UNIVERSITY OF WISCONSIN OSHKOSH  
College of Business Administration  
BUS 343 – Manufacturing Planning and Control  
Section 1: Tue & Thu: 3.00 pm – 4.30 pm, Sage 4221  
Section 2: Thu: 6.00 pm – 9.10 pm, Sage 4221  
Semester: Fall 2012

“Make only as much as the customer will buy. Don't make things the customer won’t buy”  
- Taiichi Ohno.

Instructor: Dr. Raj Kamalapurkar  
Office: 1414 Sage Hall  
Email: kamalapd@uwosh.edu  
Office Hours: Mon: 9.30 am – 11.30 am  
Tue & Thu: 1.30 pm – 2.30 pm and by Appointment  
Program Assistant: Ms. Carmen Plueger, (920)-424-1437  
Prerequisite: BUS 341 and BUS 389 (may take concurrently)

Required Texts


Harvard Business School Case, 9-608-055 ‘Cook Composite and Polymers Co.’ (in bookstore)

Course Description

A study of manufacturing planning and control systems. Topics include an overview of supply chain management, manufacturing strategy, forecasting, sales and operations planning, resource requirements planning, master production scheduling, rough-cut capacity planning, material requirements planning, capacity requirements planning, Just-in-Time, constraints management, inventory principles, lot-sizing methods, and independent demand inventory management systems. In addition, students will be required to learn and apply different types of software, e.g., Excel spreadsheets, to problems built around the course topics.
Learning Objectives

At the end of this course, students will be able to:

1. Describe supply chain management.
2. Describe the formulation and elements of manufacturing strategy.
3. Describe the overall manufacturing planning process and the general relationships between the different levels of planning.
4. Understand the relationship between environmental sustainability and manufacturing planning & control.
5. Describe qualitative and quantitative forecasting techniques.
6. Determine which forecasting technique is appropriate for a given situation.
7. Use various forecasting techniques.
8. Describe the sales & operations planning (S & OP) process.
9. Describe how the sales & operations plan becomes an input to the master schedule.
10. Explain the concepts of independent and dependent demand.
12. Define the role of the master scheduler.
13. Distinguish between a master schedule and a master production schedule.
14. Develop a master production schedule and determine its feasibility.
15. Apply the concept of available-to-promise in a master scheduling environment.
16. Describe how the tradeoffs in the balancing of supply and demand are at the core of master scheduling and how they are resolved.
17. Define time fences and their use.
18. List the differences between the final assembly schedule and the master production schedule.
19. Show how the master production schedule is the primary driver for material requirements planning and rough-cut capacity planning.
20. Define the role of rough-cut capacity planning in testing for master production schedule feasibility.
21. Explain the elements of lead-time.
22. Demonstrate a working knowledge of material requirements planning.
23. List the data required for routing and explain the need for data accuracy.
24. Demonstrate how to calculate load and capacity in capacity requirements planning.
25. Describe the relationships between production activity control and other production areas.
26. Describe the activities of releasing an order.
27. Explain the treatment of start dates and due dates in dispatching.
29. List the functions of inventory.
30. Define inventory terminology.
31. List the different classifications of inventory.
32. Use common lot-sizing techniques.
33. Develop an inventory system appropriate for a given set of circumstances.
34. Describe how inventory measurement and control techniques affect costs and services.
35. List the purpose of the various inventory measurement and control techniques.
36. Describe alternatives that may be considered in efforts to optimize customer service, inventory investment, operations, profitability, and return on investment.
37. Describe the main concepts of Just-in-Time/Lean as they relate to manufacturing strategy and the planning and control system.
38. Use a value stream map to determine lead-time reduction opportunities.
39. Describe the main concepts of constraints management as they relate to manufacturing strategy and the planning and control system.

Assessment

For assessment purposes, objectives have been defined for all undergraduate business students and for each major. The objectives that are pertinent to 28-343 are the two that are specific to the operations management major courses as follows:

Objective 1: BBA graduates with an operations management major will have knowledge of specific mathematical and behavioral models important to the effective management of operations.

Objective 2: BBA graduates with an operations management major will demonstrate knowledge of the range of operation types, practices, and problem solving techniques appropriate to manufacturing planning and control.

APICS has five modules for the CPIM (Certified in Production and Inventory Management) program as follows: Basics of Supply Chain Management, Master Planning of Resources, Detailed Scheduling and Planning, Execution and Control of Operations, and Strategic Management of Resources. The Basics of Supply Chain Management module covers basic concepts in managing the flow of materials from suppliers to final customers. It is meant to serve as an overview of the material covered in the other modules and should be taken first. The other modules go into more depth on important aspects of production planning and control. Together Manufacturing Planning & Control Systems (Business 343) and Supply Chain Management (Business 344) cover most of the body of knowledge for the CPIM. BUS 343 concentrates most heavily on most of the material included in the Master Planning of Resources and Detailed Scheduling and Planning modules and covers part of the Supply Chain Management, Strategic Management of Resources, and Execution and Control of Operations modules.

Sustainability Case Study

We will explore relationship between Manufacturing Planning & Control topics and sustainability using the ‘Harvard Business School Case study.’ Students will learn about the manufacturing process for a chemical compound and analyze the economic and environmental implications of the use of a chemical used to clean equipment between production batches of the chemical compound. Students will learn and demonstrate how to conduct economic and environmental analysis of alternative uses for a waste product.

You are expected to form a team with 4-5 students (min 4 and max 5 students) to work on this case study. Each team will submit a case study report by November 15th (Print and submit a hard copy). More details regarding this case study will be provided on D2L.
General Class Guidelines

Your involvement in the class is critical for the learning process. Students are expected to complete their reading assignment prior to class to be prepared to discuss the material in class and to participate in class discussions.

Students are expected to listen attentively when the instructor or other students are speaking. You should treat the class as a business meeting and be courteous and respectful of all fellow students, the professor and the educational experience. Unprofessional communication conduct via email, phone, in-class, D2L, etc. will result in a minimum subtraction of 25 points from your point total.

During class, cell phones are to be turned off or set to vibrate and stored in the backpacks. Laptops may be used for taking notes and working on the topic being discussed in the class. Surfing the web, sending email, watching videos or doing anything unrelated to this course is prohibited.

Exams and Quizzes

All exams and quizzes will be closed book and closed notes. You may not bring any study aids to the exams or quizzes. A calculator and a formula sheet will be provided for the exams. The exams will cover materials from the required textbook, lectures and class discussions. The exams will consist of multiple-choice questions, short answer questions and problems. The quizzes will consist of multiple-choice questions and/or problems.

The solution for exams and quizzes will be reviewed briefly in class. During the review of an exam or quiz you will not be permitted to take any notes. After we have completed our review, you must return all documents to me or else you will receive a grade of zero on that exam or quiz. Students may ask questions about graded exams or quizzes at the end of class. This allows me to provide you my undivided attention. There will be no makeup exams and quizzes. Any makeup exams and quizzes may only be allowed with valid documented excuse (but still are at the complete discretion of the instructor).

Desire2Learn and Email

The web-based system Desire2Learn will be used for communication from me to the entire class. I will be posting course documents and course announcements on Desire2Learn. You are expected to check your email and Desire2Learn on a regular basis.

When you email me, use a proper salutation, a proper closing, proper grammar and spelling, as you would in a professional business letter (will be helpful in your career). I recommend that you include “BUS 343-01 or BUS 343-02” in the subject line of all emails sent to me for this course. I will do everything I can to respond to your emails within 24 hours. If I am unable to respond to you within 24 hours (e.g. due to traveling, etc.) then I will try to let you know in advance.

I encourage you to meet me during my office hours (and by appointment) to discuss any questions you may have related to this course. If you have questions that need explanation, then you need to meet and discuss with me, as email is not a very effective medium for these situations.
If you have questions about grading, your performance in the class, or any personal issues that you need to discuss, you must come in during my office hours (and by appointment) to talk to me. Email is not an effective way to discuss these issues. We are trying to encourage proper business conduct in the courses that will help you to be successful in your career.

Academic Integrity

Discussing any aspect of an exam or quiz with another BUS 343 student when one of you has taken the exam and the other has not, is unethical and a violation of academic integrity. Also, students involved in cheating and plagiarism are subject to the maximum penalties permitted by the UW Oshkosh Student Discipline Code.

** Remember: grades are not given by me, they are earned by you **

Course Evaluation

Grades will be determined based on the following points

| Exam1       | 100 |
| Exam2       | 100 |
| Final Exam  | 150 |
| Quizzes (2 x 20) | 40 |
| Case Study  | 40  |

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Total | 430
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Grading Scale

The following grade scale will be used

<table>
<thead>
<tr>
<th>Percentage</th>
<th>Grade</th>
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<tbody>
<tr>
<td>93.0 - 100%</td>
<td>A</td>
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<tr>
<td>90.0 - 92.9%</td>
<td>A-</td>
</tr>
<tr>
<td>87.0 - 89.9%</td>
<td>B+</td>
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<tr>
<td>83.0 - 86.9%</td>
<td>B</td>
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<tr>
<td>80.0 - 82.9%</td>
<td>B-</td>
</tr>
<tr>
<td>77.0 - 79.9%</td>
<td>C+</td>
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<tr>
<td>73.0 - 76.9%</td>
<td>C</td>
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<tr>
<td>70.0 - 72.9%</td>
<td>C-</td>
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<tr>
<td>67.0 - 69.9%</td>
<td>D+</td>
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<tr>
<td>63.0 - 66.9%</td>
<td>D</td>
</tr>
<tr>
<td>60.0 - 62.9%</td>
<td>D-</td>
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<tr>
<td>&lt; 60%</td>
<td>F (Fail)</td>
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Tentative Schedule

<table>
<thead>
<tr>
<th>Week of</th>
<th>Details</th>
<th>Chapter Details</th>
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<tbody>
<tr>
<td>09/03 – 09/07</td>
<td>Chapter 01</td>
<td>Introduction to Materials Management</td>
</tr>
<tr>
<td>09/10 – 09/14</td>
<td>Chapter 02</td>
<td>Production Planning System</td>
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<tr>
<td>09/17 – 09/21</td>
<td>Chapter 03</td>
<td>Quiz1 &amp; Master Scheduling</td>
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<td>09/24 – 09/28</td>
<td>Chapter 04</td>
<td>Material Requirements Planning</td>
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<td>10/01 – 10/05</td>
<td>Exam1</td>
<td>(From Chapters 01-04)</td>
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<td>10/08 – 10/12</td>
<td>Chapter 05</td>
<td>Capacity Management</td>
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<td>10/15 – 10/19</td>
<td>Chapter 06</td>
<td>Production Activity Control</td>
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<tr>
<td>10/22 – 10/26</td>
<td>Chapter 08</td>
<td>Quiz2 &amp; Demand Forecasting</td>
</tr>
<tr>
<td>10/29 – 11/02</td>
<td>Chapter 09</td>
<td>Inventory Fundamentals</td>
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<tr>
<td>11/05 – 11/09</td>
<td>Exam2</td>
<td>(From Chapters 05-09)</td>
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<td>11/12 – 11/16</td>
<td>Chapter 10</td>
<td>Inventory Order Quantities</td>
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<td>11/26 – 11/30</td>
<td>Chapter 11</td>
<td>Independent Demand Ordering Systems</td>
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<tr>
<td>12/03 – 12/07</td>
<td>Chapter 15</td>
<td>Lean Production and JIT</td>
</tr>
<tr>
<td>12/10 – 12/14</td>
<td>Final Exam</td>
<td>(From All Chapters Covered)</td>
</tr>
</tbody>
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Note: This is a tentative schedule. As some chapters are longer than others, some chapters/topics will overlap and may be covered in the preceding or the following weeks.

Important Dates

- First Day of Class: September 6
- Quiz Dates: Sep 20, Oct 25
- Exam Dates: Oct 04, Nov 08
- Case Study: November 15 (Due on this date)
- Self-Study Day: November 20 (Instructor at conference)
- Thanks Giving: November 22 (No class)
- Final Exam: December 13