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Department of Mechanical Engineering	
Industrial Plants Layout and Management (67430)	
Total Credits	**3**
major compulsory	
Prerequisites	P1 : Engineering Economy (67223) OR Numerical Methods (67322) OR Economy &Engineering Management (65301)

Course Contents

Introduction to plant layout and management. Plant location, industrial buildings, types and classification of plant layout. Facilities design procedures. Systematic layout planning: Product-Quality (P-Q) input data, material flow, relationship charts, flow and/ or activity relationship diagrams, space determinations, space relationship diagrams, and selecting the layout. Factors influencing plant layout: Materials, machines and equipment, employee, movement, waiting, service, building and flexibility. Line balancing and assembly lines. Project management.

	Intended Learning Outcomes (ILO's)	Student Outcomes (SO's)	Contribution
1	Be able to formulate quantitative and qualitative models to address facilities location problems	E	30 %
2	Be able to analyze practical problems considering the fundamental principles of facilities planning and material handling	K	15 %
3	Be able to design a factory layout incorporating product, process, and schedule.	C	40 %
4	Be able to work in a team and confident in presenting and defending his work	D	15 %

Textbook and/ or Refrences

Text book: Facilities Planning, J.A. Tompkins et al., John Wiley &Sons, Inc., New York, 2010Additional references; Facility layout and location, Francis, McGinnis &White, Prentice Hall NJ, 1992.Facilities Planning and Design, Alberto Garcia-Diaz and J. MacGregor Smith, Prentice Hall, 2007

Assessment Criteria	Percent (%)
First Exam	25 %
Second Exam	25 %
Final Exam	50 %

Course Plan

Week	Topic
1	Introduction to Facilities Planning
2-3	Product, process and schedule design
4-5	Flow, space, activity relationships, and space requirements First Exam
6-8	Quantitative Facilities Planning Models (Facility Location)
9-12	Layout Planning Models and Design Algorithms Second Exam
13	Material handling principles and equipment
14	Evaluation and selection process of facilities plan
15-16	Project Presentations Final Exam