

MECHANICAL ENGINEERING PROGRAM

ABET COURSE SYLLABUS

ME 427 - Manufacturing Systems (3 credit): Elective Course

Course Description (2008-2010 Catalog):

Study of the ways of organizing people and equipment so that production can be performed more efficiently. Includes production lines design, CIM, GT, FMS, production planning, inventory control and MRP, lean production, JIT, and agile manufacturing

Prerequisite Course: ME 301

Textbook: Mikell P. Groover, Fundamentals of Modern Manufacturing, Materials, Processes, and Systems, Prentice Hall Inc.

Other Reference Material: N/A

Course Coordinator: Z.Y. Wang, Associate Professor

Course learning outcomes:

Provide our students overall pictures of modern manufacturing systems, and the ways of organizing people and equipment to achieve more efficient production.

Relationship of Course to Mechanical Engineering Program Educational Outcomes:

Goal1: Provide mechanical engineering graduates with technical capabilities.					Goal 2: Prepare the mechanical engineering graduates to have effective workplace skills.				Goal 3: Instilling a sense of responsibility as a professional member of society.			
1.a	1.b	1.c	1.d	1.e	2.a	2.b	2.c	2.d	3.a	3.b	3.c	3.d
H	M	L	L	M	M	L	L	M	M	L	M	L

(L)ow (M)edium (H)igh

Topics Covered:

- 1) Computer-Integrated Manufacturing ;
- 2) Process Planning and Production Planning;
- 3) Materials Requirements Planning;
- 4) Just-In-Time Manufacturing;
- 5) Agile manufacturing;
- 6) Automation and Production Systems;
- 7) Group Technology and Flexible Manufacturing System;

- 8) Inventory Control;
- 9) Lean Production;

Laboratory Projects: A student project is assigned in the 10th week to all students, team effort is required.

Assessment of Student Progress toward Course Objectives

Ten homework are assigned in the semester, projects are given in the tenth week, and two mid-terms exams and one final exam are given during the semester.

Class/Laboratory Schedule: MW 11:00-11:45 AM (Fall Semester)

Contribution of Course for meeting Professional Component:

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| (a) Mathematics and basic sciences: | 0 credit |
| (b) Engineering Topics (Design/Science): | 3 credit |
| (c) General Education: | 0 credit |
| (d) Others: | 0 credits |

Prepared By:

Z.Y. Wang

Date:

10/22/2009