TENTATIVE
Last update: August 26, 2013

Course Description:
This SOM core course focuses on understanding the levers for structuring, managing, and improving a business organization’s - private or public - recurring business processes to achieve competitive advantage in responsiveness, price, quality, and variety of products and services. Processes within organizations, as well as between organizations, i.e., supply chains, are explored. The fundamental principles underlying state-of-the-art practices, such as Quick Response, Just-in-Time and Time-Based Competition, are explored so that students learn to critically evaluate these and other operational improvement programs.

Students learn the basics of how to manage the operations of a firm, and how operational issues affect and are affected by the many business decisions they will be called upon to make or recommend in their careers. As such, this course is essential to students aspiring to become consultants, entrepreneurs, or general managers in public and private sectors. A working knowledge of operations is also indispensable to those interested in marketing, finance, and accounting, where the interface between these functions and operations is critical. Finally, an understanding of how firms become market leaders through operations is important in investment careers.

Prerequisites:
Grade C or better in OM 210 and sophomore standing are required.\(^1\)

Previous or concurrent exposure to basic statistics and elementary algebra are required. Students also need to be comfortable using MS Excel and a word processor of their choice.

This course requires a minimum grade of C to satisfy SOM degree requirements, and students will not be permitted to make more than three attempts to achieve a C or higher in this course.\(^2\)

Course Web Page: https://mymasonportal.gmu.edu/webapps/portal/frameset.jsp (Blackboard)

Instructor: Ayhan Aydin

Office: Enterprise Hall 153
e-mail: aaydin2@gmu.edu
Voice: 703.993.4756
Office Hours: Tuesday 11:00am - 12:00pm, or by appointment

Sections:
- OM 301 - 003: Tuesday and Thursday, 1:30-2:45, Robinson Hall B104

\(^1\)Prerequisites are strictly enforced by the Office of Academic Advising.

\(^2\)Effective Fall 2010, registration in this course will be prohibited beyond three attempts that resulted in a grade lower than C. If you have questions about this policy, please see an academic advisor in ENT 008.
OM 301 - 004: Tuesday and Thursday, 3:00-4:15, Robinson Hall A111

Course Material:

- Lecture Slides/Class Handouts
- Any material posted on Blackboard

Grading:

<table>
<thead>
<tr>
<th>Component</th>
<th>Weight</th>
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<tbody>
<tr>
<td>Class Contribution</td>
<td>10%</td>
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<tr>
<td>Group Homework and Quizes</td>
<td>10%</td>
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<tr>
<td>Midterm 1</td>
<td>20%</td>
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<tr>
<td>Midterm 2</td>
<td>20%</td>
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<tr>
<td>Final Exam</td>
<td>40%</td>
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<tr>
<td>Total</td>
<td>100%</td>
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- The midterms are not cumulative, i.e., the first midterm includes the subjects that are covered from the start of the semester, whereas the second midterms covers only the subjects covered after the first midterm. The final exam is comprehensive: everything is included.
- The target assignment for letter grades will be as in the following. However, a curve may be used only there to help you, i.e., it may be only used to decrease the minimum requirements for a letter grade.

<table>
<thead>
<tr>
<th>Grade</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>A</td>
<td>90-100</td>
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<tr>
<td>B</td>
<td>80 - 89.99</td>
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<tr>
<td>C</td>
<td>70 - 79.99</td>
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<tr>
<td>D</td>
<td>60 - 69.99</td>
</tr>
<tr>
<td>F</td>
<td>Below 59.99</td>
</tr>
</tbody>
</table>

Class Contribution:

- You should find a seat you are comfortable with and stay there the entire semester. This will help me in correctly assessing your contribution.
- Use a name card every class till the second midterm.
- You will be able to make class contribution if you come to class prepared.
- I am genuinely curious about your thoughts about different topics. Be prepared to be cold-called.
- The quality of your contribution is more important than the quantity of your “airtime.” Please listen to your peers carefully and try to enrich and carry forward the discussion by asking questions, answering questions, bringing in real-world examples pertinent to the topic.3

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3Unexcused absences, not paying attention, sleeping, playing on laptop, talking, texting, doing work from other classes, or anything else that detracts from the in-class learning environment are not acceptable. Please also do not expect me to act as a disciplinarian. Professors do not always confront students who are acting inappropriately in the classroom because it is extremely difficult to do so without undermining the learning environment. This does not mean that such behaviors are ignored.
Honor Code:

George Mason University shares in the tradition of an honor system that has existed in Virginia since 1842. The Honor Code is an integral part of university life. On the application for admission, students sign a statement agreeing to conform to and uphold the Honor Code. Students are responsible, therefore, for understanding the provisions of the code. In the spirit of the code, a student’s word is a declaration of good faith acceptable as truth in all academic matters. Cheating and attempted cheating, plagiarism, lying, and stealing of academic work and related materials constitute Honor Code violations. To maintain an academic community according to these standards, students and faculty must report all alleged violations of the Honor Code to the Honor Committee. Any student who has knowledge of, but does not report, an Honor Code violation may be accused of lying under the Honor Code. All students are expected to adhere to this code. All acts of academic dishonesty will be dealt with in accordance with the provisions of this code.

Violation of the honor code in this class includes but not limited to the following:

- Discussing group homework with people not in your group before the submission.
- Using any assignment solution prepared by earlier cohorts in your assignments.
- Signing a group work that you have not contributed to.
- Using any material that is not allowed in exams.
- Copying someone else’s work in exams or allowing someone else to use your work.
- Removing an exam from the classroom and sharing information about the exam with other students.

Homework Assignments:

- Homework assignments will be posted on Blackboard at least one week before they are due.
- Homework will be turned in at the start of the class in hard copy. Therefore, you should make copies for your use during the class and in preparing for exams.
- Please use a cover sheet for your homework, which includes the following information:
  - Name of the course, section number, semester and year
  - Name of the assignment
  - Submission date
  - List of group members’ names and signatures
  - Honor code statement: “We pledge our honor that we have not violated the Honor Code during this assignment”
  - GMU School of Management logo (optional).

You are free to use - you do not have to - the cover page template posted on Blackboard (under the “Course Content”).

- Late homework will not be accepted.
- Homework must be submitted in paper form, in person.
- If there are any page and other content limitations on the assignment write-up, they will be strictly enforced. Submitted work which does not comply with such limitations will be penalized.
• Please be concise, write clearly, legibly or use a word processor, keep figures and graphs clean, staple, put page numbers, and comply with page limitations. Using bullets and sub-bullets may help you better convey your ideas.

• I am looking for work done carefully and thoughtfully. I expect you to show your work and rigorously defend your answers. Effort will factor heavily into homework grades.

• It is a good idea to periodically check your email and Blackboard for updates during each week.

Quizzes:

• There will be several pop-up quizzes throughout the semester about the homework assignment due that day, at the beginning of the class. Please make sure you have contributed enough to group assignments and that you studied the group's submitted solutions.

• I will not announce them beforehand.

• I will drop one of your quiz scores. For example, if we have 5 pop-up quizzes during the semester, I will take the highest 4 scores and use their average for your overall quiz score.

• There are no make-ups for the quizzes. If you miss one, I will count that one as your dropped quiz.

Groups:

• On all group assignments you must work in a group of size 4 to 5. You may not work alone on group assignments. You may only put your name on the group write-up if you contributed.

• You are allowed to form groups only within your section.

• If you do not have a group by the end of the first week, email me immediately - I will assign you randomly to a group. I suggest you to find your own group for logistical issues should they arise.

• Submit ONE document per group containing the assignments due each week.

Attending other sections:

I expect you to attend the section in which you are enrolled. However, on a limited basis I will allow you to move between sections as needed, but subject to the following:

• Students enrolled in the section they are attending have seating priority.

• Assignments must be turned in at the first class session attended by any of your group members.

• You must send me an email indicating the alternative section you wish to attend for the week, and why.

Exams:

During the semester, there will be two midterms given during the regular class period and one final examination. Exams may consist of multiple choice, true/false, short answer, and
problem type questions and will include quantitative and qualitative questions. The midterms and final examination are closed book and closed note exams. However, I may allow one (8.5 x 11 inches) two sided (front and back) original hand-written or typed formula sheet to each exam. Information presented/discussed in class, slides, and any material posted on Blackboard may be included on the examinations. You must bring a blank Scantron, calculator, and 2 pencils to each exam. Cell phones, laptops, pagers, or any other transmitting devices are not permitted during the exam at any time.

The final examination is given only at the specified time as published by the University Registrar. If you cannot take the final or midterms at the time shown on the schedule, do not register for the class. No makeups will be given without valid, per university policy, documented excuse. Missed exams not covered by a valid excuse (per University policy) will result in a grade of zero for the exam and probable failure for the class. Make-up exams may be given at the discretion of the instructor, given documentation is provided to support the valid excuse.

Communication:

All communications from me to you will be directed via e-mail or Blackboard announcements. I will address all of my e-mails and reply ONLY to your @gmue.edu e-mail address for concerns of privacy and confidentiality. If you use another e-mail account as your primary e-mail, please be sure to forward your gmu e-mail to that account.

Special Needs:

All academic accommodations due to disability should be arranged through the Office of Disability Services (ODS). If you are a student with a disability and you require academic accommodations, please contact the ODS at 703-993-2474. Please also inform me by the second week of class.

General Expectations:

- Takeaways: Much of what we will do in class is learning how to dissect and analyze an operation. Do not expect for there to be one or two key takeaways in each class. Usually there will be many small lessons, and as these build over the quarter you will begin to think operationally.

- Workload: You should expect to spend between 4-6 hours per week on the course outside of class.

- Division of work: Each group member should actively work on every part of the assignment that is due. Otherwise, I find that students only come to understand the part of the course dealing with assignments they worked on, and do not learn the other parts. This spells disaster during class discussions and at exam time.

- Varied students: Please remember that this is a core course that surveys a wide range of topics, for students having a great variety of backgrounds, skills (quantitative versus qualitative), and interests. There are times when I need to cover or review some things in order to ensure that everyone is on-board.
Daily Schedule (Tentative)

Introduction to Operations Management and Business Process Flows: Preliminaries

Session 1 (Tue, Aug 27):
- What is Operations Management?
- Primary Decisions in Operations Management
- Business Process Flows

Session 2 (Thur, Aug 29):
- Operations Strategy
- Operations Quadrangle
- Little’s Law

Capacity Analysis and Management

Session 3 (Tue, Sept 3):
- Productivity
- Representing Processes
- Process Choice

Session 4 (Thur, Sept 5):
- Steady State Capacity Analysis
- Capacity Expansion
- Break-even and Crossover Analysis for Capacity Decisions

Session 5 (Tue, Sept 10):
- Inventory Build-up Graphs
- Batching

Session 6 (Thur, Sept 12):
- Linear Programming: A Product Portfolio Analysis
- A Capacity Analysis with a Linear Program (Bagel Shop)

Dealing with Variability

Session 7 (Tue, Sept 17):
- Sources and Effects of Variability
- Measuring Variability
- Buffering

Session 8 (Thur, Sept 19):
- Analyzing Queues
- Types of Queues

Session 9 (Tue, Sept 24):
- Types of Queues (cont.)
- Pooling
• Critical Path Analysis - The Customer Experience

**Lean Operations & Push/Pull Systems**

Session 10 (Thur, Sept 26):
• Why and Why not Lean?
• Just-in-Time and Toyota Production System
• What are Pull Systems? Examples

Session 11 (Tue, Oct 1): Review

**MIDTERM 1:**

Session 12 (Thursday, October 3, 2013): Closed book and notes.

**Inventory Management Concepts**

Session 13 (TBD): No class
Session 14 (Thur, Oct 10):
• Classification of Inventory
• Cycle Stock: The Economic Order Quantity Model
Session 15 (Tue, Oct 15):
• Safety Stock: News-vendor Model
Session 16 (Thur, Oct 17):
• Periodic Review Inventory Systems
• Continuous Review Inventory Systems

**Supply Chains**

Session 17 (Tue, Oct 22):
Session 18 (Thur, Oct 24):
Session 19 (Tue, Oct 29):

**Forecasting and Managing Demand**

Session 20 (Thur, Oct 31):
Session 21 (Tue, Nov 5):
Session 22 (Thur, Nov 7): Review for Midterm 2

**MIDTERM 2:**

Session 23 (Tuesday, November 12, 2013): Closed book and notes.

**Project Management**

Session 24 (Thur, Nov 14):
Session 25 (Tue, Nov 19):
Quality Management

Session 26 (Thur, Nov 21):
Session 27 (Tue, Nov 26):
Session 28 (Tue, Dec 3):
Session 29 (Thur, Dec 5): Review for Final

FINAL EXAM:

Section 003: 1:30-4:15 pm, Tuesday, December 17, 2013
Section 004: 1:30-4:15 pm Thursday, December 12, 2013