

Welcome to CAD! The first part of this class will be spent mastering the AutoCad software and then using it to further develop your drawing and design skills. Like Design and Drawing the second semester of the course will be used to create Architectural plans. This class may open new and exciting opportunities to you, which could include a career in this field.

- Text:** 1. AutoCAD 2000: A Problem-Solving Approach, Sham Tickoo  
2. Architectural AutoCad:Design/Drafting/Presenation, Madsen, Palma  
3. Applying AutoCad 2007, Wohlers

**Course Topics:**

**Week 1 – Chapter 1 Getting Started**

1. Starting a Drawing
2. Invoking Commands in AutoCad
3. AutoCad Dialog Boxes
4. Drawing Lines
5. Coordinate Systems
6. Erasing objects
7. Canceling and Undoing a Command
8. Creating Selection Sets
9. Move Command
10. Drawing Circles
11. Basic display commands
12. Creating Text
13. Plotting Drawings
14. Saving Your Work
15. Open an Existing File
16. Start a New Drawing
17. Save Drawing As Dialog Box
18. Select File Dialog Box
19. Automatic Timed Save
20. Creation of Backup Files
21. Options Dialog Box
22. Command Line Recall and Editing
23. AutoCad's Help

**Week 3 – Chapter 2: Draw Commands**

1. Drawing Arcs
2. Drawing Rectangles
3. Drawing Ellipses
4. Drawing Regular Polygons
5. Drawing Traces
6. Drawing Poly lines
7. Drawing Doughnuts
8. Drawing Points

**Week 4 – Chapter 3: Drawing Aids**

1. Setting Units
2. Limits Command

3. Layers
4. Layer Property Manager Dialog Box
5. Drafting Settings Dialog Box
6. Status Line
7. Object Snaps
8. Running Object Snap Mode
9. Function and Control Keys
10. Using Auto Tracking
11. Global and Current Line Type Scaling
12. LTSCALE Factor and Plotting

#### Week 5 – Chapter 4: Editing Commands

1. Creating a Selection Set
2. Editing Commands
3. Copy Command
4. COPYBASE Command
5. PASTE BLOCK Command
6. PASTEORIG Command
7. OFFSET Command
8. Scale Command
9. FILLET Command
10. CHAMFER Command
11. TRIM Command
12. EXTEND Command
13. STRETCH Command
14. LENGTHEN Command
15. ARRAY Command
16. MIRROR Command
17. BREAK Command
18. MEASURE Command
19. DIVIDE Command
20. MATCHING Command
21. PROPERTIES Command
22. QSELECT Command

#### Week 6 – Chapter 5: Controlling Drawing Display and Creating Text

1. Basic Display Options
2. REDRAW Command
3. REGEN Command
4. ZOOM Command
5. PAN Real-time Command
6. Creating Views
7. TEXT and DTEXT Command
8. Drawing Special Characters
9. Creating Paragraph Text (MTEXT Command)
10. Editing Text
11. Substituting Fonts
12. Specifying an Alternate Default Font
13. STYLE Command
14. Determining Text Height
15. Checking Spelling
16. Formatting Paragraph Text
17. Text Quality and Text Fill
18. Finding and Replacing Text

#### Week 7 – Chapter 6: Basic Dimensioning

1. Need for Dimensioning
2. Dimensioning in AutoCad
3. Fundamental Dimensioning Terms
4. Associative Dimensioning
5. Definition Points
6. Selecting Dimensioning Commands
7. Quick Dimensioning (QDIM Command)
8. Linear Dimensioning
9. Aligned Dimensioning
10. Rotated Dimensioning
11. Baseline Dimensioning
12. Continue Dimensioning
13. Angular Dimensioning
14. Diameter Dimensioning
15. Radius Dimensioning
16. Generating Center Marks and Centerlines
17. Ordinate Dimensioning
18. Drawing Leaders

#### Week 8 – Chapter 7: Editing Dimensions

1. Editing Dimensions
2. Editing Dimensions (DIMEDIT Command)
3. Editing Dimension Text (DIMTEDIT Command)
4. Updating Dimensions
5. Editing Dimensions with Grips
6. Editing Dimensions Using the Properties Command
7. Object Properties Window (Dimension)
8. Object Properties Window (Leader)
9. Model Space and Paper Space Dimensioning

#### Week 9 – Chapter 8: Dimension Styles and Dimensioning System Variables

1. Using Styles and Variables to Control Dimensions
2. Creating and Restoring Dimension Styles
3. New Dimension Style Dialog Box
4. Controlling Dimension Text Format
5. Fitting Dimension Text and Arrowheads
6. Formatting Primary Dimension Units
7. Formatting Alternate Dimension Units
8. Other Dimension Variables
9. Dimension Style Variables
10. Using Dimension Style Override
11. Comparing and Listing Dimension Styles
12. Using Externally Referenced Dimension Styles

#### Week 10 – Chapter 9: Geometric Dimensioning

1. Editing with Grips
2. Adjusting Grips Settings
3. Stretching Objects with Grips
4. Moving Objects with Grips
5. Rotating Objects with Grips
6. Scaling Objects with Grips
7. Mirroring Objects with Grips
8. Changing Properties using Grips
9. Loading Hyperlinks
10. Editing Gripped Objects
11. Grip System Variable

#### Week 11 – Chapter 11: Hatching

1. Hatching

2. The BHATCH Command
3. Boundry Hatch Options
4. Ray Casting Options
5. Hatching around Text, Traces, Attributes, Shapes, and Solids
6. Editing Associative Hatch Patterns (HATCHEDIT Command)
7. Using PROPERTIES Command
8. Editing Hatch Boundary
9. Hatching Blocks and Xref Drawings
10. Pattern Alignment During Hatching
11. The Boundary Command
12. Other Features of Hatching
13. Hatching by Using the Hatch Command

#### Week 12 – Chapter 12: Blocks

1. The Concept of Blocks
2. Formation of Blocks
3. Converting Objects into a Block
4. Inserting Blocks
5. INSERT Command
6. –INSERT Command
7. Presetting the Rotation, Angle, and Scale Factors
8. Using AutoCAD Design Center to Insert Blocks
9. Layers, Colors, Line types and Line weights for Blocks
10. Nesting of Blocks
11. Inserting Multiple Blocks (MININSERT Command)
12. Creating Drawing Files (WBLOCK Command)
13. Using the –WBLOCK Command
14. Defining the Insertion Point
15. Editing Blocks
16. Renaming Blocks
17. Deleting Unused Blocks

#### Week 13 – Chapter 19: Isometric Drawing

1. Isometric Drawings
2. Isometric Projections
3. Isometric Axes and Planes
4. Setting the Isometric Grid and Snap
5. Drawing Isometric Circles
6. Dimensioning Isometric Objects
7. Isometric Text

Weeks 14-20-Will spent completing drawings that reinforce the concepts already presented. These drawings will be assigned at the teacher's discretion. This will include the Term Project.

Week 21 – Architectural drawing introduction

Week 23 – Floor Plans

Week 25 – Elevations

Week 27 – Wall Sections

Week 29 – Foundation Plan

Week 31 – Roof and Plot Plan

Week 32-40- Students will design a new house which adheres to a chosen Architectural style.

**Saving a Drawing:**

Every Drawing must be saved under the following format

“LastNameDrawing#Per”

Example: If I completed Drawing number 4 in Third Period I would save it as follows  
HowardDrawing#4Per3

**Assignments:**

Reading assignments will be given periodically to supplement and reinforce the information presented in class. Quizzes may accompany these assignments to reinforce ideas.

**Class Activities:**

1. Most activities for this class will be drawings.
2. Some time will be spent organizing your portfolio

**Title Block Creation:**

Each student will create a unique title block, both A and B sizes, which will be used on most of their drawings for the course. This will be created using criteria that will be given to each student.

**Term Project:**

Each student will have to choose a very detailed drawing or several smaller ones to be completed as a term Project. The term project will be graded with a rubric which will be provided to the student prior to the project. This project will constitute the students mid-term exam grade

**1<sup>st</sup> House Project:**

Each Student will transfer the house that they drew in Design and Drawing to the computer. No major modifications will made to the house at this time.

**2<sup>nd</sup> House Project:**

Each Student will design a house using a chosen Architectural Style. There is no size constraint however the house must conform to the chosen style.

**Final Exam:**

The student's final exam grade will be determined by averaging the Term Project Grade, the 2<sup>nd</sup> House Project Grade, and the Portfolio Grade.

**Portfolio:**

Each student is expected to keep a 3-ring binder which will serve as a professional portfolio. This Portfolio will include the following-

1. Table of contents with dividers
2. One section for the course syllabus
3. Assigned Drawing check off list section
4. Term Project Section
5. Portfolio Evaluation Section
6. AutoCad Exercises
7. A section for the first house
8. A section for the second house
9. Handouts and Exercises
10. A burned CD that includes all of your Drawings

**Grading**

Grading will be based on a point system. You accumulate points throughout the semester and then your grade will be based on the percentage of points that you earned.

Quizzes and other assignments -	20 points
Term Project -	100 points
House Plans -	100 points
Group Projects-	100 points
Drawings -	20 Points Each

All grades will be determined by adding up the total points accumulated by the student and divided by the possible points and multiplied by 100.

**Late Policy**

Assignments which are late more than one day will not receive any credit

**Drawing Equipment:**

Each student is responsible for your computer for the duration of the year. Treat your workstation with respect!

**Rules:**

1. Come to class on time and prepared for class. No one will be allowed to leave for materials, which should be present once class has started. Bring a pass if you are late, 3 lates without a pass will result in referral to office.
2. Treat other students and teacher with respect
3. Comply with all requirements and guidelines in the student handbook.
4. Wear safety glasses when in the work area.
5. Respect all tools and machinery. This includes putting things back and cleaning up when you are done.
6. Comply with all safety rules and regulations.
7. No horsing or fooling around.

**Consequences:**

1. Verbal Warning-From Teacher
2. Time Out-Student will be asked to leave work area and sit in front of the room for the remainder of the period.
3. Conference with student-Teacher and student will have a conference
4. Phone call or letter to parent or guardian.
5. REFERRAL TO OFFICE.

**\*\* ANY STUDENT THAT VIOLATES A SAFETY RULE DURING WORK TIME WILL BE IMMEDIATELY REMOVED FROM THE ACTIVITY FOR THE REMAINDER OF THE PERIOD. THE SECOND VIOLATION WILL RESULT IN AFTER SCHOOL DETENTION WITH ME**

Student Name \_\_\_\_\_

**Return to Mr. Howard by** \_\_\_\_\_

I have read and understand the above expectations and will contact Mr. Howard with any problems or questions.

Student signature: \_\_\_\_\_

**Parent or Guardian signature:** \_\_\_\_\_