MGT60700 Process Analytics

Term: Autumn 2014, Module 1
Class Times: Tues & Thurs 8:00 – 9:50 AM
Tues & Thurs 10:00 – 11:50 AM
Class Location: MCoB 161
Office Hours: Tues & Thurs 4:00 to 5:30 PM;
By appointment

Professor: Sean Handley, PhD
Office: 345 Mendoza College of Business
Office Phone: 574-631-5286
Cell: 614-371-6898 (text messages are fine)
Email: shandley@nd.edu

COURSE DESCRIPTION & OBJECTIVES
Organizations usually commit the bulk of their human, physical, and financial assets to operations. Successful firms have demonstrated that operations can be an effective competitive weapon and, in conjunction with well-conceived marketing and financial strategies, these firms have made major penetrations into markets worldwide. At the core of operations is process management. This class provides a foundation for evaluating, analyzing, and improving business processes in order to make them more efficient and effective. You will learn to understand the problems and issues confronting operations and supply chain managers. Importantly, you will also be introduced to frameworks, tools, and management practices that leading companies employ to address these critical issues. The concepts and tools presented in this class can be applied to service or manufacturing processes, to for-profit or not-for-profit organizations, and to all disciplines within a business.

My goal is that by the end of this course you should be able to:

1. Recognize and describe the role of operations and supply chain management in developing the overall business strategy of a firm.
2. Recognize and describe the interdependence of the operating system with other key functional areas of the organization.
3. Evaluate the current performance of business processes, operating systems, and supply chains in manufacturing and service environments.
4. Employ process analysis tools and principles to identify and recommend opportunities to improve business processes, operating systems, and supply chains.
5. Explain the role of inventory and be able to apply various inventory management methods that impact the effectiveness of processes and supply chains.
6. Describe key factors impacting the design of modern supply chains and the complexities of coordinating supply chain relationships.
COURSE DESIGN
This class covers a combination of qualitative (i.e. conceptual and managerial) and quantitative (i.e. mathematical) topics. Typically, students in the class have diverse professional and academic backgrounds and thus different strengths. For some, the conceptual material is easier to comprehend than is the quantitative material. For others, the opposite is true. As depicted in the table below, the course has been designed to give students multiple opportunities to review, discuss, apply, and practice both the qualitative and quantitative material. I encourage you to take full advantage of these multiple opportunities. Of course, if at any time in the course you would like to visit with me to discuss, review, or practice quantitative problems or qualitative concepts covered in the course, please don’t hesitate to do so.

<table>
<thead>
<tr>
<th>Qualitative Material (conceptual or managerial)</th>
<th>Quantitative Material (mathematical problems)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assigned readings</td>
<td>Assigned readings (solution examples)</td>
</tr>
<tr>
<td>Class discussion of key concepts and articles</td>
<td>In-class practice of problems</td>
</tr>
<tr>
<td>In-class exercises and videos</td>
<td>Case studies</td>
</tr>
<tr>
<td>Case studies</td>
<td>Suggested practice problems</td>
</tr>
<tr>
<td>Visit with Professor Handley in his office</td>
<td>Visit with Professor Handley in his office</td>
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</tbody>
</table>

COURSE MATERIALS
A custom course pack (CP) has been developed for this course (ISBN-13: 9781308185569). The course pack contains selected chapters from two popular McGraw-Hill textbooks: 1) Operations and Supply Chain Management - The Core, 3rd edition by Jacobs and Chase, and 2) Matching Supply with Demand - An Introduction to Operations Management, 3rd edition by Cachon and Terwiesch. The course pack also contains one case study that we will analyze and discuss in the course. This custom course pack is only available for purchase through the ND Bookstore (approximately $44.50). Copies of this course pack are also available on reserve at the Mahaffey Business Information Center located in the Mendoza College of Business.

Most of the case studies we will analyze and discuss throughout the course are required to be purchased through the Harvard Business School Press (HBSP) (Direct link: https://cb.hbsp.harvard.edu/cbmp/access/27096483). Students must use this unique link to access this material at the discounted student rate. The approximate cost of these cases is $15.80. Please familiarize yourself with the copyright obligations with this material.

Access to the Global Supply Chain Management (GSCM) simulation will also be required to be purchased from the Harvard Business School Press. A direct link to the simulation will be distributed later in the course. The license cost of the simulation is $15.00. Each team is only required to purchase a single license.

Additional material (lecture presentations / notes, assigned articles, messages, etc.) will be posted on Sakai. Students should be enrolled in Sakai to access the posted materials. The URL is: http://sakai.nd.edu/.
**GRADING COMPONENTS**

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<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Participation/Professionalism</td>
<td>10%</td>
</tr>
<tr>
<td>Case Analyses (2 @ 10% each)</td>
<td>20%</td>
</tr>
<tr>
<td>GSCM Simulation</td>
<td>10%</td>
</tr>
<tr>
<td>Midterm Exam</td>
<td>30%</td>
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<tr>
<td>Final Exam</td>
<td>30%</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>100%</strong></td>
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Note: There will be no bonus (extra) projects offered to supplement disappointing performance on class exams/assignments.

**GRADING SCALE**

The Mendoza College of Business grade guidelines require that the average grade in this course reflects a 3.3 to 3.6 GPA (http://business.nd.edu/MBA/Academics/Academic_Policies/). Final grades in this course will be assigned to meet this requirement set forth by the College.

**CLASS PARTICIPATION/PROFESSIONALISM**

Active student participation makes class more enjoyable for everyone, and helps you and your fellow classmates learn more effectively than simply listening to me lecture. Class participation refers to regular class attendance; contributing positively, regularly, and significantly to class discussion; and being courteous and professional to both your professor and your fellow classmates. Contribution to class discussion will require that you prepare for the class lesson ahead of time by reading the material to be covered. Simply attending class does not count toward participation, although, you clearly cannot participate in classroom discussions if you do not attend class. Behavior that is detrimental to the classroom learning environment will negatively affect this portion of your grade. You may check with me periodically to inquire about your participation. Your class participation grade is based on the following:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Description</th>
</tr>
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<tbody>
<tr>
<td>90-100%</td>
<td>Student regularly attended class and almost always contributed to class discussion by raising thoughtful questions, analyzing relevant issues, building on others’ ideas, synthesizing across readings and discussions, expanding the class’ perspective, and appropriately challenging assumptions and perspectives.</td>
</tr>
<tr>
<td>80-90%</td>
<td>Student regularly attended class and sometimes contributed to class discussion in the aforementioned ways.</td>
</tr>
<tr>
<td>70-80%</td>
<td>Student regularly attended class but rarely contributed to class discussion in the aforementioned ways. -OR- Student missed an excessive number of classes but contributed meaningfully to discussions when in attendance.</td>
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<tr>
<td>Less than 70%</td>
<td>Student missed an excessive number of classes and contributed minimally to class discussion. -OR- Student's behavior in class severely detracted from the learning environment.</td>
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Adapted from: Eberly Center for Teaching Excellence, Carnegie Mellon University

Note: The MBA Program considers missing more than 2 classes during the course to be excessive (http://business.nd.edu/MBA/Academics/Academic_Policies/).
TEAM CASE ANALYSES
You are expected to form teams of 4 students by the end of the first week of class at the very latest (8/29/2014). Please try to solidify your teams sooner rather than later. You are free to form your own teams. However, experience shows that the following are attributes of successful class teams: (1) diversity in team member experiences, capabilities, and interests; and (2) complementary schedules. Once teams are formed, you are expected to work together on both of the two case analyses your team will submit. Each team is responsible for submitting a written report (max of 5 single-spaced pages plus exhibits) for two of the case studies analyzed in the course. Specifically, you must submit a report for:

Your choice of 1 of the following process management cases:
1. Burton Group – The Lean Future State (September 2nd)
2. Process Control at Polaroid (September 9th)

-AND-

Your choice of 1 of the following supply chain management cases:
1. Zara: Fast Fashion (September 25th)
2. Scotts Miracle-Gro: Spreader Sourcing Decision (September 30th)

By 8/29/2014, please have one member of your team provide to me (by e-mail) a list of your team members and the two cases for which your team has decided to submit a written case analysis. For each case, your report should address the questions provided on Sakai. Your team may be called upon in class to share aspects of your analysis and recommendations.

Although your team is only required to submit a written report for two of the case studies, students are expected to read through and think about all assigned cases. They will serve as the basis for classroom discussion and the material/concepts are subject to examination.

Please read the file “Detailed Case Study Assignment Information” posted on Sakai. This file provides detailed guidance for these team assignments, the basis for grading, and the assignment questions to be addressed for each case.

PEER EVALUATIONS
The ability to work effectively as a member of collaborative work teams is critical in today’s competitive marketplace. For this reason, at the end of the course, you will all submit a team peer evaluation form. This evaluation allows each of you (individually) to provide me with feedback on each of your team members’ contributions in preparing the team case analyses. This gives you an opportunity to inform me of any exceptionally strong or weak contributors on your team, as well as any blatantly disrespectful or unprofessional behavior. Based on this peer feedback, I reserve the right to adjust a student’s overall course grade by up to 10%. Please use the template provided at the end of this syllabus. This will be collected on the final day of class.
GLOBAL SUPPLY CHAIN MANAGEMENT (GSCM) SIMULATION
This interactive online simulation allows students to try their hands at managing the complexities of a global supply chain by putting them in the shoes of the supply chain manager of a mobile phone manufacturer. You become responsible for the rollout of two models of mobile phones. The simulation provides you an opportunity to make several key decisions impacting supply chain and firm performance including: product design, evaluating and using demand forecasts, selecting suppliers with different capabilities, and making inventory replenishment decisions.

Students will participate in the simulation exercise in teams of 2 people. Please form your GSCM simulation teams by dividing your case study teams into smaller groups of 2. Each team is responsible for purchasing one license to the online simulation through the Harvard Business School Press. The simulation exercise will be an out-of-class assignment. The simulation will be open between Tuesday (9/30) and Sunday (10/05). Each team is required to submit an executive report (max of 3 single-spaced pages) outlining their strategy/logic for each of the three decision “rooms” (i.e., Design, Forecasting, and Production). We will then discuss the simulation, team decisions, and team performance in class. Your grade on this exercise represents 10% of your course grade. Grading is based on the quality and professionalism of the executive report along with your team’s financial performance in the simulation.

Prior to the simulation becoming available, I will distribute the file “Global Supply Chain Management Simulation Assignment” to the class. This file will provide detailed guidance for this assignment, expectations, and the basis for grading.

EXAMS
This class will have two exams; a midterm and a final. The final exam is not comprehensive. Exams are in-class, closed notes, closed book, etc. I will provide you with a formula sheet on each exam. Further, prior to each exam I will provide you with a copy of the formula sheet along with a review sheet to guide your studies. The exams will be a combination of problem exercises, short answer/essay questions, and multiple choice questions.

You must bring your own calculator to exams. You will NOT be permitted to use your cell phone, tablet, etc. Make up exams will only be offered under exceptional emergency circumstances. If you believe you may have a scheduling conflict with an exam, you need to resolve this conflict at the beginning of the course. Only last minute conflicts that are true medical or personal emergencies will be accommodated.

SUGGESTED PROBLEMS
I will post suggested practice problems and readings on Sakai throughout the course. I encourage you to work these problems for additional practice and preparation for the exams. However, these assignments are only “suggested” and will not be collected for grading. I will also post the solutions to these practice problems on Sakai so you may check your work. You should attempt to work the problems on your own prior to reviewing the solution. This will give you a better sense of how well you could work a similar problem in an exam environment. If you need assistance in understanding these practice problems or would like to review them one-on-one with me, please don’t hesitate to schedule a time to visit with me. We will also be able to review practice problems during review sessions (see below) if students would like.
REVIEW SESSIONS
To assist students prepare for the exams, I will hold a review session prior to both the midterm and final exam. These review sessions are for your benefit only and are absolutely optional. The review sessions are scheduled as follows:

(1) Monday, September 15th: 5:00pm to 6:30pm, Giovanini Commons A & B
(2) Thursday, October 9th: 5:00pm to 6:30pm, MCoB 161

OFFICE HOURS
My office hours this semester are from 4:00pm to 5:30pm on Tuesday and Thursday in 345 Mendoza College of Business. If you are not able to make it during these times, I will do my best to accommodate your schedule. In addition to discussing the course, I am also willing to help (to the best of my ability) with career issues, job interview preparation, etc. Please do not hesitate to schedule a time to visit with me if there is something you would like to discuss.

USE OF PERSONAL TECHNOLOGY IN CLASS
Personal technology can potentially enhance student learning but can also serve as a major distraction to the class. I realize that some students like to take notes using their laptops and/or follow class notes and materials using their tablet devices. I will allow you to use these devices at your discretion if you genuinely feel that it enhances your learning experience. However, I reserve the right to change this class rule at any time if I determine that the privilege is being abused (e.g., the devices are being used for non-class related purposes) or if the use of such devices becomes a distraction to fellow students or me. Text messaging in class is prohibited. Cell phones are not to be used in class at any time. Please turn them off and put them away. I sincerely appreciate your cooperation with this request. Recordings of presentations, lectures, and discussions are not permitted without specific written permission from me.

MENDOZA HONOR CODE
The Mendoza College of Business is a community of students, faculty and administrators committed to learning, working and growing together with moral character. This community holds dear the University of Notre Dame values of honesty, integrity and honor. The Honor Code requires that students take responsibility for establishing norms of ethical behavior. The Honor Code briefly outlines the community’s expectations and the procedures for handling actions that fail to meet those expectations. Your behavior and actions in this course are expected to be in accordance with the Honor Code. It is your responsibility to familiarize yourself with the Mendoza College Honor Code (http://business.nd.edu/MBA/Academics/Academic_Policies/).

DISABILITY ACCOMMODATIONS
If you need an accommodation based on the impact of a disability, please arrange an appointment with me as soon as possible. We need to discuss the course format and explore potential accommodations. I will rely on the University’s Office of Disability Services (http://disabilityservices.nd.edu/) for assistance in verifying need and developing accommodation strategies. You should start the verification process as soon as possible.
# Course Schedule (Subject to minor changes at the professor’s discretion)


<table>
<thead>
<tr>
<th>Session</th>
<th>Topic</th>
<th>Learning Objectives</th>
<th>Pre-Class Assignment</th>
<th>Suggested Problems / Readings</th>
<th>Assignments Due</th>
</tr>
</thead>
</table>
• Developing operations & process strategy | • Review Syllabus  
• McDonald’s Overhauling Menu [S] | | |
| [2] Aug. 28 (R) | Establishing the Current State Value Stream | • Understand key value stream and process metrics  
• Develop current state value stream map | • Process Fundamentals [HBSP]  
• QA Tools (p. 31-33) [CP] and Spaghetti diagrams [S]  
• Burton Group Case: Evaluating the current state [S] | • Pencil Pushing Process (A-C) [S] | |
| **[3] Sept. 2 (T)** | Lean Management: Creating a lean future state | • Comprehend core Lean principles  
• Recommend opportunities for value stream improvement | • Chapter 1 (p. 2-18) [CP]  
• Burton Group Case [S] | • Pencil Pushing Process (A-C) [S]  
• Burton Group Case: The Lean Future State | |
• Develop & interpret statistical control charts | • Chapter 2 (p. 42-50) [CP] on Statistical Process Control | **Class will meet in Giovanini Commons A & B – lower level of MCoB** | |
| **[5] Sept. 9 (T)** | Total Quality Management | • Understand key elements of total quality management  
• Develop & interpret statistical control charts | • Chapter 2 (p. 20-29) [CP] on Quality Management  
• Process Control at Polaroid Case [HBSP] | • Problem set 1 [S]  
• Process Control at Polaroid Case | |
| **[6] Sept 11 (R)** | Six Sigma & Process Capability | • Comprehend Six Sigma framework  
• Conduct process capability analysis | • Chapter 2 (p. 29-42) [CP]  
• Six Sigma at 3M Case (p. 67-75) [CP]  
• 3M, Between Efficiency & Creativity [S]  
• Six Sigma…at a Bank [S] | • Problem set 1 [S] | |
<p>| <strong>[7] Sept. 16 (T)</strong> | | | | MIDTERM EXAM | |</p>
<table>
<thead>
<tr>
<th>Session &amp; Date</th>
<th>Topic</th>
<th>Learning Objectives</th>
<th>Pre-Class Assignment</th>
<th>Suggested Problems / Readings</th>
<th>Assignments Due</th>
</tr>
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</table>
| 8 Sept 18 (R) | Functions of Inventory & Single Period Systems | • Understand the purposes of holding inventory  
• Develop single period inventory systems | Chapter 4 (p. 76-87) [CP] | Problem set 2 [S] | |
| 9 Sept 23 (T) | Continuous & Periodic Review Inventory Systems | • Develop continuous review inventory policies  
• Develop periodic inventory policies | Chapter 4 (p. 88-100) [CP]  
ACE Case [S] | Problem set 2 [S] | |
| 10 Sept 25 (R) | Supply Chain Overview & Strategy | • Matching product characteristics with global supply chain design  
• Recognize the link between supply chain management and firm financial metrics | What is the Right Supply Chain for your Product? [BIC]  
Zara Case [HBSP] | | |
| 11 Sept 30 (T) | Outsourcing & Offshoring | • Understand the theoretical and financial motivations for outsourcing and offshoring  
• Evaluate the tradeoffs inherent in global sourcing | Transaction cost and Resource-based theories (p. 45-48) [S]  
How the US Lost Out on iPhone Work [S]  
The Insourcing Boom [S]  
Scotts Case [HBSP] | Accenture: Manufacturing’s Secret Shift [S] | |
| 12 Oct. 2 (R) | Guest Speaker: Gerald Linn, IBM, ND MBA ’08 | • Corporate culture, national culture, and outsourcing | To be determined | | |
| 13 Oct. 7 (T) | Supply Chain Simulation | • Capstone exercise in designing and managing global supply chains | Making Supply Meet Demand in an Uncertain World [BIC]  
GSCM Manual, Intro Video | GSCM Simulation [HBSP]  
Peer Eval. | |
| 14 Oct. 10 (F) | | | | FINAL EXAM | |
TEAM PEER EVALUATION FORM

Your team has been given $100,000 for each of the case analyses as a consulting fee. Divide the money among your group based on the quality and effort of each team member’s contribution.

This evaluation is due to the professor during the last class and will be used to adjust course grades if necessary. Please justify your response.

<table>
<thead>
<tr>
<th>Team members</th>
<th>Case 1</th>
<th>Case 2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$100,000</td>
<td>$100,000</td>
</tr>
</tbody>
</table>

Justify your ratings below:
APPENDIX: ACCESSING HARVARD BUSINESS REVIEW ARTICLES

1. Go to the BIC homepage: http://bic.library.nd.edu
2. Under “Quicklinks”, click on “Business Source Complete”

3. Once in the Business Source Complete database:
   a. Change the search field to “TI Title”
   b. Enter the title of the article in search field
   d. Click on “Search” at the top of the page.