Syllabus

Instructor

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Class Meetings

Lectures: Tuesday-Thursday 9:30 - 11:00 AM, IC Room 213.

Laboratories: Wednesday 3:00 - 6:00 PM, IC Room 213.

Text

Ballou, R. H., (1999). **Business Logistics Management**, 4rd Edition. Prentice Hall, Englewood Cliffs, New Jersey.

Class Notes and Class Materials

Class notes and materials are available for downloading from my home page. For each chapter there are three files available for downloading, one with the full text of the notes, one with the presentation overheads (four overheads to a page), and one with the presentation overheads in a PowerPoint show. The first two files are in the Adobe Acrobat 4.0 format (PDF) and are suitable for printing to any postscript printer. They have the PDF extension. You can also print these files to any printer installed under Windows using the Adobe Acrobat reader. The Acrobat reader can be downloaded free of charge from the Adobe site www.adobe.com. The third file is a PowerPoint show file, which allows you to view and print the PowerPoint presentation off-line. The show file has the PPS extension. You can also view the presentation

overheads online from my home page. The HTML files can be viewed with the Microsoft Internet Explorer web browser, which can be downloaded from the Microsoft site www.microsoft.com. You must use a browser capable of displaying frames. The presentation of each chapter starts with a file with the same name as the chapter.

For example, the three files corresponding to the table of contents of the class notes are "*overview.pdf*" for the full text version, "*overview_4.pdf*" for four overheads to a page, *"overview.pps*" for the presentation show file, and *"overview.htm"* for the first web page of this chapter. This syllabus can also be downloaded and printed as Acrobat PDF file "*isye_3101_syllabus.pdf*".

Printed class notes are no longer available from the bookstore.

References and Other Materials

Blanchard, B., (1992). **Logistics Engineering and Management**. Prentice-Hall, Englewood Cliffs, New Jersey.

Francis R. L., L. F. McGinnis, and J. A. White 2nd Edition (1992). **Facility Layout and Location: An Analytical Approach**. Prentice-Hall, Englewood Cliffs, New Jersey.

Johnson J. and D. Wood, (1996). **Contemporary Logistics**. Prentice-Hall, Englewood Cliffs, New Jersey.

Robeson, J. and W. Copacino, (1994). **The Logistics Handbook**. Free Press, New York, New York.

Tompkins J. and D. Harmelink, (1994). **The Distribution Management Handbook**. McGraw-Hill, New York, New York.

Course Objectives

The objective of this course is to teach the student how to successfully complete an engineering design project in order to prepare the student for his senior design project and for later design projects in industry. The vehicle used is the design of industrial logistics systems.

There are five basic skills required in each engineering design project and in order to pass the course the student must show mastery of each of those skills:

1) Basic understanding of the methodologies and practices used in the design field, in this case logistics systems design.

2) Cooperation with team members and management of team efforts.

3) Presentation and influencing skills to defend your design and to get it accepted.

4) Acceptance of and adaptation to changing and imprecise design tasks and use of common (engineering) sense.

5) Acquisition of additional information from a variety of sources, such as trade and academic journals, the printed press, and the Internet.

The following is an extract of the address by Fred W. Garry, Vice-President of Corporate Engineering and Manufacturing, General Electric Company, to the Engineering Deans Institute Meeting (March 27, 1985) which remains current to this day.

> "At the bachelor's level we don't expect an expert level of knowledge, but we would expect that the graduate would be generally aware of the state-of-the-art practices in their discipline specialty and familiar with its jargon and basic concepts.
>
> Today's graduates should be capable of communication clearly and realizing that in the complex industrial world they will usually be members of a team and that influencing skills are important for both team and individual career success.
>
> Today's graduates must be comfortable with change, believe that it is the way of life and that they must continue to learn throughout their careers."

Grading

Laboratory, homework, and reports count for 35 %. If the overall performance of the class is acceptable, then taking the final examination will be by individual student choice after the results of the second test have been returned. If you select not to take the final exam, then the midterm exam counts for 30 % and the second test for 35 %. If you select to take the final exam, then the midterm exam counts for 25 %, the second test counts for 20 % and the final exam counts for 20 %.

Comments and Rules

Teams

Homework, reports, and presentations, and class discussions are due in teams of a maximum of three persons. One grade will be given per team. Teams will remain the same for the duration of the semester, so potential members should ensure that they have compatible schedules. Projects and reports are discussed and corrected during the lab periods. Exercises and true-false question sets are discussed during class periods. The team can select the team member who will present a particular solution. For any presentation during the lab period, at least a title page must be handed in. The persons listed on the title page of the report or presentation will receive a grade for that report or presentation. It is the responsibility of the team to assure that each team member has contributed approximately equally to a report or presentation. Late homeworks and reports will neither be accepted nor graded. The team is responsible for assuring that at

least one member of the team attends every class for getting all information, materials, and scheduling arrangements for the team.

Lecture Summaries

At the beginning of every lecture, a team will be picked and asked to briefly summarize the main points of the previous lecture. The team should be prepared to answer questions such as: "What is the single most important point that you want to remember?" and "What main points were presented last lecture?"

True-False Question Sets

Every week a set of true-false questions will be posted on the web site. One week later, a team will be selected to present in class their answers to the questions. If other teams have a different answer, a consensus answer will be derived through class discussion.

Class Exercises

Occasionally exercises will be assigned in class. One week later a team will be selected and a member of the team must present the team's solution to the class. Fifty percent of the grade will be on the content of the presentation; the other half will be on the format of the presentation. These exercises do not have to be handed in.

Lab Reports and Presentations

Lab projects are of a larger scope than class exercises. Reports should be typewritten, double-spaced, on one side of 8.5 by 11 inch paper and *within* the length limit. All computer printouts and other material must be cut to the same 8.5 by 11-inch size. The reports should be of professional quality. Drawings should satisfy engineering standards; i.e. all elements must be properly dimensioned. Drawings can be created by computer or by hand using a ruler and compass, but lines or circles drawn without ruler or compass are not acceptable.

Presentation should be of professional quality. Audio-visual aids should be limited to overhead transparencies. The team member presenting the solution should be prepared to defend the team's solution and to answer questions. A clear and concise presentation of the solution and insight into the problem are of prime importance, and strict time limits will be imposed. Fifty percent of the grade will be on the content of the presentation; the other half will be on the format of the presentation.

Class Attendance

Class attendance is not mandatory for individual students, but is highly recommended. The team is responsible for assuring that at least one member of the team attends every class for getting all the

information, materials, and scheduling arrangements for the team, for presenting solutions to exercises and true false question sets, and for summarizing the previous class. Students should display a sign with their first and last names and team number or name. Software to create such signs is available in the ISyE Undergraduate Computer Lab.

Exams

Exams typically are open book and open notes. The first part of each exam will consist of a number of true-false questions similar to the questions discussed in class. The exam will also contain a computational question, were numerical correctness count for part of the credit.

Graduating Students

Students graduating at the end of this quarter should contact the instructor immediately.

Course Outline

Week	Start Date	Lecture Topic	Reading Ballou	Reading Notes
1	Aug 22	Overview. Introduction to logistics systems.	Ch. 1+2, Ch. 14	Introduction
2	Aug 29	Demand analysis, pricing, customer service levels	Ch. 3, Ch. 4	
3	Sep 5	Transportation systems	Ch. 6	Transportation Systems
4	Sep 12	Transportation systems, models and networks	Ch. 7	Transportation Models
5	Sep 19	Local delivery routing		
6	Sep 26	Local delivery routing		
7	Oct 3	Forecasting	Ch. 9	Forecasting
8	Oct 10	Forecasting		
8	Oct 11	MIDTERM EXAM		
9	Oct 17	Inventory systems	Ch. 10	Inventory
10	Oct 24	Inventory systems	Ch. 11	
11	Oct 31	Facility location and customer allocation	Ch. 13	Euclidean Location
12	Nov 7	Facility location and customer allocation	Ch. 14	
13	Nov 14	Network Planning		Distribution Systems
14	Nov 21	Network Planning		Distribution Models
15	Nov 28	Global Logistics Systems		
16	Dec 5	Global Logistics Systems		
17	Dec 11	FINAL EXAM WEEK		

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