## Course Outline: Summer 2020 – Section 61 [See Canvas for Updated Information]

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<tr>
<th>Session</th>
<th>Description [see Canvas]</th>
<th>Required Readings [see Canvas]</th>
<th>Assignments due [see Canvas]</th>
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<td>1</td>
<td>Modules 1&amp;2</td>
<td>Finish reading first half of the goal graphic novel</td>
<td>Background survey (Canvas)</td>
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<tr>
<td></td>
<td>- Introduction to Operations</td>
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<td></td>
<td>- Process Measures and Little’s Law</td>
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<td>2</td>
<td>- Aligning Strategy and Operations. Focus</td>
<td>Cases: Wriston Manufacturing, PCS</td>
<td>Little’s Law quiz</td>
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<td></td>
<td>- Process Flow Analysis. Targeting Improvement</td>
<td>PCS (team submission)</td>
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<td>3</td>
<td>- Flow Time &amp; Capacity Analysis</td>
<td>Finish reading the goal graphic novel</td>
<td>Case: Pizza Pazza</td>
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<td>4</td>
<td>- Flow Time &amp; Capacity Analysis: Peak Loads</td>
<td>Case: National Cranberry Cooperative</td>
<td>Capacity and Flow Time quiz</td>
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<td>Module 3: Lean Operations</td>
<td>National Cranberry Cooperative (team submission)</td>
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<td>- Paradigm of Lean Operations</td>
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<td>5</td>
<td>- Variability and Quality at the Source</td>
<td>Case: Toyota Motor Manufacturing</td>
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<td>- Midterm review</td>
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<td></td>
<td>Midterm exam (online)</td>
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**COURSE OUTLINE: SUMMER 2020 – SECTION 61 [SEE CANVAS FOR UPDATED INFORMATION]**

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<th>Session</th>
<th>Module and Description [see Canvas]</th>
<th>Required Readings [see Canvas]</th>
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<td><strong>Module 4: Capacity Management in Services</strong>&lt;br&gt;- Capacity, queueing &amp; flow time analysis&lt;br&gt;- Design of service systems: economies of scale</td>
<td>Case: <em>To pool or not to pool</em></td>
<td>Midterm exam due</td>
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<td>7</td>
<td>- Design of service systems: impact of priorities and limited buffers&lt;br&gt;<strong>Module 5: Data Driven Operations</strong>&lt;br&gt;- Managing processes with variable output</td>
<td>Cases: <em>The BAT Case, Quality Wireless A&amp;B</em>&lt;br&gt;Queuing quiz</td>
<td>The BAT Case (team submission)</td>
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<td>8</td>
<td>- Data driven decision making&lt;br&gt;<strong>Module 6: Supply Chain Management</strong>&lt;br&gt;- Optimal service levels</td>
<td>Case: Innovation at Uber</td>
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<td>9</td>
<td>- Economies of scale &amp; cycle stock&lt;br&gt;- Uncertainty, safety stock</td>
<td>Case: Palu Gear</td>
<td>Quality management quiz</td>
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<tr>
<td>10</td>
<td>- Pooling: Centralization &amp; Postponement&lt;br&gt;- Course wrap-up &amp; review for final</td>
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<td>Inventory team problem set</td>
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Operations Management 430

Summer 2020

Instructor: Anton Braverman

Course Description and Objectives

This course provides a general introduction to operations management. Operations management is the design and control of business processes, that is, the recurring activities of a firm. Along with finance and marketing, operations is one of the three primary functions of a firm. At the risk of being simplistic, one may say that marketing generates the demand, finance provides the capital, and operations produces the product or delivers the service. More generally, operations spans the entire organization: COOs are in charge of R&D, design/engineering, production operations, marketing, sales, support and service.

This course aims to (1) familiarize you with the major operational problems and issues that confront managers, and (2) provide you with language, concepts, insights and tools to deal with these issues in order to gain competitive advantage through operations.

This course should be of particular interest to people aspiring a career in designing and managing business processes, either directly (V.P. of Ops, COO) or indirectly (e.g., management consulting). The course should also be of interest to people who manage interfaces between operations and other business functions such as finance, marketing, managerial accounting and human resources. Finally, a working knowledge of operations, which typically employs the greatest number of employees and requires the largest investment in assets, is indispensable for general managers and entrepreneurs.

We will see how different business strategies require different business processes, and vice versa, how different operational capabilities allow and support different strategies to gain competitive advantage. A process view of operations will be used to analyze different key operational dimensions such as capacity management, flow time management, and supply chain management.

Required Texts

Required materials available at the bookstore:
1. Course Pack.
   *ISBN 978-0-88427-207-6*

Cases listed in the class-by-class reading list below are found in the Course Pack.

*The Goal: A Business Graphic Novel* is a light, 130-page book that can be read in 1-2 hours. It is a modernization of the classic management novel *The Goal* by Eliyahu M. Goldratt. Students have the option of choosing to read the original *The Goal* novel instead of the graphic novel.

**Course Textbook**

The course closely follows the textbook  

The textbook is not being assigned as required reading, but it does serve as an excellent supplement to the course material.

**Grading**

The grade you receive for the course is intended to certify your demonstrated proficiency in the course material. Proficiency will be estimated by measuring your performance on class contribution, written team assignments, individual quizzes and exams. There will be four short (3 to 5 questions) quizzes over the quarter. These will be administered through Canvas. The midterm will be a take-home exam released online at the end of session 5. The final will be a three-hour, online exam with open readings, open class handouts and notes. It will be comprehensive, covering material from all course modules. It will only be available during the exam period.

Your course grade will be based on a weighted evaluation of the following categories:

1. Class contribution  
   10%
2. Case write-ups and problem set  
   15%
3. On-line quizzes  
   10%
4. Midterm examination  
   25%
5. Comprehensive final examination  
   40%

**Preparing for Class**

Course assignments are designed to engage you in the issues, to teach you ways to think about and analyze operational problems, and to prepare you to be effective managers. The enclosed course outline and detailed schedule provides you, class by class, with a brief description of the class, the readings and case preparation questions (if any).
As part of your class preparation, please consider how you would answer each of the discussion questions. The readings and assignments should require an average of about three to four hours of preparation per class meeting. If you find yourself averaging more preparation time per session, please let me know. (Typically, students find the class load high in the first three weeks. As you become more comfortable with the material, this subjective assessment will change for the better.)

**Case Write-Ups**

Each case write-up should address the question in italics that goes with the case assignment. In preparing your write-up, please adhere to the following guidelines:

⇒ Be concise and well-structured: Recommendations should be summarized on the first page and be complemented by a crystal-clear discussion on how these follow from your analysis.
⇒ Your write up should not exceed 2 pages of text (11pt, 1½ lines spaced), not including exhibits. (Remember: 2 pages is a limit, not a quota.)
⇒ Be to the point: Know that you write to someone who knows the facts of the case; focus on your explaining, and making a clear case for, your recommendations.
⇒ Submit your team’s write up through Canvas.
⇒ Be punctual: Late submissions will not be accepted.

All case write-ups are to be done in assigned groups. Group assignments will be available by the end of the first week of the term. For most cases, 3 to 4 hours of team-time (after personal prep) should be sufficient. Some cases are detailed and more open-ended. You should use your team’s judgment to figure out how to tackle those cases. The goal of the team approach to case prep is to have you think and experiment while sensitizing you to those issues that are novel and that will be further discussed in class.

The Kellogg Honor Code stipulates that you may put your name on the submission only if you contributed to the group discussion. Toward the end of the term, you will be asked to fill out an assessment of teammates’ contributions to group assignments. These assessments will play a role in determining final grades.

The Kellogg Honor Code also stipulates that you may not use any outside materials in preparing the case write ups. This includes (but is not limited to) handouts from past terms and materials found on the Internet.

**Class Contribution**

In-class contribution will consist mainly of voluntary contributions, although I may call to encourage broader participation. (Although cold calling may increase anxiety, the GMA suggests that “supportive” cold calling encourages you to be better prepared for class and improves overall class discussion.)
Recording Lectures

This class or portions of this class will be recorded by the instructor for educational purposes. These recordings will be shared only with students enrolled in the course. Recordings will be available on Canvas.

Unauthorized student recording of classroom or other academic activities (including advising sessions or office hours) is prohibited. Unauthorized recording is unethical and may also be a violation of University policy and state law. Students requesting the use of assistive technology as an accommodation should contact AccessibleNU. Unauthorized use of classroom recordings — including distributing or posting them — is also prohibited. Under the University’s Copyright Policy, faculty own the copyright to instructional materials — including those resources created specifically for the purposes of instruction, such as syllabi, lectures and lecture notes, and presentations. Students cannot copy, reproduce, display or distribute these materials. Students who engage in unauthorized recording, unauthorized use of a recording or unauthorized distribution of instructional materials will be referred to the appropriate University office for follow-up.

Classroom Etiquette

The Kellogg Code of Classroom Etiquette can be found at http://www.kellogg.northwestern.edu/stu_aff/policies/etiquette.htm.

This etiquette policy was developed by students to foster an atmosphere that is conducive to collective learning. While attendance for any given class session is not compulsory (though encouraged), students’ compliance with the Kellogg classroom etiquette policy will be enforced.

Use of the Canvas

Canvas will be used to facilitate course communication through announcements. Also, on the class Canvas site you will find:

- Lecture slides
- MBPF textbook exercises and solutions.
- Sample midterm and final exam questions & solutions.
- Excel spreadsheets for cases.
Suggested Readings

None of these readings are a requirement for the course. Nonetheless, you may find them interesting.


_Call Center Management on Fast Forward: Succeeding in Today’s Dynamic Customer Contact Environment_ by Brad Cleveland, ICMI Press, 2006.


Final Exam

In preparing for the final, review the sample final (available on Canvas) and MBPF examples and exercises (solutions are available on Canvas). In addition, be aware of the following:

1. The final will be administered online. You will have 180 minutes (three hours) to complete it.
2. The exam will only be available during exam period.
3. The exam is cumulative.
4. The exam is open book. You may consult your textbook, class handouts (including material from the class Canvas site), and class notes. You may use the computer worksheets used in class. You may not use any other materials.
5. You may use a calculator and/or laptop computer. A laptop may only be used for a calculator, Excel, or to access downloaded class files.