SEATTLE UNIVERSITY

ALBERS SCHOOL OF BUSINESS AND ECONOMICS
DEPARTMENT OF MARKETING

OPERATIONS 3600
Manufacturing and Service Operations

COURSE SYLLABUS

for the
Winter Quarter of 2015

The Albers School of Business and Economics is accredited by the Association to Advance Collegiate Schools of Business (AACSB)

SEATTLE UNIVERSITY
Connecting the MIND to what MATTERS
Welcome to the Undergraduate World

I want to welcome you all. Some of you have signed up for this course because you know of me. I am an adjunct who intentionally works in the two very different worlds of academic theory and professional practice. As a consultant by day, I live in the business world, rich with the knowledge of practice and real life experience. As a teacher by night, I live in the academic world, rich with the knowledge of theory and concepts. Since many people often refer to the theory of practice as the opposite of the reality of practice, they tend to fall into a rather large learning trap. Since I work in both worlds – intentionally, I can help you find your way out of the trap or how to avoid it.

The late, great Dr. William Edwards Deming once wrote –

"Rational prediction requires theory and builds knowledge through systematic revision and extension of theory based on comparison of prediction with observation. It is an extension of application that discloses inadequacy of a theory, and need for revision, or even new theory. Again, without theory, there is nothing to revise. Without theory, experience has no meaning. Without theory, one has no questions to ask. Hence without theory, there is no learning."

In the most fundamental of truths, theory and practice are partners that form knowledge. Without knowledge there is no learning. Without learning there is no wisdom. Without wisdom there is no developmental progress.

Because of theory, we have evolving models of systems and their behavior; which includes weather systems, economic systems, and even organizational systems. These models help us predict future behavior and therefore, outcomes. As with the recent hurricanes, while what actually happens in a system may not happen exactly as predicted by the model or the theory, what does happen is very important. Over time we learn to embrace the quote from Dr, Olaf Isachsen – “For whatever happens, all the conditions were present”. That is because; a well developed theory often includes variation common within the system, but we cannot include variation from causes outside the system. Even though there may be influence from the outside, we can analyze what happened and we can evaluate the quality of our theory and improve it.

By failing to balance our understanding with both theory and ideology, we find that our understanding is based solely on one or the other. Without the use of practice, our theoretical understanding of how the world works is clinical and stale. Without the use of theory, our understanding of how the world works is based on a fixed ideological belief. Theories are not the same as ideologies. Theories are scientific, objective and fact based. Ideologies are emotional, subjective and faith based.

Theory is defined as understanding based on empirical evidence. Ideology is an understanding based on beliefs. Theory tries to explain the world as it is; ideology tries to shape it as it should be. Individuals who tend to subscribe to ideology over theory find it does not stand up to observation and fact based evidence. Thus they find they must defend against bouts of cognitive dissonance and construct rationalizations.

As a teacher, I believe that true learning requires the use of theory and reality.
Course Description

The purpose of this course is to provide students with an overview of the theory, systems and science used in the practices associated with operations management within both manufacturing and service environments. Students will begin by reviewing the fundamental purpose of management and the systems used by management to fulfill its purpose.

Operations Management (OM) generally refers to the management of the processes that efficiently and effectively transform resources into goods (e.g., airplanes, ultrasound equipment, furniture) and services (e.g., health care, rented cars, education) desired by customers. These goods and services have characteristics that distinguish them in the marketplace, such as high quality, low cost, high customization, or rapid delivery. When customers place orders for products or services, the order is eventually routed to the firm’s operations function for production and delivery. Operations are one of the last functional areas to touch the product or service before it reaches the customer. Therefore, characteristics of the transaction—having the right product or service, at the right price, in the correct quantity, delivered on time, at the correct quality level, and to the right location—affect how the customer perceives the entire company. The ability of the operations function to efficiently manage the transformation process can deliver value to the company. Its effectiveness at managing the process can keep customers coming back.

Students will survey the problems that production-operations manager’s face and the quantitative tools that are helpful in making decisions that solve these problems. Students consider the entire operations function, including operations strategy, operations analysis, service delivery, quality improvement, inventory systems, facility layout, materials management, scheduling, aggregate planning, project management, and international operations. Student teams visit a local factory or service operation and prepare reports relating their observations to course topics.

Students will explore strategic role of Operations, also called the Production Function. Because an Operation deals directly with the effective creation of value and the efficient management of resources needed for the production of those goods and services, this course is considered from and process and system perspective, not the perspective of the department, division or organizational structure.

This course examines the processes that define the production function which run through organization and extend beyond organization, linking it with their customers, supply chains, and distribution channels. Students will receive an introduction to information, theories and knowledge necessary for understanding and managing process performance in attaining organizational objectives.

This course will explore the associations and impact of global history on current methods and practices used by organizations, to create value for customers. Students will explore theories of work related to the ancient practices of guilds and their connection to modern day disciplines; as well as the modern role that foreign competition, especially from Japan, Korea, Germany, and France, is having on operations.

Students will study process based value creation systems from both theoretical as well as a practical point of view. As a management course, it will apply strategic concepts, analytical techniques, and decision-making tools, and students will learn how these may be applied to operations problems.

The course offers only a basic overview of the extensive body of knowledge critical to the success of a production strategy. Topics include management of the production system, strategies of product design and process selection, design of production systems, plant location, shop floor control, purchasing, quality management, and productivity improvement.

Course Instructor
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Cell phone – (206) 295-7171  
Office P433  
Office Hours -- By Appointment

Course Location
Location: Seattle – BANN 402  
Days: Monday and Wednesday  
Hours: 6:00PM to 8:05PM

Required text:  
Managing Operations: Across the Supply Chain, Second Edition  
Authors – Morgan Swink, Steven Melnyk, M. Bixby Cooper and Janet Hartley  
Publisher - McGraw-Hill Irwin

Supplemental reading: Optional text  
(These texts are recommended for students seeking careers in operations management or supply chain management)

- The Goal, 3rd Revised Edition, Goldratt, Eliyahu
- Moments of Truth, Carlzon, Jan
- The Machine the Changed the World – James Womack
- Vested Outsourcing – Kate Vitasek
- Toyota: Supply Chain Management – Ananth Iyer
- Producing Prosperity – Gary Pisano
- Lean Thinking – James Womack
- Thinking Beyond Lean – Michael Cusumano
- Thinking in Systems – Donella Meadows
Course Objectives

Upon successful completion of the course, the student should:

1. Be able to communicate the purpose of management in business.
2. Be able to differentiate between the roles of management, leadership and supervision.
3. Understand the evolution of the three primary functions of a business entity.
4. Be able to accurately define, describe and differentiate between the concepts of “process”, “work” and “business”; as well as the notion of “work process” and a “business process.”
5. Demonstrate understanding of the difference between four major process types; their place in history; and their relationship to Alfred Chandler’s principles. Be able to evaluate various work strategies and tactics.
6. Understand the role of manufacturing and its link to competition and a firm’s competitive advantage. Be familiar with core operations management concepts and processes, and their relationships with other business functions such as accounting, marketing, MIS, and finance.
7. Be able to differentiate between the four process types.
8. Understand the relationship between theory and practice.
9. Be able to accurately differentiate between the concepts of “value”, “price”, “profit” and “equity”.
10. Understand how the differences of Operations Management (OM) are fundamental to the value-creating and value-adding process of an organization; and create an organizational advantage using OM principles.
11. Understand the difference between customers and clients and the importance of operations to all organizations that produce goods and services.
12. Be aware of the implications of a firm’s competitive advantage to decision-making at all levels of an organization.
13. Define, analyze and solve operations problems from a strategic perspective.
14. Analyze situations and offer solutions to business problems in the operations area.
15. Improve your oral presentation and team work skills.
16. Be able to make upper level managerial decisions relating to manufacturing in all aspects of the planning and control system.
17. Understand the assumptions, advantages, and disadvantages of operations systems, management processes, and decision making techniques.
18. Understand the management process in push and in pull manufacturing processes.
19. Understand the functions of dependent and independent demand inventories.
20. Understand and utilize analytical tools for managing capacity such as location and layout.
21. Understand the place of human factors in job design and work measurement.
22. Understand and utilize quality theories such as TQM, statistical process control, Six Sigma, Lean and TOC.
23. Understand various systems for managing operations such as Material Requirements Planning (MRP), Enterprise Resource Planning (ERP) and Just-in-Time Production (JIT).
24. Analyze situations and identify appropriate techniques for planning and scheduling.
25. Understand the ethical issues associated with quality management and inventory decisions.
**Assessments and Grades**

**Assessments:** Each student's knowledge will be assessed based on four elements:

- Six Quizzes (20 questions each)  
- One Midterm Examination (100 questions)  
- One Final Examination (100 questions)  
- Class Participation

**Class Participation will be assessed on the following**

<table>
<thead>
<tr>
<th>Class Participation</th>
<th>Student regularly attends classes.</th>
<th>Student missed one to two classes during the quarter</th>
<th>Student missed three to four classes during the quarter</th>
<th>Student missed five or more classes during the quarter</th>
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<tbody>
<tr>
<td>Attendance</td>
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<td>Promptness</td>
<td>Student is always prompt</td>
<td>Student is late to class once every two weeks</td>
<td>Student is late to class more than once every two weeks</td>
<td>Student is late to class more than once a week</td>
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<tr>
<td>Level of Engagement In Class</td>
<td>Student proactively contributes to class by offering ideas and asking questions more than once per class.</td>
<td>Student proactively contributes to class by offering ideas and asking questions once per class.</td>
<td>Student rarely contributes to class by offering ideas and asking questions.</td>
<td>Student never contributes to class by offering ideas and asking questions.</td>
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<tr>
<td>Listening Skills</td>
<td>Student listens when others talk, both in groups and in class. Student incorporates or builds off of the ideas of others.</td>
<td>Student listens when others talk, both in groups and in class.</td>
<td>Student does not listen when others talk, both in groups and in class.</td>
<td>Student does not listen when others talk, both in groups and in class.</td>
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<tr>
<td>Behavior</td>
<td>Student almost never displays disruptive behavior during class.</td>
<td>Student rarely displays disruptive behavior during class.</td>
<td>Student occasionally displays disruptive behavior during class.</td>
<td>Student almost always displays disruptive behavior during class.</td>
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<td>Preparation</td>
<td>Student is almost always prepared for class with assignments and required class materials.</td>
<td>Student is usually prepared for class with assignments and required class materials.</td>
<td>Student is rarely prepared for class with assignments and required class materials.</td>
<td>Student is almost never prepared for class with assignments and required class materials.</td>
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<td>Frequency of participation in class</td>
<td>Student initiates contributions more than once in each recitation.</td>
<td>Student initiates contribution once in each recitation.</td>
<td>Student initiates contribution at least in half of the recitations</td>
<td>Student does not initiate contribution &amp; needs instructor to solicit input.</td>
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<td>Quality of comments</td>
<td>Comments always insightful &amp; constructive; uses appropriate terminology. Comments balanced between general impressions, opinions &amp; specific, thoughtful criticisms or contributions.</td>
<td>Comments mostly insightful &amp; constructive; mostly uses appropriate terminology. Occasionally comments are too general or not relevant to the discussion.</td>
<td>Comments are sometimes constructive, with occasional signs of insight. Student does not use appropriate terminology; comments not always relevant to the discussion.</td>
<td>Comments are uninformative, lacking in appropriate terminology. Heavy reliance on opinion &amp; personal taste, e.g., “I love it”, “I hate it”, “It’s bad” etc.</td>
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**Final Grades**

**Grading:** A straight grading scale will be used to determine final course grades

- A = 95 - 100
- A- = 90 - 94
- B+ = 87 - 89
- B = 83 - 86
- B- = 80 - 82
- C+ = 77 - 79
- C = 73 - 76
- C- = 70 - 72
- D+ = 67 - 69
- D = 63 - 66
- F = 0 – 62
<table>
<thead>
<tr>
<th>Session</th>
<th>Class Activity</th>
<th>Reading Assignments</th>
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<tbody>
<tr>
<td>Monday 1/5</td>
<td>Course Overview, Expectations, General Policies. Business, Management, Process</td>
<td>Syllabus Chapter 1</td>
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<td></td>
<td>and Systems Introduction to Managing Operations Across the Supply Chain</td>
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<td>Wednesday 1/7</td>
<td>Operations and Supply Chain Strategy</td>
<td>Chapter 2</td>
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<td>Monday 1/12</td>
<td>Managing Processes and Capacity</td>
<td>Chapter 3</td>
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<td>Wednesday 1/14</td>
<td>Process Mapping and Analysis</td>
<td>Chapter 3S Quiz #1</td>
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<td>Monday 1/19</td>
<td>Martin Luther King Jr.</td>
<td>NO CLASS</td>
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<td>Wednesday 1/21</td>
<td>Product/Process Innovation</td>
<td>Chapter 4</td>
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<td>Monday 1/26</td>
<td>Manufacturing and Service Process Structures</td>
<td>Chapter 5</td>
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<td>Wednesday 1/28</td>
<td>Managing Quality</td>
<td>Chapter 6 Quiz #2</td>
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<td>Monday 2/2</td>
<td>Quality Improvement</td>
<td>Chapter 6S</td>
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<td>Wednesday 2/4</td>
<td>Managing Inventories</td>
<td>Chapter 7</td>
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<td>Monday 2/9</td>
<td>MIDTERM</td>
<td>EXAM</td>
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<td>Wednesday 2/11</td>
<td>Lean Systems</td>
<td>Chapter 8 Quiz #3</td>
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<td>Monday 2/16</td>
<td>Presidents Day</td>
<td>NO CLASS</td>
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<tr>
<td>Wednesday 2/18</td>
<td>Customer Service Management</td>
<td>Chapter 9</td>
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<td>Monday 2/23</td>
<td>Sourcing and Supply Management</td>
<td>Chapter 10</td>
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<td>Wednesday 2/25</td>
<td>Logistics Management</td>
<td>Chapter 11 Quiz #4</td>
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<td>Monday 3/2</td>
<td>Demand Planning: Forecasting and Demand Management</td>
<td>Chapter 12</td>
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<td>Wednesday 3/4</td>
<td>Sales and Operations Planning</td>
<td>Chapter 13</td>
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<td>Monday 3/9</td>
<td>Materials and Resource Requirements Planning</td>
<td>Chapter 14 Quiz #5</td>
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<td>Wednesday 3/11</td>
<td>Project Management</td>
<td>Chapter 15</td>
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<tr>
<td>Monday 3/16</td>
<td>Sustainable Operations Management – Preparing for the Future</td>
<td>Chapter 16 Quiz #6</td>
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<tr>
<td>Wednesday 3/18</td>
<td>FINAL EXAM</td>
<td>Finals Week</td>
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