



AutoCAD® Self-paced Learning Modules

AutoCAD 2D

Content Module

Contents and Learning Outcomes

Module Introduction 1 - Using the AutoCAD Modules

Module Introduction 2 - Configuring the AutoCAD Software

Module 1 - AutoCAD's User Interface

1. Describe and configure AutoCAD's Interface including the Graphic window, graphic cursor, status bar, model and layout tabs, command line window, pull-down and toolbar menus, use of the mouse and the Text window.

Module 2 - Getting Started

2. Describe a drawing, a drawing template, drawing names and drawing file extensions.
3. Apply the commands NEW, QSAVE, OPEN, SAVEAS and CLOSE to start a new drawing, name and save the current drawing into a specified folder, open a filed drawing, save the current drawing with a different name and close a drawing.
4. Describe an AutoCAD command including option prompts and defaults.
5. Describe how to execute, repeat and abort commands.

Module 3 - Checking the Accuracy of Drawings

6. Describe how lab exercise drawings in the AutoCAD 2D Modules are checked for accuracy.

Module 4 - Drawing Lines Using Cartesian Coordinates

7. Describe the Cartesian Coordinate System using absolute and relative coordinates.
8. Apply the LINE command to draw lines using the Cartesian Coordinate System with both absolute and relative coordinates.

Module 5 - Layers

9. Describe AutoCAD's layering system and apply the LAYER command to create, toggle on/off, thaw/freeze, lock/unlock, select color and set the current layer for the active drawing.

Module 6 - Competency Test No. 1

10. Within a one hour time limit, complete a written exam and a lab exercise without the aid of a key.

Module 7 - Circles and Arcs

11. Describe a circle and an arc and their characteristics.
12. Apply the CIRCLE and ARC commands to draw circles and arcs.

Module 8 - Object Snap

13. Describe object snap, AutoSnap, manual object snap modes, and the object snap modes for a line, circle, and an arc.
14. Apply the OSNAP command to set the object snap modes for AutoSnap, enable and disable object snap and use object snap to complete drawings.

Module 9 - Controlling the Drawing

15. Describe drawing limits, drawing extents, drawing scale and drawing units.
16. Apply the commands ZOOM, PAN, REGEN, and VIEWRES to control the drawing.

Module 10 - Drawing Lines Using Polar Coordinates

17. Describe the geometry of an angle.
18. Describe the Polar Coordinate System.
19. Use the LINE command to draw lines using the Polar Coordinate System.

Module 11 - Competency Test No. 2

20. Within a one hour time limit, complete a written exam and a lab exercise without the aid of a key.

Module 12 - Fillets

21. Describe tangency and fillets.
22. Apply the FILLET command to construct tangent arcs.
23. Apply the LINE command using the tangent object snap mode to draw lines tangent to arcs and circles.

Module 13 - Object Properties

24. Describe object properties, linetype, linetype scale, and how to select objects using a pick, a window, and a crossing window.
25. Describe how to assign and edit linetypes ByLayer and set the linetype scale.
26. Apply the PROPERTIES and LTSCALE commands to display and edit properties of drawing objects and set the linetype scale of objects.

Module 14 - Trimming and Extending

27. Apply the TRIM and EXTEND commands to shorten and lengthen objects at selected cutting edges.

Module 15 - Offsetting Objects

28. Apply the OFFSET command to insert objects parallel to existing objects.
29. Apply the ID command to establish temporary reference locations.

Module 16 - Competency Test No. 3

30. Within a 90 minute time limit, complete a written exam and a lab exercise without the aid of a key.

Module 17 - Inquiry and Measurement

31. Apply the UNITS, DIST and PROPERTIES commands to set the display units, make inquiries about drawing objects and measure distances.
32. Apply the ORTHO, POINT, DIVIDE, and MEASURE commands.

Module 18 - Layout - Part 1

33. Describe the working spaces, model and paper, and how to use them in an AutoCAD drawing.
34. Describe viewports and explain how to create, edit, scale and lock them.
35. Describe and apply the command MVIEW.

Module 19 - Text - Part 1

36. Describe single line text, text style and text justification.
37. Apply the STYLE, DTEXT, and DDEDIT commands to format, insert and edit text.

Module 20 - Moving and Copying

38. Apply the MOVE, COPY, COPYCLIP, PASTECLIP, and COPYBASE commands to move and copy objects in the current drawing plus copy objects from one drawing to another.
39. Fill out titleblocks in paper space using the AutoCAD 2D Modules Standards.

Module 21 - Competency Test No. 4

40. Within a two hour time limit, complete a written exam and a lab exercise without the aid of a key

Module 22 - Mirroring and Rotating

41. Apply the MIRROR and the ROTATE commands to mirror and rotate objects.
42. Apply the MIRRTEXT system variable.

Module 23 - Arraying

43. Apply the ARRAY command to array objects in polar or rectangular patterns.

Module 24 - Scaling and Stretching

44. Apply the STRETCH and SCALE commands to change the size and shape of existing objects by stretching or scaling them.

Module 25 - Text - Part 2

45. Describe a mtext object and explain how to create, edit and explode mtext.
46. Apply the MTEXT, QTEXT and SPELL commands.
47. Describe and compare shape and true type text fonts and their characteristics.
48. Describe special text characters and the use of control codes.

Module 26 - Competency Test No.5

49. Within a three hour time limit, complete a written exam and a lab exercise without the aid of a key.

Module 27 - Multiview Drawings

50. Describe a multiview drawing, the glass box principle, the three standard views, object lines and hidden lines.
51. From a 3D pictorial of an object, draw a multiview drawing using the three standard views. .

Module 28 - Grids and Snap

52. Describe grids and snap and how they are used in a drawing.
53. Apply the commands GRID and SNAP.

Module 29 - Polylines

54. Describe a polyline drawing object.
55. Explain how to create, close and edit a polyline.
56. Apply the PLINE, PEDIT, DONUT, FILL, EXPLODE and BOUNDARY commands.

Module 30 - Regular Polygons

57. Describe a regular polygon and the methods used to construct them.
58. Apply the POLYGON, RECTANGLE, ELLIPSE and AREA commands.

Module 31 - Competency Test No.6

59. Within a two hour time limit, complete a written exam and the lab exercises without the aid of a key.

Module 32 - Hatching

60. Explain sectional views, sections, and hatching in sectional views.

61. Apply the BHATCH and HATCHEDIT commands to insert and edit crosshatching patterns.

Module 33 - Blocks

62. Describe a block and explain how blocks are stored and inserted in a drawing file.

63. Describe how blocks work with layers.

64. Apply the BLOCK and INSERT commands.

Module 34 - Drawing Utilities

65. Explain drawing and file maintenance to help manage and control AutoCAD drawing files.

66. Apply the TIME, PURGE and RENAME commands.

Module 35 - Reference Files

67. Describe reference files and explain how they are used in an AutoCAD drawing.

68. Apply the XREF command.

Module 36 - Competency Test No. 7

69. Within a three hour time limit, complete a written exam and the lab exercise without the aid of a key.

Module 37 - Dimensioning - Part 1

70. Describe the 11 basic dimensioning terms.

71. Describe the properties of associative and exploded dimensions.

72. Apply the DIMASSOC and DIMSTYLE commands to control and modify the appearance of dimensions.

73. Apply the commands BREAK and DIMCENTER to draw center lines.

Module 38 - Dimensioning - Part 2

74. Describe the six basic dimensioning types.

75. Apply the DIMLINEAR, DIMALIGNED, DIMANGULAR, DIMDIAMETER, DIMRADIUS and QLEADER commands to dimension a drawing.

Module 39 - DesignCenter

76. Describe how the DesignCenter can be used to increase drawing productivity.

77. Apply the command ADCENTER.

Module 40 - Layouts - Part 2

78. Describe lineweight and why it must be used in a plotted drawing.

79. Describe and apply the object and color methods of assigning lineweight in a drawing.

Module 41 - Competency Test No. 8

80. Within a two hour time limit, complete a written exam and the lab exercise without the aid of a key.