



Broward Community College

Course Outline

STATUS: A

COMMON COURSE NUMBER: ETD 2350C

COURSE TITLE: Advanced CAD

CREDIT HOURS: 3

CONTACT HOURS BREAKDOWN:

Lecture/Discussion 16

Lab 48

Other _____

Contact Hours/Week 3

CATALOG COURSE DESCRIPTION:

Prerequisite: ETD 1320

Co requisite: None

Additional topics in Auto CAD. These include blocks, move and copy, array, mirror, text, text styles, 3D and isometric modes. The development of macro operations as in Basic CAD. Extra lab hours are available.

General Education Requirements - Associate of Arts Degree, meets Area(s):

General Education Requirements - Associate in Science Degree, meets Area(s):

UNIT TITLES:

1. Advanced Editing Commands
2. Use of Blocks
3. Dimensioning
4. System Variables
5. Slides and scripts
6. Attributes
7. 3D Drawing
8. Menu Customization
9. Advanced DOS Commands
10. Plotting and Printing

I. Course Overview:

Upon successful completion of this course, the students should be able to use advanced Auto CAD commands to quickly and efficiently produce 2D and 3D drawings; Also be able to modify the Auto caps environment (menus, Macros, etc.) to boost productivity.

II. Units:

Unit 1. Advanced Editing Commands

General Outcome:

- 1.0 The students should be able to use advanced editing commands to produce drawings more productively.

Specific Learning Outcomes:

Upon successful completion of this unit, the students should be able to:

- 1.1 Use and understand the following commands and their attendant subcommands: Array, Hatch, Sketch, Divide, Measure and Area.
- 1.2 Create and use a selection set using the select command.

Unit 2. Use of Blocks

General Outcome:

- 2.0 The students should be able to create a library of often used parts and be able to insert these parts and edit them.

Specific Learning Outcomes:

Upon successful completion of this unit, the students should be able to:

- 2.1 Use the block and Wblock commands to create blocks for use within a drawing and in any other drawing.
- 2.2 Understand how different layers create blocks with differing properties; also understand how to create scaleable (1 x 1) blocks.
- 2.3 Insert blocks into drawings at different scale factors and rotations; also, how to insert a pre-exploded block.
- 2.4 Turn an inserted block back into individual entities using explode and understand the limitations of the explode command.
- 2.5 Purge unused blocks (and layers.) from a drawing to save disk space.
- 2.6 Change the insertion point of a block using base; be able to use the minsert command.

Unit 3. Dimensioning

General Outcome:

- 3.0 The students should be able to use all of Auto CAD's dimensioning commands.

Specific Learning Outcomes:

Upon successful completion of this unit, the students should be able to:

- 3.1 Use all linear dimensioning commands: Horizontal, vertical, aligned, rotated, continue and baseline.
- 3.2 Use circle and arc dimensioning commands, radius and diameter.
- 3.3 Dimension angles using angular dimensions.
- 3.4 Use dimension utility commands, leader, center, update, hometext and newtext.
- 3.5 Know the benefits and uses for associative dimensions.

Unit 4. System Variables

General Outcome:

- 4.0 The students should be able to manipulate and understand Auto CAD's system variables.

Specific Learning Outcomes:

Upon successful completion of this unit, the students should be able to:

- 4.1 Change the appearance of dimensions by modifying the dimension variables.
- 4.2 Change and understand other various system variables such blipmode, dragmode, PDmode, etc.

Unit 5. Slides and Scripts

General Outcome:

5.0 The students should be able to produce a presentation style slide show.

Specific Learning Outcomes:

Upon successful completion of this unit, the students should be able to:

- 5.1 Make and view slides; understand how to remove slides from the screen.
- 5.2 Create script files to run slides in order or for command macros.
- 5.3 Use the delay, resume and Rscript commands to control the timing of script files.
- 5.4 Have a basic understanding of how to use a line editor (Edlin).

Unit 6. Attributes

General Outcome:

- 6.0 The students should be able to create blocks with attributes; produce a title block which prompts for title, name, date, etc. when inserted.

Specific Learning Outcomes:

Upon successful completion of this unit, the students should be able to:

- 6.1 Define attributes using the Attdef command.
- 6.2 Edit existing attributes singly and globally using Attdit.
- 6.3 Control how attributes are shown by using the attdisp command.
- 6.4 Understand how attributes are extracted using the atttext command.

Unit 7. 3D Drawing

General Outcome:

- 7.0 The students should be able to produce complex 3 dimensional drawings accurately and efficiently.

Specific Learning Outcomes:

Upon successful completion of this unit, the students should be able to:

- 7.1 Produce isometric drawings using isometric mode and isocircles.
- 7.2 Set current elevation and thickness using the elev command; change an objects elevation and thickness using the change command.
- 7.3 Look at 3D objects from different angles using the Vpoint and Dview commands; use the hide command to remove hidden lines.
- 7.4 Draw 3 dimensional objects using the 3Dline, 3Dface, edgesurf, 3Dpoly, revsurf, rulesurf and tabsurf commands.
- 7.5 Control drawing planes by using the UCS (user coordinate system) command; split the screen into multiple views using the Vport command.
- 7.6 Produce a filmroll file compatible with Autoshade by using the lights, camera, action autoshade commands.

Unit 8. Menu Customization

General Outcome:

- 8.0 The students should be able to create custom tablet and screen menus; be able to digitize drawings into Auto CAD.

Specific Learning Outcomes:

Upon successful completion of this unit, the students should be able to:

- 8.1 Understand the different areas of the Auto CAD menu structure.
- 8.2 Understand the syntax used when creating menus.
- 8.3 Produce a simple tablet and screen menu.
- 8.4 Understand how to calibrate and configure a tablet and tablet menu.
- 8.5 Load various menus using the menu command.

Unit 9. **Advanced DOS Commands**

General Outcome:

- 9.0 The students should be able to modify the DOS environment to optimize and make access to programs easier.

Specific Learning Outcomes:

Upon successful completion of this unit, the students should be able to:

- 9.1 Know and understand the Auto CAD environment settings.
- 9.2 Write batch files to ease access to software.
- 9.3 Understand the configsys and autoexec.bat files.
- 9.4 Understand the use of the path and prompt commands.
- 9.5 Load Autolisp programs into Auto CAD and execute them.

Unit 10. Plotting and Printing

General Outcome:

10.0 The students should be able to output drawings to both plotters and printers.

Specific Learning Outcomes:

Upon successful completion of this unit, the students should be able to:

- 10.1 Understand all plot command options - paper sizes, plot scale, removing hidden lines (etc.)
- 10.2 Understand all PRplot command options.