Department of Industrial Engineering, SUNY at Buffalo  
IE 327 Facilities Design (Spring 1999) 

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Course Home-page: http://www.acsu.buffalo.edu/~nagi/courses/327.html (reference only)  
Office hrs.: M, W 12-1 p.m. & appointment

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Class Schedule: M W F 10-10:50 p.m., 228 Natural Sciences

Course Overview 
This is an introductory course on facilities planning with emphasis on the analysis, design 
and evaluation of manufacturing facilities and material handling systems. The topics covered 
include definition of facilities planning, role of product process and schedule design, flow analysis 
and activity relationship, capacity and space requirements planning, computer aided layout 
planning, material handling systems and equipment, storage and warehousing, mathematical 
approaches to location problems, and performance evaluation and selection among alternatives.

Basic Requirements  
• Algebra and Basic calculus  
• General understanding of the manufacturing environment  
• Internet exposure and Computer programming (any language)

Course Text and References  

Required Work and Grading Policy  
1. Assignments or homeworks - bi-weekly 15%  
Assignments are intended to reinforce the material discussed in the lectures. Most 
assignments will provide practice on the detailed procedures and calculations in facilities 
planning using hypothetical problems of small size. One case study and one report on a plant-
tour will also be assigned as homework. The work will be individual in this case.

2. Short quizzes - 10%  
About 4 or 5 short quizzes will be given in-class, either before a lecture of at the end to 
emphasize active learning of the material on an ongoing basis. These may be surprise (pop) 
quizzes, although you will often be alerted about the approximate date. One (and only one) of 
the lowest grades will be dropped. If you miss a quiz, that can be considered as your lowest 
grade. Make ups will most likely not be provided.

3. Term Project - 15%
Group projects will be performed, addressing problems encountered in real-type applications. Each group (of 4) will seek a manufacturing (preferable) or non-manufacturing enterprise like a factory, health care facility, education facility, government building, etc. and will study the facility design as related to the issues discussed in the course. Recommendations for improving the current situation should be included in the final report. Further direction will be provided during the semester.

4. Exams - two midterms (20% each), one final (20%) 60% 
   (+/- Grading scheme will be in effect)

**Detailed Course Outline**

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**Project Outline**

Form a group of four (or less) people. Seek a manufacturing or service industry of your choice (see examples of lecture 1) or one that is easily accessible to you. Study the facility location and layout. Critically evaluate the situation considering the fundamentals discussed in this course. Come up with your justifications of the existing situation or alternatives for improvement. Use of qualitative as well as quantitative methods is encouraged. The following are the deliverables. (1) Group names (week 1), (2) A project proposal (week 3, 10% of project grade), (3) Mid-term report (30% of project grade), (4) final report (40% of project grade), and (5) End-semester presentation (15 min, 10% of project grade; 10% of grade will be student assigned internal grades). Further direction will be provided during the semester.