

**OHIO STATE UNIVERSITY
MBA PROGRAM FALL, 2001
BUS. MGT. 835
OPERATIONS PLANNING AND CONTROL SYSTEMS**

Professor Bill Berry
Office: Fisher Hall 660A
Telephone: 292-3173
Office Hours: Tue./Thur. 3:30-5:18
(or by appointment)
Class: Gerlach Hall 315
Tue./Thur. 1:30-3:18

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I. PERSPECTIVE OF THE COURSE

The course will present a general management perspective on the use of planning and control systems to manage the flow of material in operations. Operations planning and control is an integrative function in a business that is critical in linking the planning activities in many areas of the business, e.g. in marketing, operations, finance, and engineering.

In particular, this course will emphasize the overall structure of the planning and control function in managing operations, how this function coordinates activities within the operations area, and how operations planning and control decisions relate to other functional areas in the business such as marketing and finance. It includes the study of both planning and execution systems. While material in the course is directed toward manufacturing industries, it is also applicable to service industry operations.

Decisions regarding the design of operations planning and control systems involve a consideration of both the nature of the production process and the way in which the company wins orders in the market. We will be particularly concerned with how changes in the nature of the production process design will effect the design of the operations planning and control system. We will also study how approaches such as Manufacturing Resource Planning (MRPII) and Just-In-Time Manufacturing can be used to support a firm's competitive position in the market.

II. CONTENT OF THE COURSE

In Bus.Mgt. 850 the Operations Management course was concerned with management issues dealing with day-to-day operations with some attention to material and capacity planning for future operations. In contrast, this course is concerned with determining what type of planning and control system ought to be in place in manufacturing to best support the company in the market. We develop both a broad perspective on the manufacturing function and the complexity of managing the flow of material in a business, and an understanding of the details of operations planning and control system techniques.

Major themes in the course include: i) Material and Capacity Planning, ii) Master Production Scheduling, iii) Shop Scheduling Systems for Batch Processes, iv) Operations Planning and Control In Just-In-Time Processes, and v) Operations Planning and Control Systems.

III. OBJECTIVES OF THE COURSE

I would like for you to develop an ability to understand the structure of modern operations planning and control systems in companies, and to understand when and where particular planning and control approaches are appropriate in operations. Developing an understanding of the conceptual basis for operations planning and control systems and gaining experience in making operations planning and control decisions will be helpful to you as a manager in many areas of a business.

IV. TEACHING APPROACH

An operations planning and control system framework and techniques will introduced and reviewed in class by the instructor. In addition to the lecture and discussion of the text material, we will have an optional plant tour and guest speakers in the course. The plant tour and the guest speakers are intended to provide actual operating examples of the material presented in the course.

V. COURSE MATERIAL

The following material will be used in course:

TEXT: MANUFACTURING PLANNING AND CONTROL SYSTEMS, T.E. Vollmann, W. L. Berry, and D. C. Whybark, Richard D. Irwin, 1997 (Fourth Edition).

Most of the classes will have an assigned reading and problems to be completed at the end of the chapters. The textbook provides the conceptual framework and the operations planning and control techniques that we will use in analyzing and discussing the group case assignments.

A major objective of the course is for you to be able to apply the concepts presented in the text to both the case and in the operating environments in which you will find yourself in the future as a manager. I would be glad to provide additional references to those that indicate an interest in such material. I have attempted to spread the workload in a uniform manner over the course. When peaks occur, I will indicate them in class.

VI. GRADING

An important part of your grade will depend on the effectiveness of your individual participation in class discussion, and on your group case reports (four team members maximum). These reports are to be a maximum of four double spaced pages in length (not including exhibits), using 10 cpi type font. The task in the group case reports is to analyze and develop an analysis of the manufacturing planning and control systems issues in the company. Please see the case assignment questions given in section IX below.

Grading Formula:

| | |
|---|------|
| Four Quizzes (@ 8% each with the Grade based on best three quizzes): | 32% |
| Class Discussion: | 10% |
| Two Group Case Reports: | |
| Flashy Flashers Case (due 10/23): | 14 % |
| U.S. Stroller Case (due 11/15): | 14% |
| Mid-Term Examination (Tuesday 11/20; 1:30-3:18 AM, Gerlach Hall 315): | 30% |
| Total: | 100% |

Plus Optional Points For:

Attending the Plant Tour (Liebert Corp., 9:00-10:00 AM, Monday, 10-8) 2%

APICS Meeting Attendance (details to be announced) 2%

CEMM Job Fair Attendance (October 3, 11-2 PM) 2%

VII. INSTRUCTOR'S EXPECTATIONS

My expectation is that you will be present, well-prepared, and capable of discussing the class material assigned for the day.

VIII. SEQUENCE OF TOPICS: COURSE OUTLINE

Day/ Date/ Session #/ Topic/ Class Assignment

PART 1: MATERIAL AND CAPACITY PLANNING

Thursday 9-20, Session 1, Topic: Course Overview - Manufacturing Competitiveness/MPC Framework,
Class Assignment: VBW Chapter 1, and the Again Agame Case

Lecture Videos: [Supply Chain Management](#), [EOQ](#), [Independent Inventory System](#)

Tuesday 9-25, Session 2, Topic: Material Requirements Planning: Product Structure and
Bill of Material Explosion, Class Assignment: VBW Ch 2, pp 13-42, Problems 2,3,5,6,8

Lecture Video: [MRP1](#)

Thursday 9-27, Session 3, Topic: Material Requirements Planning Records and Record Processing, Class
Assignment: VBW Ch 2, pp 43-54, Problems 12,14

Lecture Video: [MRP2](#)

Tuesday 10-2, Session 4*, Topic: Capacity Requirements Planning,
Class Assignment: VBW Ch 4, pp 120-140, Problems 4,5,14

Thursday 10-4, Session 5, Topic: Capacity Management, Class Assignment: Ch 4, pp 141-154, Problems 9, 13, 15

Tuesday 10-9, Session 6, Topic: Material Requirements Planning Systems; Guest Speaker: Mr. John Bingham,
Materials Manager, Liebert Corporation, Optional Plant Tour: Liebert Corporation, Monday 10-8 at 9:00-10:00 AM

Video: [Inventory System](#)

Video Review: [Inventory System](#)

PART 2: MASTER PRODUCTION SCHEDULING

Thursday 10-11, Session 7*, Topic: Master Production Scheduling: Records and Record Processing,
Class Assignment: VBW Ch 6, pp 205-222, Problems 4,5,8

Tuesday 10-16, Session 8, Topic: Master Production Scheduling: Customer Order Promising,
Class Assignment: VBW Ch 6, pp 233-251, Problems 9,14

Thursday 10-18, Session 9, Topic: Master Production Scheduling Systems;
Guest Speaker: Mr. Tim Loar, Production & Inventory Planning Manager, Ross Laboratories Company

Tuesday 10-23, Session 10, MRPII Systems: Flashy Flashers Case Discussion
Case Date: [Flashy Flashers](#)

Thursday 10-25, Session 11, MRPII Systems Guest Speaker: Mr. David Swihart, Director-Marysville
Manufacturing , The Scotts Company

PART 3: SHOP SCHEDULING SYSTEMS FOR BATCH PROCESSES

Tuesday 10-30, Session 12*, Topic: Batch Manufacturing: Priority Scheduling Methods,
Class Assignment: VBW Ch 5, pp 165-180, Problems 1,8, 11 and 13

Thursday 11-1, Session: 13, Topic: Batch Manufacturing - Shop Floor Control Systems,
Class Assignment: VBW Ch 5, pp 180-194, Problems 7 and 9

Tuesday 11-6, Session: 14, Topic: TOC Scheduling Systems,
Class Assignment: VBW Ch 19, pp 789-802, Problems 1,6,7 and 10

PART 4: OPERATIONS PLANNING AND CONTROL IN JIT PROCESSES

Thursday 11-8, Session 15*, Topic: Just-In-Time Manufacturing: MPS,
Class Assignment: VBW Ch 3, pp 68-105, Problems 2,4 and 12

Video: [HP](#)

Video Review: [HP](#)

Tuesday 11-13, Session 16, Topic: Planning and Control Under JIT,
Class Assignment: VBW Ch 3, pp 105-112, Problems 3,9,10 and 14

Lecture Video: [Continuous Improvement](#)

Thursday 11-15, Session 17, Topic: MPC Systems Under JIT, Class Assignment: U.S. Stroller Case

Tuesday 11-20, Session 18, Mid-term examination

PART 5: OPERATIONS PLANNING AND CONTROL SYSTEMS

Tuesday 11-27, Session: 19, Topic: TOC Scheduling Systems,
Guest Speaker: Mrs. Laura Blum, Production & Inventory Control Supervisor, TOSOH, SMD

Thursday 11-29, Session: 20, Topic: Planning and Scheduling JIT Operations, Guest Speaker: Mr. John Striebich,
Director of Flow Manufacturing & Material Systems, Copeland Corporation

Note 1: A quiz will be given on those sessions marked with an asterisk *.

Note 2: An optional plant tour to the Liebert Corporation is scheduled on Monday 10-8-01 at 9:00 to 10:00 AM.

IX. CASE ASSIGNMENT QUESTIONS :

1. Flashy Flashers Case:

- a) Please use the assignment questions provided at the end of the case.
- b) To simplify your work, please use the Flashy Flasher Excel template provided for this case. This will entail entering case data into the MRP template records, and drawing conclusions from your analysis of the MRP records.

2. U.S. Strollers Case:

- a) Evaluate the current situation facing U.S. Stroller.
- b) Discuss the pros and cons of the options presented in the case.
- c) What will be the impact of these options on the MRP system currently in use? How would you go about handling any implementation issues in the company?
- d) What option do you recommend and why?