. 2, 2014.
Week 2c, May 20	Quiz 1: Fri. May 20, 4:30 to 5:00 pm; 25 minutes, online, computer required, open book; covers weeks 1 and 2		
Week 3a May 24,27	Ch. 4: Process Analysis Ch. 5: Quality	Ch. 2: Process Strategy & Analysis (67-88) Ch. 3: Quality (103-114)	Ch. 4: prob. 3, 6, 11, 20, 21
Week 3b, May 25,26	Case 1: Project Management		Case 1: MSProject
Week 4a, May30,31	Ch. 5: Quality	Ch. 3: Quality	Ch. 5: prob. 4, 5*, 6*,7*,8*,23* (*also use Excel templates)
Week 4b, June 1,2	Case 2: Quality Management		Case 2: Quality Management
Week 4c, June 4	Exam 1: Sat. June 4, 9:00 am to 11:00 am; 110 minutes, computer required, open book; covers weeks 1 to 4		
Week 5a, June 6,7 Week 5b, June 8,9	Ch. 6: Capacity; Ch. 7: Constraints Ch. 8: Lean	Ch. 5: Capacity; Ch. 6: Constraints Ch. 4: Lean	Ch. 6: prob. 1,5, 8; Ch.7: prob. 3,4; Ch. 8: --
Week 6a, June 13,14 Week 6b, June 15,16	Ch. 9: Inventory	Ch. 9: Inventory	Ch. 9: prob. 2, 4, 8, 10, 11, 16, 22, 23
Week 6c, June 17	Quiz 2: Fri. June 17, 4:30 to 5:00 pm; 25 minutes, computer required, open book; covers weeks 5 and 6		
Week 7a, June 20,21 Week 7b, June 22,23	Ch. 14: Forecasting	Ch. 8: Forecasting	Ch. 14: 7*, 11* (*also use Excel templates) Ex. 14.1 on last page of Ch.14 course notes
Week 7c, June 25	Group projects: Group projects are due on Sat. June 25 (before 11:59 pm)		
Week 8a, June 27,28 Week 8b, June 29, July 1	Ch 10: SC Design Ch. 11: SC Location Ch. 12: SC Integration Ch. 13: SC Sustainability	Ch. 12: Supply Chain Design Ch. 13: SC Logistic Networks Ch. 14: SC Integration Ch. 15: SC Sustainability	Ch. 10: prob. 2, 3 Ch. 11: prob. 1, 4, 7, 12, 18 (use template); GoogleMaps: Practice Problems in course notes Ch. 12: 1, 4, 5; Ch. 13: disc.quest. 2, prob. 2
Week 8c, July 1	Quiz 3: Fri. July 1, 4:30 to 5:00 pm; 25 minutes, online, computer required, open book; covers weeks 7 and 8		
Week 9a July 4,5 Week 9b July 6,7	Ch. 15,16: Planning (monthly, weekly); Scheduling (daily)	Ch. 10, 11: Planning (monthly, weekly); Scheduling (daily)	Ch.15: prob. 2*, 11*, 12, 16* (*also use Excel templates), Johnson's Rule problem; Ch. 16: prob. 1, 8*, 14*, 21
Week 10	(Final) Exam 2: tentatively scheduled (by MBA Office) for Mon. July 11?? starting at 9:00 am (i) Exam 2 – 110 minutes, computer required, open book, covers weeks 5 to 9, does not cover weeks 1 to 4 or (ii) Exam 1,2 – only for students who miss Exam 1 with relief from MBA Academic Office – 110 minutes, computer required, open book, covers entire course (weeks 1 to 9)		