2017

MGMT 551-01 Operations Analysis

Lifang Wu
wul@xavier.edu

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INTRODUCTION TO OPERATIONS

Operations analysis is the study of operations management with the aim of identifying opportunities for improvement. Operations management refers to the systematic design, direction, and control of business processes that transform inputs into services and products for external, as well as internal customers. As such, this MBA core course is truly about “how to do business” and “how to create better performance.” In particular, we will introduce various concepts and decision-making techniques related to issues such as operations strategy, performance measurement, process improvement, quality control, lean management, inventory, and supply chain management.

COURSE OBJECTIVE

The purpose of this introductory course is to provide MBA students with a thorough introduction to the concepts and analytical skills of operations management needed to understand and improve the business of various organizations. The course aims to expand their managerial (soft) skills as well as hands-on analytical (hard) skills so that they understand how to deliver superior organizational performance in practical business settings. In particular, we focus on developing student strategic thinking and critical thinking capabilities, in terms of understanding how and when to implement the tools of operational analysis, ensuring that enterprise resources are used as efficiently and effectively as possible.

STUDENT LEARNING OUTCOMES (SLO)

At the conclusion of the course our students are expected to be able to:
1. Explain the fundamental concepts and issues of operations management.
2. Describe how operations decisions relate to the overall competitive strategy of business.
3. Perform quantitative analysis to design, manage, and improve processes.
4. Apply operations knowledge to business decision making.
5. Interpret the changing environment and the ethical obligations of organizations in operating global supply chains.
6. Present and justify operations analysis results effectively.

COURSE MATERIALS

Core Materials:
All required course materials will be made available through Canvas. The core teaching materials for the course are all electronic documents posted on our course website canvas.xavier.edu. These digital documents, mostly written by the instructor, include teaching notes, lecture PPT slides, teaching examples, practice problems, short cases, homework problems, and other selected journal articles. You can read online materials directly. Alternatively, you can also use a binder (with 2 inch capacity) or a computer device (either a laptop or tablet) to hold all the (otherwise loose) teaching documents you download from our course website. In order to succeed in taking this online course, you will need to closely follow our teaching calendar especially assignment due dates, making sure you are frequently engaged in online interactions and do your best work.

Other Materials:

Additional cases, examples, book chapters, and articles are also posted on the course website as well (labelled as further readings). Unless stated clearly, these documents are supplemental and not required for the quizzes or the exams. I will also add latest examples and other relevant documents as the course progresses. I can also email advanced materials on specialized topics such as constraint management, process mapping, balanced scorecard, quality control, and supply chain management to those who need to apply them in practice.

Please note there is NO text book used or required in this online course. All the digital documents posted on Canvas are sufficient to allow you to achieve the course learning objectives. For those who would prefer to use/read a traditional textbook. The recommended book is Collier and Evans, OM 6 (or OM5, an earlier version), 2017, South-Western, Cengage Learning.

COMMUNICATIONS

Effective and efficient communication is one of the most important elements for superb online learning experience. I can be reached by using the following communication methods:

<table>
<thead>
<tr>
<th>Communication Methods</th>
<th>Time Needed to Get a Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Post on discussion board</td>
<td>1-2 days for current topics</td>
</tr>
<tr>
<td>Canvas comments</td>
<td>Longer for old discussion topics</td>
</tr>
<tr>
<td>2. Email (including Canvas message)</td>
<td>Less than 24 hours, mostly several hours</td>
</tr>
<tr>
<td>3. Text message (use my cell number)</td>
<td>Normally less than 30 minutes</td>
</tr>
<tr>
<td>4. Phone call (call my cell number)</td>
<td>Immediate response</td>
</tr>
</tbody>
</table>

My preferred communication method is email. You can certainly text me or call me if you need to get a faster response from me or if you simply did not get my email replies within the normal time range (please do not call me after 9PM or before 8AM). When taking this online class, please always consider using email (or the Canvas message system) to reach me first. All assignment feedback/annotation is provided within the original file you submitted online. You can also find Canvas comments in assignment areas for other grading remarks.

You will soon learn that my process of delivering the teaching content is at 3 sigma quality level. That means, approximately 3 defects occur for every 1000 information pieces. Please contact me for clarification when you encounter these defects or discrepancies. Sometimes the assignment due date can be labelled inconsistently (one place says one due date, other places say a different due date), please contact me immediately when you see that. Do not assume the later due date is always applicable (I understand most people like having some extra time).
COURSE REQUIREMENTS

Time Commitment Expectations: 10-15 Hours per Week

Please note this online course covers exactly the same materials as the main campus 16-week face-to-face course which I have been teaching for many years. This online version lasts eight weeks in duration (it is quite condensed, please be prepared), with a few hours required prior to the beginning of the course for introductory activities, and is entirely (100%) online with no required online meetings. Plan to spend a minimum of 10 hours per week (probably more during some weeks) working on the course. Participants are expected to log on to the course 4+ days per week to complete the required learning activities and relevant assignments. In particular, we have 13 learning modules (excluding term project) in 8 weeks (approximately two modules in each week). For each module I expect you to spend approximately 2-3 hours on completing the learning activities, and another 2-4 hours on class review and assignments. You should expect to log on our canvas system on a daily basis if your schedule permits. Try to let 48 hours be your maximum absence from the course. That means, the maximum time allowed between two log-ins is 2 days (this is the lowest frequency). Please check your email and the course announcement area regularly.

All course modules are asynchronous which means there are no required live online lessons scheduled. You can always schedule your learning activities at your own pace. While expecting you to contact me at any time, I will also hold weekly virtual office hours upon your requests. You can call in or use/ask for the Zoom link to connect.

A special note on assignment deadlines: The deadlines for all assignments in this course must be followed strictly (U.S. Eastern Time). No late work will be accepted. To avoid foreseeable or unforeseeable schedule conflicts or technical difficulties, you are recommended to work ahead.

Technical Requirements

- Hi-speed internet connection (DSL, LAN, or cable connection desirable)
- Access to Canvas through a supported Web browser (Internet Explorer, Chrome, Firefox, Safari)
- Your computer device should have a webcam and a microphone to allow you to attend Zoom sessions
- Check your computer against Xavier’s suggested minimum computer requirements: http://www.xavier.edu/ts/students/Computer-Recommendations.cfm

If you need technical assistance at any time during the course: For technical help with Canvas click on the “Help” button located on the left side of the screen (under “inbox”). You will then see a drop down menu with a variety of options including a 24/7 phone or chat option. For any other technical assistance during the course, or to report a technical problem, contact the university HELP Desk at (513) 745-HELP/4357 or visit the HELP Desk Web site.

Participating Threaded Discussions: 10×6=60 points (Individual Based)

This course contains 100% online classes which do not require traditional or virtual face-to-face classroom meetings. As such, discussions are the way we “participate” in classes where conceptual topics are covered. There are five learning modules with discussion post requirement (plus the self-
introduction posts, with a total of six). It's important that you post thoughtful messages that move the conversation forward in some way. “Yeah, I agree,” and “Me, too” are not acceptable postings and will not earn any points. Simple repeating of given info in the case w/o your own analysis would not help either. Your participation in discussions can earn you points for each discussion. After the due date for the discussion, you will be graded on your overall participation in that discussion thread. Late posts are welcome for their intellectual value but will not be considered in your grade.

Your posts should show that you have read the material in the text as well as your classmates’ posts and have applied all of that to the question at hand. One key grading component for discussion posts is students need to demonstrate excellence in applying the key concepts/tools introduced in that module for analyzing various business scenarios. That has to be completed on basis of deep understanding of the relevant concepts/tools. You should do more than merely spit back what the text says; you should engage with the material by analyzing and interpreting it. Your posts should be grammatically clear enough not to present anyone with a problem in understanding your point. You should include a substantial amount of information in your initial post. You should follow the following expectations:

- Follow online netiquette (included in this syllabus)
- Initial postings are completed early in the week (at least two days before due)
- Follow up posts (generally at least two per discussion) are timely (not past due)
- Content is complete, on-point, thoughtful and offers new ideas. No specific length requirement is imposed (you do need to make a substantial case, see samples posted online)
- Supporting detail is abundant and appropriate (that is, references from the pieces read and/or other sources)
- Content often encourages further discussion on the topic or follows up on others' thoughts
- Postings are characterized by originality, engagement and relevance to the topic
- Postings demonstrate an understanding of the material assigned and familiarity with the ideas of the classmates (in other words, it's obvious that you've read and understood both the required reading assigned and what your peers have written in their postings)

Assessment method: Online discussion posts are normally due at the end of the weekend (Sunday). No late posts will be accepted. Your online discussion grade is based on the following tentative grading rubric:

<table>
<thead>
<tr>
<th>Points</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>9-10</td>
<td>Demonstrates excellence in grasping/applying key concepts; makes a substantial case of personal views with sufficient depth and length; ideas are expressed clearly, concisely, and logically; uses appropriate vocabulary.</td>
</tr>
<tr>
<td>7-8</td>
<td>Shows evidence of understanding most major concepts; makes argument with insufficient analysis or evidences; offers an occasional divergent viewpoint or challenge; analysis does not have sufficient depth or length; shows some skill in support for opinions; some signs of disorganization with expression; transition wording may be faulty.</td>
</tr>
<tr>
<td>5-6</td>
<td>Has mostly shallow grasp of the material; rarely takes a stand on issues (repeats given information in the case); offers inadequate levels of support; the posts are a little too short to make a significant case; expression seems disjointed; overuse of the simple sentence and a redundancy with words and commentary; paragraphs often appear unrelated to each other.</td>
</tr>
</tbody>
</table>
Module Quizzes: $10 \times 14 = 140$ points (Individual Based)

At the end of most online modules you will need to take an open-book and open-note quiz covering materials just discussed in that online module (mainly about concepts covered in teaching notes and PPT presentations). Problem solving and calculations are not required for the quizzes. Each online quiz includes 10 multiple-choice questions. The 14 quizzes (including syllabus quiz) are individual-based and you should not seek assistance from any other people or sources. **Understanding the key concepts of the teaching materials (mostly teaching notes, PPT slides, excluding optional articles) we cover in that module is required before you take the quiz. Make sure you only have one attempt and you cannot redo the quiz after one attempt even if you are not satisfied with the score.** Please complete the quiz before the deadline. Spend no more than one minute on each question, and you need to finish the quiz in 15 minutes. Test will save and submit automatically when time expires. Also, once started, the quiz must be completed in one sitting. Please contact the Canvas help line if you experience any technical difficulties.

**Assessment method:** Online quizzes are normally due at the end of the module week (Friday). Remember the quizzes only test your conceptual understanding on course materials including teaching notes and PPT presentations. No late quizzes will be graded or accepted. Quizzes include ten multiple-choice questions (one point each question, with a total of 10 per quiz). Your quizzes will be graded by the computer automatically.

Homework Assignments: $10 \times 8 = 80$ points (Individual Based)

There will be homework assignments for eight online modules which mainly include workout problems. These modules focus on quantitative topics/techniques. It is essentially important for everyone to do all these problems on an individual basis in order to fully understand the methodology and apply well in completing your term project. Although everyone is encouraged to collaborate with classmates on assignments, each student needs to write his/her own copy and no part of the homework can be copied. **The homework can be typed or hand written, please submit either Word or PDF files to Canvas. No other file format will be accepted. You can use smart phone apps like Scanner Pro ($3.99) to scan your handwritten homework and create pdf files.** Please be advised you are expected to show your work with clear labels. Homework containing only final numbers (even correct answers) or information unreadable will get 0%. Late homework is not accepted (the submission link will be closed). If you have potential schedule conflict, you need to work ahead to complete assignments earlier. All assignments for this course will be submitted electronically through Canvas unless otherwise instructed.

**Assessment method:** Homework assignments are normally due at the end of the weekend (Sunday). No late homework is accepted. Solution process and correct answers must be presented in a professional appearing and well-labeled format. I expect you to show your work in a logic way, step by step, to develop the final solutions. If you need to use some intermediate solution to get the final answer, you need to show how to get that intermediate solution as well. Missing steps will result in losing points. Please see the teaching example solution and practice problem solutions for sample work. Partial credit will be given. Points will be taken off if your homework includes wrong answers, missing critical steps or processes, and other essential information. Please do not just list
Each homework problem is worth certain points (from 2 to 5 points, depending on the difficulty level and length). All problems will be graded for correctness and presentation. If the solution is illegible, then zero point will be given. If the problem solution is only partially completed, then the corresponding point for the missing part of the solution will be taken off directly. For example, for a 4 point workout problem with two questions, only one is answered. Then 2 points will be taken off. The grading rubric only applied to the remaining 2 points.

<table>
<thead>
<tr>
<th>Presentation (All steps Shown in an organized way)</th>
<th>Incorrect</th>
<th>Partially correct</th>
<th>Fully correct</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poor</td>
<td>0%</td>
<td>30%</td>
<td>50%</td>
</tr>
<tr>
<td>Some work shown, But could be more clear/explicit</td>
<td>30%</td>
<td>50%</td>
<td>70%</td>
</tr>
<tr>
<td>Good</td>
<td>40%</td>
<td>70%</td>
<td>100%</td>
</tr>
</tbody>
</table>

**Correctness (Work shown and supports the answer)**

**Project: 120×1=120 points (Individual Based)**

All students need to start working on the course project in week #2. You need to pick a project topic (e.g., managerial tools or concepts introduced in the course) and investigate the issue in a practical business environment. In the project proposal, you need to answer a number of essential questions such as what, who, why, when, and how of the project activities. Please follow the proposal outline for developing the proposal. The proposal will be due at the end of week #4. Then, at the end of the term (week #8), you need to turn in a 6-page project report to report the main outcomes from the project. You also need to record a 5-minute video presentation to present your project findings. Again, no late work will be accepted.

You video presentation should discuss your decisions, after-thoughts, takeaways, or lessons. A simple narrative of what you did is not considered as analysis. The project proposal is worth 20 points, the project report is worth 80 points, and the video presentation is worth another 20 points. There are 120 total points for the project submissions.

Assessment method: See separate grading rubric files for proposal, report, and presentation video assessment details. The quality of your technical analysis (including breadth and depth) will be the key, which highly depends on the way how you apply your course knowledge for solving the problems or creating new insights.

**Bonus Points: up to 4 points (Individual Based)**

Up to 4 bonus points will be given based on your completions of course surveys, concerning mid-term course evaluation (2 points) and final course evaluation (2 points).

Assessment method: Anyone completing the anonymous course evaluation will receive the full bonus points, regardless of the input she/he provided.
GRADING SCALE

All grades will be posted on Canvas (Grades Tab). It is your responsibility to contact me before the course ends if you have any missing or incorrect scores on Canvas website.

<table>
<thead>
<tr>
<th>Grading Components</th>
<th>Points</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Threaded Discussions</td>
<td>10×6=60</td>
<td></td>
</tr>
<tr>
<td>2. Online Quizzes</td>
<td>10×14=140</td>
<td></td>
</tr>
<tr>
<td>3. Homework Assignments</td>
<td>10×8=80</td>
<td></td>
</tr>
<tr>
<td>4. Project Assignments</td>
<td>20+80+20=120</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>400</strong></td>
<td></td>
</tr>
</tbody>
</table>

Grading Scale

- **A:** 94% and above
- **A–:** 90% – 93.9%
- **B+:** 85% – 89.9%
- **B:** 80% – 84.9%
- **B–:** 76% – 79.9%
- **C (including + / –):** 60% – 75.9%
- **F:** below 60%

COURSE CALENDAR

<table>
<thead>
<tr>
<th>Week</th>
<th>Module</th>
<th>Topics</th>
<th>Important Due Dates</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
<td>Start Here Module</td>
<td>Quiz due on 10/13 (Friday)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Posts due on 10/15 (Sunday)</td>
</tr>
<tr>
<td>1</td>
<td>1</td>
<td>Introduction to Operations</td>
<td>Quizzes due on 10/20 (Friday)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Posts due on 10/22 (Sunday)</td>
</tr>
<tr>
<td>2</td>
<td>3</td>
<td>Capacity Analysis</td>
<td>Quizzes due on 10/27 (Friday)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>HWs due on 10/29 (Sunday)</td>
</tr>
<tr>
<td>4</td>
<td>4</td>
<td>Flow Time &amp; Variability Analysis</td>
<td>Quiz due on 11/10 (Friday)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>HW due on 11/12 (Sunday)</td>
</tr>
<tr>
<td>3</td>
<td>5</td>
<td>TOC and Process Design</td>
<td>Quizzes due on 11/03 (Friday)</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>Project Management</td>
<td>Posts due on 11/05 (Sunday)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>HW due on 11/05 (Sunday)</td>
</tr>
<tr>
<td>4</td>
<td>7</td>
<td>Performance Management</td>
<td>Quiz due on 11/10 (Friday)</td>
</tr>
<tr>
<td></td>
<td>8</td>
<td>Term Project Proposal</td>
<td>HW due on 11/12 (Sunday)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Proposal due on 11/12 (Sunday)</td>
</tr>
<tr>
<td>5</td>
<td>9</td>
<td>Quality Management</td>
<td>Quizzes due on 11/17 (Friday)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>HWs due on 11/19 (Sunday)</td>
</tr>
<tr>
<td>10</td>
<td></td>
<td>Statistical Process Control</td>
<td></td>
</tr>
</tbody>
</table>
|   |   | Lean Six Sigma Strategy | Quizzes due on 12/01 (Friday)  
|   |   |                           | Posts due on 12/03 (Sunday)  
|   |   | Inventory Analysis       | HW due on 12/03 (Sunday)  
| 6 | 11 |                            |  
| 7 | 13 | Supply Strategies         | Quizzes due on 12/08 (Friday)  
|   |   |                            | Posts due on 12/10 (Sunday)  
| 14 |   | Supply Chain Management   | HW due on 12/10 (Sunday)  
| 8 | 15 | Term Project Wrap-up      | Project presentation and project  
|   |   |                            | final report both due on 12/17  
|   |   |                            | (Sunday)  

**Netiquette**

The discussion boards are created to provide an opportunity for students to actively engage in meaningful conversation on a particular topic or issue. You are encouraged to provide your honest viewpoint, but be respectful of the views of your classmates.

**Do’s**
1. Do use correct grammar and spelling.
2. Do read the prompt, reflect on what you would like to say, and review what you’ve written before posting!
3. Do respect the privacy, beliefs, and opinions of your classmates.
4. Do challenge each other’s ideas but not each other personally.
5. Do remember to treat others as you would want to be treated.
6. Do stick to the discussion prompt at hand when posting to a forum.
7. Do use humor and sarcasm carefully. Students cannot see your facial expressions or hear any voice inflections.

**Don’ts**
1. Don’t type in ALL CAPS. This is regarded as shouting.
2. Don’t rant or flame. This is not the place to vent your anger or start a fight.
3. Don’t make inappropriate comments. Objectionable, sexist, or racist language will not be tolerated.

All discussion boards are public forums, so whatever is posted can be seen by everyone in the course, including the instructor. If you want to send a private message, use individual email. The course question discussion board is a public space for conversations with your classmates on any topic or question.

**Learning Assistance Center**

The Learning Assistance Center (LAC) provides support services to facilitate learning. The LAC has two main purposes: tutoring and disability services. The tutoring services include subject specific tutoring, drop-in sessions, study skills assistance, and Supplemental Instruction (SI). For students with documented disabilities, services include accommodations such as extended time on exams, reduced distraction testing environment, note-taking assistance, and assistive technology.
Services are provided in a positive and encouraging environment, which promotes appreciation for diversity and cura personalis. Students in an online course can contact the LAC at (513) 745-3280 to set up an appointment. The LAC is located in the Conaton Learning Commons room 514. http://www.xavier.edu/lac/

**Writing Center**

The Writing Center offers free one-on-one tutoring on writing assignments for all Xavier students. Students in an online course can contact the Center at (513) 745-2875 to set up an appointment. Sessions can be conducted in multiple ways, including discussions by phone and by email at writingcenter@xavier.edu. The Writing Center is located in the Conaton Learning Commons room 400. http://www.xavier.edu/writingcenter/

**Mathematics Tutoring Lab**

The Mathematics Tutoring Lab offers mathematics tutoring for all Xavier students. Students in an online course can contact the Lab at (513) 745-3069 to set up an appointment. The Mathematics Tutoring Lab is located in the Conaton Learning Commons room 419. http://www.xavier.edu/mathematics/Math-Lab.cfm

**University Policies**

**Academic Honesty Policy**

The pursuit of truth demands high standards of personal honesty. Academic and professional life requires a trust based upon integrity of the written and spoken word. Accordingly, violations of certain standards of ethical behavior will not be tolerated at Xavier University. These include theft, cheating, plagiarism, unauthorized assistance in assignments and tests, unauthorized copying of computer software, the falsification of results and material submitted in reports or admission and registration documents, and the falsification of any academic record including letters of recommendation. All work submitted for academic evaluation must be the student's own. Certainly, the activities of other scholars will influence all students. However, the direct and unattributed use of another's efforts is prohibited, as is the use of any work untruthfully submitted as one's own.

**Copyright Policy**

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copyright holder. The instructor assumes no responsibility for individuals who improperly use copyrighted material placed on the web site.

Students with Disabilities

Any student who feels he/she may need an accommodation based on the impact of a documented disability should notify the course instructor and contact Cassandra Jones in the Learning Assistance Center at 513-745-3280 or e-mail jonesc20@xavier.edu to coordinate reasonable accommodations.

(The End)