

INSTRUCTOR: 曾柏昌 教授

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DESCRIPTIONS: The purpose of this course is to introduce some basic concepts and techniques involved in the manufacturing processes. Topics like materials, measurement and quality assurance, and material removal processed will be covered. The modern manufacturing concept such as design for manufacturing and the environmentally conscious design and manufacturing are also the hot topics in this class.

PREREQUISITES: None

TEXTBOOK:

Mikell P. Groover, "Fundamentals of Modern Materials, Processes, and systems Manufacturing, " 3 edition, WILEY, 2007, 開發圖書代理

REFERENCES:

1. Sherif D. El Wakil "processes and Design for manufacturing, " second edition, PWS publishing company, 1998.
2. DeGarmo, E.P., Black, J.T., and Kohser, R.A., "Materials and Processes in Manufacturing", 7th edition, Macmillan Publishing Company, 1988.
3. Kalpakjian, S., "Manufacturing Processed for Engineering Materials", 2nd edition, Addison Wesley, 1991.
4. Niebel, B.W., Draper, A.b., and Wysk, R.A., "Modern Manufacturing Process Engineering", McGraw-Hill, 1989.

COURSE OUTLINE:

- I. Introduction of Manufacturing Systems
- II. Engineering Materials
- III. Manufacturing Processes
 - Casting and Foundry Work
 - Joining of Metals
 - Metal Forming
 - Sheet Metal Working
 - Powder Metallurgy
 - Plastics
 - Metals Cutting
 - IC Processing
- IV. Design for Assembly
 - Cost Estimation
 - Design for Assembly and Manufacturing
 - Environmentally Conscious Design and Manufacturing
- V. Computer Aided Manufacturing
 - Automated Manufacturing System

GRADING:

1. 3 Exams 60%, (3/27, 5/15, 6/19)
2. 4 Chapters Reading and Survey Reports 20%, (Ch.2)3/25, (Ch.20)4/17, (Ch.29)5/22, (Ch.34)6/17
3. Many Technology of Video Reports and Quiz 20%