UNIVERSITY OF WISCONSIN OSHKOSH
College of Business Administration
BUS 343 – Manufacturing Planning and Control
Section 1: Tue & Thu, 8.00 am – 9.30 am, Sage 2212
Section 2: Tue & Thu, 1.20 pm – 2.50 pm, Sage 4218
Semester: Fall 2011

Instructor: Dr. Raj Kamalapurkar
Office: 1414 Sage Building
Email: kamalapd@uwosh.edu
Office Hours: TR: 3.00 pm – 5.00 pm and by Appointment
Program Assistant: Ms. Carmen Pluegar, (920)-424-1437
Prerequisite: BUS 341

Required Texts


Link to Online Book [http://www.coursesmart.com/9780131376748?__professorview=false](http://www.coursesmart.com/9780131376748?__professorview=false)

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

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.
11. Describe bills of material.
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 and define inventory terminology.
30. List the different classifications of inventory.
31. Use common lot-sizing techniques.
32. Develop an inventory system appropriate for a given set of circumstances.
33. Describe how inventory measurement and control techniques affect costs and services.
34. List the purpose of the various inventory measurement and control techniques.
35. Describe alternatives that may be considered in efforts to optimize customer service, inventory investment, operations, profitability, and return on investment.
36. Describe the main concepts of Just-in-Time/Lean as they relate to manufacturing strategy and the planning and control system.
37. Use a value stream map to determine lead-time reduction opportunities.
38. Describe the main concepts of constraints management as they relate to manufacturing strategy and the planning and control system.

**Emphasis on Sustainability**

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.
Exams and Quizzes

Midterm Exam and the Final Exam will be closed book and closed notes. However you will be allowed to write down the formulas on an 8.5 x 11 sheet of paper with your name on it, which you need to submit along with your exam. The exams will cover materials from the required textbook, homework assignments, class lectures and the discussions. The exams may consist of true-false questions, multiple-choice questions, short answer questions and problems.

Three short quizzes will be given on the subject matter covered in the previous sessions. Quizzes may consist of multiple-choice questions and/or problems and/or short answer questions.

The solution for exam 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.

There will be no makeup exams and quizzes. However, any makeup exams and quizzes may only be allowed with valid documented excuse (but still are at the complete discretion of the instructor).

Homework Assignments

Homework will be assigned which may consist of problems and/or case studies. A limited amount of class time will be devoted to discuss homework assignments. Homework submitted for grading must be professional looking for credit. All details need to be clearly shown for full credit. Late or unprofessional homework will be worth zero points. In addition, some practice problems may be assigned which you need to practice but do not have to submit them for grading.

NOTE: Each student must turn in their own homework, although discussion outside of class with other students is allowed. Homework is due at the beginning of the class on the day they are due.

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.

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, 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 office hours 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.
Course Evaluation

Grades will be determined based on following

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<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Midterm Exam</td>
<td>25%</td>
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<tr>
<td>Final Exam</td>
<td>35%</td>
</tr>
<tr>
<td>Quizzes (3)</td>
<td>15%</td>
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<tr>
<td>Sustainability (1)</td>
<td>10%</td>
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<tr>
<td>Homework (3)</td>
<td>15%</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>100%</strong></td>
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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>
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<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>
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<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>
</tr>
<tr>
<td>67.0 - 69.9%</td>
<td>D+</td>
</tr>
<tr>
<td>63.0 - 66.9%</td>
<td>D</td>
</tr>
<tr>
<td>60.0 - 62.9%</td>
<td>D-</td>
</tr>
<tr>
<td>&lt; 60%</td>
<td>F (Fail)</td>
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Important Dates

<table>
<thead>
<tr>
<th>Event</th>
<th>Date</th>
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<tbody>
<tr>
<td>First Day of Class</td>
<td>September 8</td>
</tr>
<tr>
<td>Midterm Exam</td>
<td>October 25</td>
</tr>
<tr>
<td>Quiz Dates</td>
<td>Sep 27, Oct 18, Nov 15</td>
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<tr>
<td>Sustainability</td>
<td>November 17 (due on this date)</td>
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<tr>
<td>Self Study Day</td>
<td>November 22 (Instructor at conference)</td>
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<tr>
<td>Thanksgiving Break</td>
<td>November 24</td>
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<tr>
<td>Final Exam</td>
<td>December 13</td>
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Usage of Electronic Devices

During class, cell phones are to be turned off or set to vibrate. Laptops may be used for taking notes and working on the topic being discussed in the class. Surfing the web, sending email, text messaging, talking on cell phone, listening to an iPod or Mp3 player in the class is prohibited.