New Course Request

Indiana University

Indianapolis Campus

Check Appropriate Boxes: Undergraduate credit [X] Graduate credit [ ] Professional credit [ ]

1. School/Division Business

2. Academic Subject Code Bus

3. Course Number P 421 (must be cleared with University Enrollment Services)

4. Instructor

5. Course Title Supply Chain Management: Material Planning and Logistics

   Recommended Abbreviation (Optional) __________________________ (Limited to 32 Characters including spaces)

6. First time this course is to be offered (Semester/Year): Fall 07

7. Credit Hours: Fixed at ___________ or Variable from ___________ to ___________

8. Is this course to be graded S-F (only)? Yes ___ No ___

9. Is variable title approval being requested? Yes ___ No ___

10. Course description (not to exceed 50 words) for Bulletin publication:

   __________________________________________________________

   __________________________________________________________

   __________________________________________________________

11. Lecture Contact Hours: Fixed at ___________ or Variable from ___________ to ___________

12. Non-Lecture Contact Hours: Fixed at ___________ or Variable from ___________ to ___________

13. Estimated enrollment: ___________ of which ___________ percent are expected to be graduate students.

14. Frequency of scheduling: ___________ Will this course be required for majors? ___________

15. Justification for new course:

   __________________________________________________________

16. Are the necessary reading materials currently available in the appropriate library? ___________

17. Please append a complete outline of the proposed course, and indicate instructor (if known), textbooks, and other materials.

18. If this course overlaps with existing courses, please explain with which courses it overlaps and whether this overlap is necessary, desirable, or unimportant.

19. A copy of every new course proposal must be submitted to departments, schools, or divisions in which there may be overlap of the new course with existing courses or areas of strong concern, with instructions that they send comments directly to the originating Curriculum Committee. Please append a list of departments, schools, or divisions thus consulted.

Submitted By:

__________________________ Date 1/24/07

Department Chairman/Division Director

__________________________ Date ___________

Dean of Graduate School (when required)

__________________________ Date 1/25/07

Chancellor/Vice-President

__________________________ Date ___________

University Enrollment Services

After School/Division approval, forward the last copy (without attachments) to University Enrollment Services for initial processing, and the remaining four copies and attachments to the Campus Chancellor or Vice-President.

UPS 724 University Enrollment Services Final—White; Chancellor/Vice-President—Blue; School/Division—Yellow;
Department/Division—Pink; University Enrollment Services Advance—White
Kelley School of Business - Indianapolis
P421: Supply Chain Management: Material Planning and Logistics

Spring 2008

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COURSE OVERVIEW

Supply Chain Management involves the flows of materials and information among all of the firms that contribute value to a product, from the source of raw materials to end customers. Elements of supply chain management have been studied and practiced for some time in marketing, logistics, and operations management. We will attempt to integrate these different perspectives to develop a broad understanding of how to manage a supply chain.

This course will focus on effective supply chain strategies for companies that operate globally with emphasis on how to plan and integrate supply chain components into a coordinated system. You will be exposed to concepts and models important in supply chain planning with emphasis on key tradeoffs and phenomena. The course will introduce and utilize key tactics such as risk pooling and inventory placement, integrated planning and collaboration, and information sharing. Lectures, Internet simulations, computer exercises, and case discussions introduce various models and methods for supply chain analysis and optimization.

This class will be a mix of lectures, case discussions and applications. The course objectives are to develop analytical and modeling skills, and to provide new concepts and problem-solving tools, applicable to the design and planning of supply chains. Course requirements are to come to class prepared, and to participate in the class.
By the end of the course, you should have developed an appreciation for the challenges in managing a supply chain and the ability to use analytical tools and conceptual frameworks to design and optimize a supply chain in a wide variety of settings. The course objectives are to develop analytic skills and to provide new concepts and problem-solving tools, applicable to the design and planning of supply chains. During this course we will look at planning across the supply chain in two distinct parts as follows:

**Part 1: Adjacent Supply Chain (Supplier – Manufacturer – Customer)**
1. Overview of Planning and Control Systems
2. Material Planning and Control
3. Production Activity Control
4. Aggregate Production Planning
5. Master Production Scheduling
6. Capacity Planning

**Part 2: Extended Supply Chain (Supplier’s Supplier to Customer’s Customer)**
1. Supply Chain Planning
2. Inventory Models
3. Supply Contracts I
4. Inventory systems.
5. Supply chain integration
6. Supply chain integration II
7. Strategic Alliances and Outsourcing
8. Multi-echelon inventory systems
9. Supply Chain and Product Design
10. Supply chain and safety stock placement

**OBJECTIVES OF THE COURSE:**

When you complete this course, you should be able to do the following:
1. Explain the basic components of a supply chain’s planning and control system;
2. Understand the interrelationships among planning and control activities in a business operation;
3. Develop, apply, and interpret the results of basic procedures for inventory planning, capacity management, shop floor control, aggregate production planning, and master scheduling;
4. Understand and appreciate the importance of operations management and the role of information technology in modern planning and control systems.
TESTING AND GRADING PROCEDURES:

Two tests will be given during the semester as well as a comprehensive final examination. In addition, daily work (defined below) is an important part of your semester grade. The five components of your semester grade are as follows:

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<th>Component</th>
<th>Points</th>
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<td>Mid-term maximum</td>
<td>20 (40%)</td>
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<tr>
<td>Daily Work maximum</td>
<td>10 (20%)</td>
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<tr>
<td>Final Exam maximum</td>
<td>20 (40%)</td>
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50 MAXIMUM POINTS FOR THE SEMESTER

Tests:
All tests will contain both problem exercises and questions involving concepts and terminology. Tentative dates for the mid-term will be provided at the beginning of the semester and will be firm at least one week in advance of each test date.

Daily Work:
Daily work consists of short quizzes (both announced and unannounced) on the reading and lecture material. Daily work is an important measure of your interest and participation in the class, and it serves as an incentive for you to keep up with the material on a daily basis. Previous experience in this course has shown that students learn more and perform better on the major tests when they keep up with the material on a daily basis. Each quiz will be graded on a 0 - 10 scale and will be recorded as a daily-work grade. A quiz may be given on an assigned reading or exercise, or on the material covered by the instructor in a previous class period. Quizzes will be short, quick-answer exercises that address major points. It is your responsibility to be in class for all quizzes that are given. If you miss a quiz by being absent from class, or arriving late for class, you will receive a zero daily-work grade for that quiz. Your semester grade for DAILY WORK will be the average of your quiz grades. You may enhance your dailywork average by earning "daily-work credits" as explained below.

Daily-Work Credits:
You may earn a maximum of two "daily-work credits" by attending meetings of APICS-The Educational Society for Resource Management and submitting a one-page typewritten summary of the professional presentation (or plant tour) for each meeting attended. Each daily-work credit results in the lowest daily-work grade being dropped from your semester DAILY WORK average. APICS meetings give you an opportunity to meet professionals in the field of manufacturing management. You may earn a daily-work credit by attending an APICS meeting sponsored by a chapter in the greater Indy or central Indiana area provided that the program
involves a speaker or plant tour. Your typewritten summary must be submitted to the instructor within two working days of the meeting and it must contain an acceptable description of the professional presentation or plant tour. The summary must be well written and it must demonstrate that you paid attention and learned something from the meeting. For each meeting attended and properly reported (up to the maximum of two), you will earn one daily-work credit.

**Grading Scale:**
TOTAL POINTS EARNED (max = 50) SEMESTER GRADE
45.00 - 50.00 A
40.00 - 44.99 B
35.00 - 39.99 C
30.00 - 34.99 D
29.99 or below F

**REQUIRED TEXTBOOKS:**


**OTHER READINGS**

I also recommend and suggest the following books as useful references or complements:
P421: SUPPLY CHAIN MANAGEMENT: MATERIAL PLANNING
AND LOGISTICS SYLLABUS

#1 Mon. Introduction – Overview of Planning and Control Systems

#2 Wed. Diagnosing Supply Chain Problems (Part 1): The “Bullwhip Effect”

Skim: "Fast, Global, and Entrepreneurial: Supply Chain Management,
"Hong Kong Style An Interview with Victor Fung"
http://www.lifung.com/

Here are a few questions to get you thinking about supply chains
and what is going on in industry today:

1. What is a supply chain?
2. How does Li & Fung gain competitive advantage out of supply
chain management? What parts of the supply chain can / do
companies concentrate on? Why?
3. How does information technology fit in with supply chain
management?

Read: "The Bullwhip Effect in Supply Chains"


Prepare: Rank Xerox (A)
http://www.xerox-emea.com/

Rank Xerox Case (A)
1. What competitive pressures faced RX in the late 1980s?
2. What were the problems faced by RX with respect to the
logistics process? What were the causes of these problems?
3. What would you recommend as a “solution” to solve the above
problems?

#4 Wed. Manufacturing Planning and Control

Read: VBWJ Chapter 1
#5 Mon. Material Requirements Planning
Read: VBWJ Chapter 7

#6 Wed. Production Activity Control (I)
Read: VBWJ Chapter 11

#7 Mon. Production Activity Control (II)
Read: VBWJ Chapter 11

#8 Wed. Aggregate Production Planning (I)
Read: VBWJ Chapter 3

#9 Mon. Aggregate Production Planning (II)
Read: VBWJ Chapter 3

#10 Wed. Master Production Scheduling (I)
Read: VBWJ Chapter 6

#11 Mon. Master Production Scheduling (II)
Read: VBWJ Chapter 6

#12 Wed. Demand Management
Read: VBWJ Chapter 10

#13 Mon. Distribution Requirements Planning
Read: VBWJ 8
#14 Wed. Capacity Planning

Read: VBWJ Chapter 10

#15 Mon Midterm Exam

#16 Mon. Supply Chain Planning (Part 1): Planning "Basics"

Read: *Making Supply Meet Demand in an Uncertain World*

#17 Wed. Supply Chain Planning (Part 2): Making Supply Meet Demand

Prepare: Sport Obermeyer, Ltd.
http://www.obermeyer.com/

1. What does Sport Obermeyer’s supply chain look like? Where are the major problems?
2. How should Obermeyer management think (both short-term and long-term) about sourcing in Hong Kong versus Mainland China?
3. Using the sample data given in Exhibit 10, make a recommendation for how many units of each style Wally Obermeyer should order during the initial phase of production. Assume that all ten styles in the sample problem are made in Hong Kong, and that Obermeyer’s initial production commitment must be at least 10,000 units (ignore price differences among styles in your initial analysis.).
4. What operational changes would you recommend to Wally to improve performance?

#18 Mon. Supply Chain Planning (Part 4): Information Technology I

Prepare: Wal-Mart’s Supply Chain Management Practices (B): Using IT/Internet to Manage the Supply Chain
http://www.walmart.com/

#19 Wed. Supply Chain Planning (Part 5): Information Technology II

Prepare: Zara: IT for Fast fashion
http://www.zara.com/
1. Why has Zara been so successful?
2. What does Zara do that is similar to Wal-Mart in terms of IT?
3. What does Zara do differently from Wal-Mart in terms of IT?

#20 Mon. Inventory Models

This class will review basic inventory theory: periodic review order—up-to policy; continuous review reorder point policy. Notes will be posted.

Read: SKS, Chapter 3 Kimball, G. E.

#21 Wed. Inventory systems (1).

Prepare: Steel Works Case. Case permits an application of inventory models and principles. Preparation questions are attached to the case.

#22 Mon. Supply Contracts I

These next two classes will introduce various types of supply chain contracts and examine how these mechanisms work, and in particular, how they help to accomplish supply chain coordination.

Read: SKS, Chapter 3, 53 – 57

#23 Wed. Supply Contracts II

This class is a continuation of Class #22 above.

#24 Mon. Inventory systems

Prepare: Instron: Case requires application of inventory, capacity and queuing tools to perform supply chain analysis. Preparation questions are posted with the case.
#25 Wed. Supply chain integration

Read: SKS Chapter 5

Prepare: Quad Wants to be a Savi Player in Agribusiness
Case examines the business case for using RFID technology for tracking reusable containers. Preparation questions to be posted.

#26 Mon. Strategic Alliances and Outsourcing

Prepare: Campbell Soup Supply Chain
Preparation questions to be posted on web.

Read: SKS, Chapter 6

#27 Wed. Multi-echelon inventory systems

Introduction to challenges, issues and relevant models (e.g., Eppen Schrage) for multi-echelon inventory systems

Read: SKS, Chapter 5, 133 - 138

#28 Mon. Supply Chain and Product Design

Prepare: HP Network Printer Design for Universality
Case illustrates challenges in global supply chain and product design. Assignment questions are attached to case.

Read: SKS, Chapter 9

#29 Wed. Supply chain and safety stock placement

Prepare: HC Starck Case permits application of inventory principles to metal rolling process. Assignment questions are posted with case.
Wrap Up and continuous improvement:
Course summary and feedback; discuss comprehensive supply chain example

#30 Mon. Course wrap-up