SAULT STE. MARIE, ON

SAULT COLLEGE OF APPLIED ARTS AND TECHNOLOGY

COURSE OUTLINE

COURSE TITLE: _____ **INTRODUCTION TO AUTOCAD** _____

CODE NO : ____ **CAD 120** _____ **SEMESTER:** ____ **I** _____

PROGRAM: ____ **ARCHITECTURAL TECHNICIAN** _____

INSTRUCTOR: _____ **H. PIETRZAKOWSKI** _____

DATE: ____ **AUG 1994** ____ **PREVIOUS OUTLINE DATED:** ____ **SEPT 1993** ____

AUTHOR: _____ **DAN GRAND** ____

APPROVED: _____ ____ 94-C8-29 ____
                             DEAN   **DATE**

TOTAL CREDITS: 3

PREREQUISITES: NONE

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I. PHILOSOPHY / GOALS

This course will introduce the student to the fundamentals of computer assisted
drafting using Autocad. Practical exercises will help the student develop a basic
knowledge of Autocad. The student will understand the fundamental concepts of
computer applications related to drafting and engineering drawing.

II. STUDENT PERFORMANCE OBJECTIVES (OUTCOMES)

Upon successful completion of this course, the student will be able to:

1.   Introduction to Cad
        . Identify computer equipment
        . Use computer lab methods and procedures
        . Use drawing planning procedures and system management
        . Know and follow the rules of hygiene in computer labs
2.   Starting Autocad
        . Define MS-DOS
        . Start the Autocad program and getting HELP
        . Use the screen layout and menu structure
        . Identify and operate input devices
        . Format a floppy disk
3.   Drawing Set-up
        . Use the main menu
        . Begin a new drawing
        . Set limits and units

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4. Drawing and Drawing Aids
   - Set grid and snap
   - Use ortho command
   - Access drawings aids through settings menu
   - Use the line and dline command
   - Establish a prototype drawing

5. Saving Work
   - Use the save, end and quit commands
   - Use the cancel command
   - Use the status command

6. Drawing and Erasing Lines
   - Define absolute, relative and polar coordinates
   - Utilize ortho mode and turn on coordinate display
   - Distinguish and use line and pline commands
   - Use the erase, fill and redraw commands

7. Drawing Basic Shapes
   - Identify dragmode
   - Draw arcs and circles
   - Use the @ symbol function
   - Use the polygon and multiple commands

8. Basic Editing Commands
   - Use the move and copy, and multiple copy commands
   - Use the mirror command
   - Use the chamfer and fillet commands
   - Use the break, extend, trim and change commands
   - Use the scale, stretch, rotate and align commands

9. Drawing Tools
   - Use the OSNAP commands
   - Use the override function
   - Using offset and other drawing tools

10. Automatic Editing using Grips
    - Use the GRIP command
    - Use the ARRAY command

11. Display Options
    - Create VIEWS
    - Use zoom all, extents and previous
    - Use the zoom dynamic command
    - Transparent use of commands

12. Text Options
   . Distinguish and use DTEXT and QTEXT
   . Use style and underscore commands
   . Use special symbols and pull down menus to create and edit text

13. Layer Design
   . Understand and use the layer command
   . Assign layer names, line types and colour by layer
   . Turn layers on and off
   . Use the freeze/thaw commands

14. Dimensioning
   . Place horizontal and vertical dimension on a drawing
   . Use the continuous dimensioning function
   . Use the base and leader line functions
   . Manipulate various dimensioning features.
   . Utilize tolerance dimensioning.
   . Use radius, angular and rotated dimensioning.
   . Manipulate text position, extension and dimension lines.

15. Graphic Pattern
   . Use the Hatch and Solid commands
   . Know how to set hatch patterns

16. Blocks and Attributes
   . Know how to use BLOCK and WBLOCK commands
   . Define ATTRIBUTES
   . Setup XREF drawings

17. Printing and Plotting
   . Plot to a printer
   . Plot to plotting devices

III. TOPICS TO BE COVERED

1. Introduction to Cad
2. Starting Autocad
3. Drawing Set-up
4. Drawing and Drawing Aids
5. Saving Work
6. Drawing and Erasing Lines
7. Drawing Basic Shapes
8. Basic Editing Commands
9. Drawing Tools
10. Automatic Editing using Grips
11. Display Options
12. Text Options
13. Layer Design
14. Dimensioning
15. Graphic Pattern
16. Blocks and Attributes
17. Printing and Plotting

IV. LEARNING ACTIVITIES/REQUIRED RESOURCES

1 INTRODUCTION

Learning Activities:
  Attend lecture and practical demonstration
  Take notes

Resources:
  Chapter #1, overheads, handout
  Practical demonstration , assignment #1

IV. LEARNING ACTIVITIES/REQUIRED RESOURCES(continued)

2 STARTING AUTOCAD

Learning Activities:
   Attend lecture and practical demonstration
   Take notes
   Complete practical exercises

Resources:
   Chapter #2, overheads, 2 floppy disks (preferably 3.5")
   Practical demonstration, assignment #1

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3 DRAWING SET-UP

Learning Activities:
   Attend lecture and practical demonstration
   Take notes
   Complete practical exercises

Resources:
   Chapter # 3 , overheads
   Practical demonstration, assignment #2

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4 DRAWING AND DRAWING AIDS

Learning Activities:
   Attend lecture and practical demonstration
   Take notes
   Complete practical exercises

Resources:
   Chapter #4 , overheads
   Practical demonstration, assignment #2

IV. LEARNING ACTIVITIES/REQUIRED RESOURCES (continued)

5 SAVING DRAWINGS

Learning Activities:
   Attend lecture and practical demonstration
   Take notes
   Complete practical exercises

Resources:
   Chapter #5, overheads
   Practical demonstration, assignment #3

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6 DRAWING AND ERASING LINES

Learning Activities:
   Attend lecture and practical demonstration
   Take notes
   Complete practical exercises

Resources:
   Chapter #6 and #16, overheads
   Practical demonstration, assignment #3

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7 DRAWING BASIC SHAPES

Learning Activities:
   Attend lecture and practical demonstration
   Take notes
   Complete practical exercises

Resources:
   Chapter #7 , overheads
   Practical demonstration, assignment #4

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IV. LEARNING ACTIVITIES/REQUIRED RESOURCES (continued)

8 BASIC EDITING COMMANDS

Learning Activities:
  Attend lecture and practical demonstration
  Take notes
  Complete practical exercises

Resources:
  Chapter # 11, overheads
  Practical demonstration, assignment #5

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9 OBJECT SNAP AND GEOMETRIC CONSTRUCTION

Learning Activities:
  Attend lecture and practical demonstration
  Take notes
  Complete practical exercises

Resources:
  Chapter #8, overheads
  Practical demonstration, assignment #6

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10 AUTOMATIC EDITING

Learning Activities:
  Attend lecture and practical demonstration
  Take notes
  Complete practical exercises

Resources:
  Chapter #12 and #13
  Practical demonstration, assignment #8

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IV. LEARNING ACTIVITIES/REQUIRED RESOURCES (continued)

11 DISPLAY OPTIONS

Learning Activities:
    Attend lecture and practical demonstration
    Take notes
    Complete practical exercises

Resources:
    Chapter 9 pages 1-13
    Practical demonstration, assignment #8

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12 TEXT

Learning Activities:
    Attend lecture and practical demonstration
    Take notes
    Complete practical exercises

Resources:
    Chapter #10 , overheads
    Practical Demonstration, assignment #8

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13 LAYERS

Learning Activities:
    Attend lecture and practical demonstration
    Take notes
    Complete practical exercises

Resources:
    Chapter #17 pages 8 - 21 ,   chapter #14, overheads
    Practical demonstration, assignment #9

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IV. LEARNING ACTIVITIES/REQUIRED RESOURCES (continued)

14 DIMENSIONING

Learning Activities:
  Attend lecture and practical demonstration
  Take notes
  Complete practical exercises

Resources:
  Chapter #18, overheads
  Practical demonstration, assignment #10

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15 GRAPHIC PATTERNS

Learning Activities:
  Attend lecture and practical demonstration
  Take notes
  Complete practical exercises

Resources:
  Chapter #20, overheads
  Practical demonstration, handout

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16 BLOCKS AND ATTRIBUTES

Learning Activities:
  Attend lecture and practical demonstration
  Take notes
  Complete practical exercises

Resources:
  Chapter #21
  Practical demo and handout

IV. LEARNING ACTIVITIES/REQUIRED RESOURCES (continued)

17 PRINTING AND PLOTTING

Learning Activities:
  Attend lecture and practical demonstration
  Take notes
  Complete practical exercises

Resources:
  Chapter #27
  Plotting demonstration

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V. METHOD OF EVALUATION

Students will be assigned a final grade based on successful completion of assignments, quizzes and tests.

Assignments	(8-10)	25%
Quizzes	(8-10)	25%
Tests	(2-3)	40%
Attendance		10%
TOTAL		**100%**

Attendance is mandatory for successful completion and absenteeism will not be tolerated.

A final grade will be assigned as follows:

A+	90-100%
A	80-89%
B	70-79%
C	55-69%
R	Repeat

VI. RESOURCE MATERIALS

Required text:

Terence M. Shumaker , David A. Madsen, Autocad and its Applications Release 12
The Goodheart-Wilcox Company Inc. (available in Campus Shop)

The student should also have a 3.5" high density floppy disk, for saving work and submitting assignments.

VII. ADDITIONAL RESOURCES AND MATERIALS

In addition to the recommended course text, there are numerous books available in the library related to Autocad and more generally to CAD

VIII. SPECIAL NEEDS

Students with special needs are encouraged to discuss required accommodations in confidence with the instructor.

The instructor reserves the right to modify the course and course outline as deemed necessary to meet the needs of the students.

CAD ROOM RULES AND GUIDELINES

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1. Autocad should be properly exited, or terminated before shutting off power.

2. The computer must be shut off using the power bar switch.

3. Place the input device in the proper location when finished.

4. The digitizer or plotter should not be moved to other locations.

5. ABSOLUTELY NO BEVERAGES OR FOOD ARE ALLOWED IN THE CAD ROOM!

6. Do not create any subdirectories.

7. DO NOT APPLY FORCE WHEN INSERTING DISKETTE INTO THE B: DRIVE.

8. Call your instructor or monitor if the Virus alarm shows on your system.

9. Use the subdirectory C:\acad\data for temporary placement of files.

10. Do not attempt to install software on the computers.

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