Degree Applicable

Glendale Community College
September, 1998
Revised October 2006

# COURSE OUTLINE

## ENGINEERING 109

I. Catalog Statement

Engineering 109 – Fundamentals of Computer Aided Design (Basic Autocad) – 3 units

Prerequisite: Engineering 101 or Architecture 101

Engineering 109 introduces Computer-Aided Design systems. Fundamental operational applications are presented enabling students to expand their knowledge of Computer Design into other course structures which will require further knowledge as part of their course of instruction.

Lecture 2 hours, laboratory 4 hours

II. Objectives

Students will be able to:

l. complete a series of problems demonstrating their basic knowledge and skills in utilizing a computer aided drafting system;
2. acquire a basic knowledge of computer aided manufacturing by completion of a series of engineering documents;
3. utilize the computer system to complete a series of basic design problems.

III. Text Text reflects current CAD system used in industry.

IV. Course Outline

A. General Overview 4 hours

1. Brief history of computer graphics
2. Why computer graphics
3. Machine functions
    a. Overall drawing process
    b. New software
    c. System analysis

B. General Operational Guidelines 5 hours
C. General Software Procedure 5 hours
    1. Sequence of commands
    2. Use of on-line documentation
    3. Use of off-line documentation
D. Fundamental Operational Commands 12 hours
    l. Lines
    2. Points
    3. Circles
    4. Window
    5. Offset
    6. Mirror
    7. Space
    8. Arcs
E. Specific Operational Commands 6 hours
    l. Splines
    2. Drawing sequence
    3. Details
    4. Use of tutorials
F. Dimensioning Commands 6 hours
    l. Text insertion and removal
    2. Text edit
    3. Dimension insertion
G. Miscellaneous Operation Commands 10 hours
    1. Off set
    2. Points
    3. Open drawing
    4. Retrieve
    5. Construct drawing formats
    6. View function
    7. Copy function
    8. Section function
    9. Menu options
H. Basic Mechanical Applications 8 hours
I. Basic Printed Circuit Application 8 hours
J. Basic Graphic Applications 8 hours
K. Basic Architectural Applications

V. Examination/Evaluation Procedures

Quizzes, mid-term, and final examination

VI. Special Features

Industry field trips