

IMSE 474/IMSE 587 - Facilities Design
Fall Semester 2008

Course Description

Analysis planning and design of physical facilities utilizing operations research, engineering, and economic principles. Synthesis of physical plant equipment and people into an integrated system for either service or manufacturing activities. Design of material handling systems. Students are required to select problems of interest and present design project reports.

Instructor: Dr. Rajiv Gupta
Office: 2330 Engineering Complex
Phone: 313-593-5274
E-mail address: rmgupta@umich.edu

Grading:	Test #1	25%
	Test #2	25%
	Test #3	30%
	Project	<u>20%</u> 100%

Textbook

Tompkins, White, Bozer and Tanchoco, Facilities Planning, Third Edition, Wiley 2003

References:

1. S. Heragu, Facilities Design, PWS Publishing Company, 1997
2. Richard C. Muther, Systematic Layout Planning, 2nd edition, Van Nostrand Reinhold, 1987
Richard C. Muther, Systematic Planning of Industrial Facilities-SPIF, (Volume 1 of 2), Management and Industrial Research Institute, 2000
Richard C. Muther, Planning Manufacturing Cells, (Workbook), Society of Manufacturing Engineers, 2002.
3. Richard L. Francis, Leon F. McGinnis, Jr., and John A. White, Facility Layout and Location - An Analytical Approach, second edition, Prentice Hall, 1992.
4. Hanna and Konz, Facility Design & Engineering, Holcomb Hathaway Publishers, 2004

Goals:

This course is designed to give seniors and graduate students in Industrial & Systems Engineering an ability to plan and design industrial as well as service facilities including material handling systems using the knowledge gained in a large number of previous junior and senior level courses.

Date	Topic	Chapter	Book
9/04/08	Introduction	1	T & W
9/09/08	SLP	6	T & W
9/11/08	Scrap, m/c reqt	2,3	T & W
9/16/08	Scrap, M/C requirement, Dept. Planning, Flow	2,3	T & W
9/18/08	Space Requirement	3	T & W
9/23/08	Space Requirement, Layout Methods	3, 6	T&W
9/25/08	Space Requirement, Layout Methods	3, 6	T & W
9/30/08	Computer Assisted Layout Planning	6	T&W Handout
10/02/08	Computer Assisted Layout Planning	6	T & W Handout
10/07/08	Material Handling	5	T & W
10/09/08	Material Handling	5	
10/14/08	Test # 1		
10/16/08	Storage and Warehousing	7	T & W
10/21/08	Storage and Warehousing	7	T & W
10/23/08	Workstation Design		
10/28/08	Personnel Requirements	4	T & W
10/30/08	Lean Manufacturing	8	T & W
11/04/08	Lean Methods, cell design	8	T & W
11/06/08	Impact of Lean Methods on facilities planning and Cell Design	8	T & W Handout
11/11/08	5S and Visual Management		Notes
11/13/08	Receiving & Shipping Location models	7, 10	T & W
11/18/08	Test # 2		
11/20/08	Location models, Queuing Models	10	T & W
11/25/08	Project		
12/02/08	Special Topics		Class Notes
12/04/08	Project Presentations		
12/09/08	Project Presentations		
12/13/08	Test #3		