Commerce 4QA3:
Operations Modeling and Analysis
Fall 2013 –Course Outline

September 18, 2013

Course Objective

- To gain an understanding of the principles and important problems in operations management.
- To become familiar with the analytical tools used to solve operations management problems.

Prerequisites

Commerce 2QA3 and registration in any Commerce or Engineering and Management program; or one of Stats 2MB3, 3J04, 3N03 or 3Y03 and registration in any Engineering and Management program.

Teaching Staff and Course Information

Instructor	Teaching Assistant
Dr. John Miltenburg	**Jiaojing (Rose) Li**
miltenb@mcmaster.ca	li422@mcmaster.ca
Office Hours*: Mondays, 2:30-3:30, BSB-108	Office Hours*:
Fridays, 12:30-2:30, DSB-230	Mondays, 2:30-3:30, BSB-108

* Whenever possible questions about course content should be posted on the Avenue Discussion Board.

Class Times and Room:
Monday 11:30 am to 2:20 pm, room BSB-108

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

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
Evidence-based:	Yes	Experiential:	Yes	Final exam:	Yes	Guest speaker(s):	No

Course Description

Operations managers plan, organize, staff, direct and control the activities involved in the production of products and services. These activities include project management, product and service design, quality management and control, facility layout, capacity and process planning, location, lean systems, supply chain management, forecasting, inventory management, operations planning, material requirements planning, and scheduling. Analytical tools used in operations modeling and analysis include waiting lines, simulation, linear programming, and decision theory.

Learning Outcomes

Upon completion of this course, students will be able to complete the following:
- Understand the importance of operations, the decisions areas that comprise operations, and the linkages between operations and the other functions in the firm.
- Design processes in operations and participate in the planning, organizing, staffing, directing and control of operations.
- Use analytical and computer tools to model and analyze processes in operation.

Required Course Materials

Custom Courseware textbook (available at the bookstore): Commerce 4QA3 Custom Courseware – approximately 320 pages; includes lecture notes, and excerpts from (KRM) Krajewski ,L. and Ritzman, L. and Malhotra, M., Operations Management: Processes and Value Chains, 8th & 10th editions, Pearson/Prentice Hall (2007, 2013).

The (optional) textbook website is: www.pearsonhighered.com/krajewski/   click on 'edition 8/e or 10/e'

Software: Excel Data Analysis and Excel Solver
   OM templates*: 21 Excel templates adapted from a package of 41 templates called OM Explorer.
   SimQuick*: An Excel-based simulation package.
   *This software is in a zip folder at Avenue > Contents > Week 0.

Evaluation

Component	Mark	
Weekly class attendance	7	1 mark per week for any 7 (of 10) weeks except week 1 and week 7 (Midterm Exam). Students must not arrive late or leave before the break (at the 2-hour point of the 3-hour class).
Weekly online quiz	7	Quiz: 15-minute, 10-questions, 10-marks, open-textbook, online-on-Avenue, written between 8am and 2pm on each Monday classday (see Schedule). A total of 70 or more quiz marks during the term earns 7 marks, 64 quiz marks earn 6.4 marks, 58 quiz marks earns 5.8 marks, etc.
Midterm Exam	Max $\{43\%MT+ 43\%Final, 38\%MT+ 48\%Final\}$	In-class, problems - ~2 hours, computer - ~1 hour
Final exam		Scheduled by the university: problems - ~2 hours, computer - ~1 hour
Total	**100**	

At the end of the course, overall percentage grades are converted as follows to a letter grade.

Letter Grade	Percentage	Letter Grade	Percentage
A+	90 – 100	C+	67 – 69
A	85 – 89	C	63 – 66
A-	80 – 84	C-	60 – 62
B+	77 – 79	D+	57 – 59
B	73 – 76	D	53 – 56
B-	70 – 72	D-	50 – 52
		F	00 – 49

Readings, Assignments, Exams

Students should attend class. Students should bring their textbook and computer to class. Students should read the assigned material in the textbook before class (see Schedule). Between 8am and 2pm on each classday each student should complete the on-Avenue quiz on the assigned reading. It is possible for students to miss 3 classes and quizzes and still get full marks for attendance and quizzes. Other than this there is no possibility to 'make up' marks for missed classes or quizzes, etc.

There are no hand-in assignments. Practice Problems for self-study are assigned. Some problems are assigned on the Schedule. Additional problems may be assigned during the course. All problems and solutions are on Avenue.

The Midterm Exam and Final Exam are 3 hours long. Exams will not be comprehensive; rather each will cover approximately half of the material in the course. Students may use their textbook during the exams and a McMaster standard calculator. See the McMaster calculator policy at:
    http://www.mcmaster.ca/policy/Students-AcademicStudies/examinationindex.html
Students cannot share a textbook or a calculator during an exam. Notes written in the textbook must not be excessive. No papers, 'post-it' tabs, etc. may be inserted into the textbook. Students must bring pencils and ink pens to the exams. Exams will include a 'computer part' which will test students' proficiency with the software in the course. The 'computer part' of each exam will be done in the KTH-B123 computer lab. The computers in the KTH lab are PCs and use Excel 2003. Students should familiarize themselves with these computers before each exam.

Students who are unable to write the Midterm Exam for approved business or personal reasons may be permitted to write a make-up exam. These students must see the instructor at least 10 days before the exam, explain their situation, show documentation in support of their situation, and receive the instructor's permission. This must be done in person; it cannot be done by e-mail. **Students who miss the Midterm Exam and the make-up exam will write a Final Exam that covers all the material in the course.**

Problems with grades (attendance, quiz, or exam) must be resolved with the instructor within 2 weeks of the grades being posted on Avenue.

Communication and Feedback

1. Students who are uncomfortable directly approaching an instructor regarding a course concern may send a confidential email to the Operations Management Area Chair, Professor Abad (abad@mcmaster.ca).
2. 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.
3. Instructors are required to provide evaluation feedback for at least 10% of the final grade to students prior to Week #8 in the term. If after speaking with the instructor students wish to have a course component (i.e. midterm exam) re-evaluated, then they should complete the following process.
• Complete the form at http://www.mcmaster.ca/policy/Students-AcademicStudies/Form_A.pdf
• The component must be worth 10% or more of the final grade in the course
• Students pay a fee of $50 in Gilmour Hall #209 (receipt is then brought to APO)
• The Area Operations Management Chair will seek out an independent adjudicator to re-grade the component

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

Missed Examination / Test / Class Participation

1. Students cannot use the automated MSAF (McMaster Student Absence Form) process in this course.
2. Students requesting relief from the midterm exam MUST report to the APO (Academic Programs Office) to discuss their situation and will be required to provide appropriate supporting documentation. Failure to do so will result in a grade of zero for the midterm exam. The approved McMaster Medical Form must be used to document absence for health related reasons. Documentation explaining such an absence must be provided to the APO within five working days upon returning to school.
3. Students who require accommodations to meet a religious obligation or to celebrate an important religious holiday must make their requests in writing within three weeks of the start of term to the APO.
4. Students seeking relief due to: work-related (for part-time students only) commitments; representing the university at an academic or varsity athletic event; and/or conflicts between two (or more) overlapping scheduled midterm exams, have the option of applying for special exam arrangements. Such requests must be made to the APO at least ten working days before the scheduled exam along with acceptable documentation. Instructors cannot themselves allow students to unofficially write make-up exams. Adjudication of the request must be handled by the APO. Arranging special exams may not be feasible in some situations. At most there will be only one common sitting for any special exam.
5. It is the prerogative of the instructor to determine the appropriate relief for missed work in this course. **Students who miss the Midterm Exam will write a Final Exam that covers all the material in the course.** The instructor may distribute the weight for any other the missed work across other evaluative components of the course.

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 course work at the outset of term. Students must forward a copy of such SAS accommodation to the instructor normally, within the first three (3) weeks of classes by setting up an appointment with the instructor. 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 for Commerce 4QA3 – fall 2013		

Date	Topics/Readings/Quiz (from Custom Courseware textbook)	Practice Problems Problems and Solutions are on Avenue. Solve manually and using course software
1. Sept. 9	1. Project Management (KRM-8e, ch.3)	Problems 1.1 to 1.4
2. Sept. 16	1. Project Management (continued) <u>Quiz on #1</u> 2a. Process Analysis (KRM-8e, ch.5) 2b. Quality(KRM-10e, ch.5)	Problems 2a.1 to 2a.5 Problems 2b.1 to 2b.6
3. Sept. 23	<u>Quiz on #2a,b</u> 2b. Quality (continued) 3. Layout	Problems 3.1 to 3.4
4. Sept. 30	3. Layout (continued) <u>Quiz on #4</u> 4. Constraint Management (KRM-8e, ch.7)	Problems 4.1 to 4.3
5. Oct. 7	<u>Quiz on #5a,b</u> 5a. Waiting Lines 5b. Simulation	Problems 5a.1 to 5a.3 Problems 5b.1 to 5b.3
Monday October 14, Thanksgiving Day holiday, No class		
6. Oct. 21	<u>Quiz on #6a,c</u> 6a. Lean (KRM-8e, ch.9) 6b. Location 6c. Supply Chain (KRM-8e, ch.10)	Problems 6b.1 to 6b.5 Problems 6c.1 to 6c.4

7. Oct. 28   <u>Midterm Exam</u> covering weeks 1 to 6
    11:30 to 1:30 – 2 hour problem part in the classroom
    1:30 to 3:30 (40 students) or 5:30 to 7:30 (40 students)* – 1 hour computer part in KTH-B123 computer lab		

8. Nov. 4	<u>Quiz on #8</u> 8. Inventory	Problems 8.1 to 8.11
9. Nov. 11	8. Inventory (continued) <u>Quiz on #9</u> 9. Forecasting	Problems 9.1 to 9.2
12. Nov. 18	9. Forecasting (continued) <u>Quiz on #12</u> 12. Linear Programming	Problems 12.1 to 12.3
10. Nov. 25	<u>Quiz on #10a,b</u> 10a. Operations Planning 10b. Resource Planning (KRM-8e, ch.15)	Problem 10a.1 Problems 10b.1 to 10b.4
11. Dec. 2	10b. Resource Planning (continued) <u>Quiz on #11</u> 11. Scheduling (KRM-8e, ch.16)	Problems 11.1 to 11.5

Dec. ? <u>Final exam</u> (scheduled by the university) covering weeks 8 to 12
    The final exam has a problem part and a computer part. The computer part will be in the KTH-B121 and –B123
    computer labs on Thu. Dec. 5, 10am-12noon** (or, if the student desires, on Mon. Dec. 2, 5:30 to 7:30pm**)		

<u>The KTH-B123 computer lab has 40 computers</u>
* About half of the class can write the one-hour computer part of the exam during a 1:30 to 3:30 time period; the other half will write during a 5:30 to 7:30 time period. Students can select their preferred time period on Avenue on a first-come-first-served basis beginning after the Mon. Oct. 7 class.
** Students should write the one-hour computer part of the exam on Thu. Dec. 5 during a 10am to 12 noon time period. Or, if desired, students can write on Mon. Dec. 2 during a 5:30 to 7:30 time period. Students can select their preferred time period on Avenue after the Mon. Nov. 18 class.