Manufacturing Processes
Course Number: IME370
Fall 2008

Course Descriptions:
This course focuses on basic and applied sciences in processing of materials. Specifically, effects of processing on the manufactured parts, selection of processing methods, and their relation with material properties will be discussed. Contemporary and non-traditional processes used in manufacturing are also covered. Laboratory exercises are important components of the course.

Class Meeting:
MW 4:30-5:45 (EB1024), F 8-9:50 (EB0036)

Instructor:
Dr. Sohyung Cho, Assistant Professor in Industrial and Manufacturing Engineering
E-mail: scho@siue.edu
Phone: 650-2817
Office Hours: MW 3-4:30 or by appointment

Text Book:
Fundamentals of Modern Manufacturing, MP Groover, 3rd Edition, Wiley.

Course Schedule*

Week	Chapter - Topic	Lab
1	Ch. 1 - Introduction (Read Sections 1.3 & 1.4) Ch. 3 - Properties of Materials	No Lab
2	Ch. 6 - Metals: Equilibrium Diagrams, Ferrous Alloys, Non-Ferrous Alloys	Basic Metrology: Vernier Calipers, Steel Rule, Vernier Micrometer, Surface Roughness
3	Ch. 6 - Metals: Equilibrium Diagrams, Ferrous Alloys, Non-Ferrous Alloys (Cont'd)	No Lab
4	Ch. 27 - Heat Treatment	Process Heat Treatment
5	Ch. 27 - Heat Treatment Ch. 18 - Fundamentals of Metal Forming	Treatments for Increased Strength
6	Ch. 19 - Bulk Deformation Processes	**Test 1: Ch.'s 1, 3, 6, 27**
7	Ch. 20 - Sheet Metalworking Processes, Deformation and Metalworking Cost Estimation	Bulk Deformation Lab
8	Ch. 21 - Theory of Metal Machining	No Lab
9	Ch. 21 - Theory of Metal Machining	**Test 2: Ch.'s 18, 19, 20**
10	Ch. 24 - Machinability and Machining Cost Estimation	Turning
11	Ch. 23 - Cutting Tool Technology	Turning
12	Ch. 22 - Machining Operations: Turning and Boring	Milling
13	Ch. 22 - Machining Operations: Drilling and Hole Making	Milling
14	Ch. 22 - Machining Operations: Milling	Open Lab
15	Ch. 22 - Machining Operations: Broaching, Sawing, and Filing	Open Lab
16	Finals Week	**Test 3: Ch.'s 21, 22, 23, 24**

*** The schedule is subject to sudden changes.**

Grading Policy:
Test 1: 15%, Test 2: 20%, Test 3: 25%, HW&Quiz: 10%, PJT: 15%, LABS: 15% (Total 100%)
>90% - : A
80-89%: B
70-79%: C
60-69%: D
<50%: F

Quizzes:
There will be several unannounced quizzes given during the semester. You will not be allowed to make up missed quizzes under any circumstances except medical situations with doctor's note.

Project:
A semester project will be completed by each lab group. The project statement will be handed out within the first two weeks of class. The project is to be turned in by the given due date (TBA). Late projects will receive zero credit.

Laboratory Assignments:
It will be necessary for some lab work to be performed outside of the scheduled lab meeting times. Sign-up sheets will be posted so that students may reserve equipment when this necessity arises.

Late Assignments:
Late assignments will not be accepted in any circumstances.

Hardware and Software Issues:
Failure of computers, peripheral hardware (such as printers), and software difficulties will not be accepted as an excuse for failure to complete assignments before their deadlines. If you plan to use a computer to complete some or all of your work, it is advisable that you perform this work well in advance of the time that it is to be submitted in order to avoid these difficulties.

Collaboration:
If collaboration is to be allowed on an assignment, that fact will be announced verbally in class, and as a written statement in the problem assignment. Unless it is specifically stated otherwise, you are to **assume that each assignment is to be completed individually.** If two or more students turn in similar assignments, each of those involved in the collaboration will receive zero credit on that assignment.

Missed Tests:
Only an extreme emergency (hospitalization, etc.) will be considered to be a valid reason for missing a test. Tests missed without a valid reason will be assigned a grade of zero. For a make-up test to be arranged, the instructor must be notified at least one week in advance.

Semester Project:
A semester project will be completed by each lab group. The project statement will be handed out within the first two weeks of class. The project is to be turned in by 2:00 on Thursday, December 9. Late projects will receive zero credit.

Body of Knowledge:
Before enrolling in this course, it is expected that you have mastered a thourough understanding of the common engineering materials from which workparts are typically fabricated, and the ways in which the properties of these materials may be manipulated. Such an understanding may be obtained through the completion of courses in Engineering Materials (SIUE ME370), and Mechanics of Materials (SIUE CE342).

Academic Conduct:
Cheating on examinations, submitting work of other students as your own, or plagiarism in any form will result in penalties ranging from an F on the assignment to expulsion for the university, depending on the seriousness of the offense.