AC5093 - Compelling Strategies for Passing the AutoCAD® 2015 Professional Certification Exam

J.C. Malitzke - Digital JC CAD

AC5093  Accept the challenge! Are you ready? Explore the workflows and methodologies for passing the AutoCAD 2015 Professional Certification Exam. This class offers tips and techniques to new and veteran Autodesk® AutoCAD® software users, giving them a chance to explore the time-saving strategies for passing the exam. We work through the exam objectives, highlighting time-saving tips and techniques for methods of study and preparation. You will be able to develop a strategy for working through each question and understand what to study and what not to study. We look at resources that are available to you as study guides. If you are up for a challenge, need to enhance your resume, or want to achieve your personal or professional goals, attend this class and get ready to be surprised.

At the end of this class, you will be able to:
- Develop navigation workflow strategies for passing the AutoCAD 2015 Professional Exam
- Develop time-saving study and preparation techniques based on the exam objectives
- Develop a strategy for working through each question
- Prepare a strategy for what to study and what not to study

About the Speaker
J.C. Malitzke is President of Digital JC CAD Services Inc. and is the former department chair of Computer Integrated Technologies and a faculty member at Moraine Valley Community College in the greater Chicago area. He managed and taught for the college’s Autodesk Authorized Training Center. He has been using and teaching Autodesk® products for 29 years. J.C. is co-author to Good-Heart Wilcox Publisher for AutoCAD® and Its Applications Advanced. He is the recipient of several educator awards, including, Professor of the Year, and the Illinois Trustee Association’s Faculty Member of the Year, and a top presenter award winner at Autodesk University. J.C. is a Certified Autodesk Instructor for AutoCAD® and Autodesk® Inventor and is an Autodesk Certification Evaluator. This is his 20th year presenting at Autodesk University. He holds a BS degree in education and a MS in industrial technology from Illinois State University. Contact J.C. at: jc.malitzke@digitaljccad.com
Compelling Strategies for Passing the AutoCAD® 2015 Professional Certification Exam

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Learning Objectives
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Goal

Topics
1. Navigating the Exam
2. The Road Map objectives
3. Set your tools in AutoCAD 2015
4. Review…“Practice does not make perfect, perfect practice makes perfect.” (Vince Lombardi)
5. Know the Inquiry commands
6. What if you do not pass the exam
The AutoCAD 2015 Professional Exam

The AutoCAD 2015 User Exam

The AutoCAD 2015 Certified Professional exam is aimed at assessing professional users’ knowledge of the tools, features, and common tasks of AutoCAD 2015.

The Autodesk Certified Professional exam is comprised of 35 questions, of which the majority requires you to use AutoCAD to create or modify a data file, and then type your answer into an input box. Other question types include multiple choice, matching, and point-and-click. The exam has a 2-hour time limit (in some countries, the time limit may be extended). Find an Autodesk Certification Center at autodesk.starttest.com. (Source: AutoCAD 2015 Autodesk Exam Preparation Roadmap, Autodesk Inc. 2015)

The AutoCAD Certified User exam consists of 30 questions combining multiple choice, matching, point-and-click (hot-spot), and performance-based question types to ensure students understand and can effectively use AutoCAD. The exam has a 50-minute time limit. For more information, visit www.certiport.com/autodesk. (Source: AutoCAD 2015 Autodesk Exam Preparation Roadmap, Autodesk Inc. 2015)

Note: this paper concentrates on the AutoCAD 2015 Certified Professional objectives. However, study and preparation techniques used for the AutoCAD 2015 Certified Professional exam are applicable to the AutoCAD Certified User exam.

NOTE: As mentioned above, The AutoCAD 2015 Professional Certification Exam is a combination of knowledge based questions and skill based questions. In other words, questions consisting of multiple-choice and performance-based items (hands-on, you are required to perform a task in AutoCAD) similar to the previous AutoCAD 2014 Professional exam. The answers to the questions may be text based or require numerical data input.

If you have taken the User and/or Professional exams in the past, you have an advantage. The exams are similar!
Where should I start? (Develop a strategy)

1. Navigating the AutoCAD 2015 Certified Professional Exam

   - Understand the different types of questions on the exam.
     a. Skill based question. (Hands-on)
     b. Knowledge based question. MC, Drag and Drop, and Point Click.
   
   - Read the entire question. Not just part of the question. Slowly!
   
   - Look at each question to identify key words that are familiar to you and are based on AutoCAD workflow techniques.
   
   - Read all of the possible answers before you make your determination on the correct answer.
   
   - Look for absolutes: all, none, always, never, must, only. Usually false. often, seldom, may, usually, generally. Usually true.
   
   - You may not need to do all the tasks.
   
   - Look for common errors as distractors.
   
   - Positive phrasing vs negative phrasing in question. “NOT”, “VALID,” “INVALID”
   
   - Hands-on: Look at the questions stem: “See what it is you are going to do and then look for the tools needed to solve the question.
   
   - MC: If the stem question provides enough information, think of what the answer could be before you look at the answers.
   
   - ALT-TAB. If you are using a single screen to take the exam, you will need to practice copying and pasting the answer from inside of AutoCAD to the test application window answer box. Practice toggling back and forth between two applications and copying and pasting data. ALWAYS double check your answer after you have copied it from inside of AutoCAD to the test application window answer box. I have heard of many cases where the previous answer that is on the clipboard gets pasted into the next questions answer box and the wrong answer is recorded!
• AGAIN……Read each question thoroughly
  o Read the whole question. If the question is a knowledge based question, look at the answers. If you know the answer, select it. If don’t know the question, skip it and come back to it later. Do not spend a lot of time trying to figure out what the answer is until you have completed the questions you do know!… Remember, you can always come back to a question you do not know or are unsure about. But once you have answered the question that you are sure about, do not change the answer. We know that usually the first answer is the correct answer.

• Only draw what is needed.
  o For the hands-on skill portion of the exam only draw what is asked in the order it is asked. Simply put, follow the directions to the letter!

• Saveas (maybe). You really do not need to save anything. But if you want to save the drawing that you have been working on, Saveas the drawing under a different name.

• Feel confident going into the exam. Relax when taking the exam. Do not rush through the exam. Use all the time that is allowed. Review each question as needed.

**Time Element**

• At the end of the exam you will be able to review ALL the questions.

• Do not go back to questions that you answered that you know are correct. Most people that change an answer with get the question wrong.

• Go back to the Flagged item. The ones you marked.

• Go back to the incomplete items.

• Answer ALL the questions.

• Leave yourself time at the end of the exam to re-read both the questions and your answers.

• Select END
2. The Road Map Objectives

- Go to: www.autodesk.com/certification and review the website information about the exams.

- Start by downloading the AutoCAD 2015 Autodesk Certification Exam Preparation Roadmap (pdf) from:

- Review the AutoCAD 2015 Autodesk Certification Exam Preparation Roadmap (pdf).

Review the objectives listed below to get a better understanding of what to study and what NOT to study. The objectives for the exam are the key! This is your strategic roadmap! (Source: AutoCAD 2015 Autodesk Exam Preparation Roadmap, Autodesk Inc. 2015)

- Study for the knowledge based exam questions first. Ask yourself before you start your review, “Do I know everything about all the commands referenced in the exam objectives”? ............ I would bet you do not!
• Use the Autodesk official certification guides to study from. The official guides are produced by Wiley Sybex and by Ascent. (See below). OR use any AutoCAD textbook or training manual to study from. **Remember, to only study the commands and features associated with the exam objectives.**

  **Autodesk Certification official prep materials:**


• There are many online video tutorials on YouTube or from vendors that produce AutoCAD training videos. Again, only search for videos at relate to the exams objectives!

• **Use the AutoCAD Help menu.** This is a great place to find out what the command is all about and about each subcommand. Work on studying the little known hardly used subcommands or command oddities. Remember the old saying, “we use 20% of the commands 80% of the time”. Well, you need to know more than 20%!

The examples below is taken from the **AutoCAD Help** menu

(Source: Autodesk AutoCAD 2015 HELP menu, Autodesk Inc. 2015)

I have highlighted in BLUE the AutoCAD HELP results.

**Objective: Blend between objects and Splines**

When do you join an object and when can you blend objects? Do you know the difference?

**Creates a spline in the gap between two selected lines or curves.**

**Select each object near an endpoint. The shape of the resulting spline depends on the specified continuity. The lengths of the selected objects remain unchanged.**
Valid objects include lines, arcs, elliptical arcs, helixes, open polylinies, and open splines. The following prompts are displayed.

**Select First Object or Continuity**

Selects a line or open curve near the end where the spline should start.

**Second Object**

Selects another line or open curve near the end where the spline should end.

**Continuity**

Specify one of two types of blends.

**Tangent**

Creates a degree 3 spline with tangency (G1) continuity to the selected objects at their endpoints.

**Smooth**

Creates a degree 5 spline with curvature (G2) continuity to the selected objects at their endpoints.

If you use the Smooth option, do not switch the display from control vertices to fit points. This action changes the spline to degree 3, which will change shape of the spline.
OBJECDIVE: Use Grip Editing

About Editing with Grips

You can reshape, move, or manipulate objects in other ways using different types of grips and grip modes.

Objects with Multi-Functional Grips

The following objects have multi-functional grips that offer object-specific and, in some cases, grip-specific options:

- **2D objects**: Lines, polylines, arcs, elliptical arcs, splines, and hatch objects.
- **Annotation objects**: Dimension objects and multileaders.
- **3D solids**: 3D faces, edges, and vertices.
Important Notes

- Grips are not displayed on objects that are on locked layers.
- When you select multiple objects that share coincident grips, you can edit these objects using grip modes; however, any object- or grip-specific options are not available.

- There are two different Grip methods of editing objects. Grip modes which allow you to edit selected objects by stretching, moving, rotating, scaling, and mirroring.
- Multi-function Grips: Edit objects that offer object specific editing options. In other words, there are objects that can be edited with Grips that are only specific to the object selected. Example: A polyline has object specific multi-function grips…

- Whereas a linear dimension had different object specific multi-function grips.

Objective: Reference external drawing and images

About Attaching and Detaching Referenced Drawings (Xrefs)

You can insert any drawing file as an external reference or xref in the current drawing.

You can attach an entire drawing file to the current drawing as a referenced drawing (xref). With xrefs, changes made in the referenced drawing are reflected in the current drawing. Attached xrefs are linked to, but not actually inserted in, another drawing. Any changes to a referenced drawing are displayed in the current drawing when it is opened or reloaded. Therefore, with xrefs you can build drawings without significantly increasing the drawing file size.

By using referenced drawings, you can
- Coordinate your work with the work of others by referencing other drawings in your drawing to keep up with the changes being made by other designers. You can also assemble a master drawing from component drawings that may undergo changes as a project develops.
• Ensure that the most recent version of the referenced drawing is displayed. When you open your drawing, each referenced drawing is automatically reloaded, so it reflects the latest state of the referenced drawing file.

• Keep the names of layers, dimensioning styles, text styles, and other named elements in your drawing separate from those in referenced drawings.

• Merge (bind) attached referenced drawings permanently with your current drawing when the project is complete and ready to be archived.

**Note:** Like a block reference, an xref appears in the current drawing as a single object. However, you cannot explode an xref without binding it first.

A drawing file can be attached as an xref to multiple drawings at the same time. Conversely, multiple drawings can be attached as referenced drawings to a single drawing.

**Tools for Attaching Xrefs**

You can use several methods to attach an xref:

• Click View tab ➤ Palettes panel ➤ External References Palette.

• Click Tools menu ➤ Palettes ➤ Reference Manager.

• At the Command prompt, enter EXTERNALREFERENCES.

• At the Command prompt, enter XATTACH.

You can also use DesignCenter™ to attach xrefs to a drawing. Use DesignCenter for simple attachments, previewing drawing references and their descriptions, and quick placement by dragging.

You can attach an xref by dragging it from DesignCenter or by clicking Attach as Xref on the shortcut menu.

The saved path used to locate the xref can be a relative (partially specified) path, the full path, or no path.

If an xref contains any variable block attributes, they are ignored.

**Note:** When using the External References palette, it is recommended that you turn on the Auto-hide feature or anchor the palette. The palette will then hide automatically when you specify the insertion point of the external reference.

**What you study is everything related to the command referenced in the exam objective.**

• Repeat the above procedure for ALL the AutoCAD commands and/or features that are referenced in the exams objectives.
  o Open, grid, snap, stretch, offset fillet, trim, extend, break, join, text, mtext text styles, annotative property, multileaders, grips, blend, hide and isolate objects, pline, pedit, annotative styles, using properties, layer, hatch and hatch edit, xref, using grips, copy, move, mirror, rotate, selection sets, arrays, viewports, layouts, plotting page setup and blocks, etc.
In review, study from these resources:

a. The AutoCAD Help menu.
b. The Autodesk Certification official prep materials.
c. From other training guides or textbooks.
d. On-line videos.
e. Ask a friend to quiz you!

3. Set Your Tools

- Set your Tools inside of AutoCAD for the hands-on study preparation. Do this when you get to the testing center 15 minutes before you start the exam if possible.

A. Set: Polar tracking to 90 degree

B. Set: Running object snap to: Endpoint, Midpoint, Center, Intersection and Insertion. Turn on Object Snap Tracking.
C. From the View tab, right click in the gray area of the ribbon and turn on the Views panel. You will be setting names views.

In this example we have three names views to choose. Understand how to navigate through the various named views.

You can also TYPE, View, to show the View Manager dialog box.

4. Review

- Practice using each command referenced in the exam objectives after you has studied each command as outlined above. This gets you ready for the hands-on portion of the exam. Do what you do every day when using AutoCAD by trying different scenarios and permutation methods for using these commands. Then, try using each command and sub commands based on what you have studied above. Develop an understanding of what you can do and what you cannot do using each command.

OBJECTIVE: Use Rotate and Scale

Example: Rotate In the example below we need to rotate the circle from its current position at 24 degrees to its new position at 128 degrees.

How do you rotate the circle? Where is the base point? Do you use the subcommands Copy and/or Reference? Do you rotate the circle 128 degree or 104 degrees?
In the second scenario, you need to create a copy the circle and rotate it to new position at 128 degrees. But we do not know the current angle. How would you do this? Do you use the **Copy** subcommand? Do you use the **Reference** subcommand? And at what angle do you rotate to?

Since the rotate command has two subcommands, we need to understand the workflow of how each subcommand affects the rotation outcome. Practice each command in a similar fashion.

- Review the AU virtual videos I created for AU 2013 or 2014. I reviewed as many of the exam objectives hands-on as time permits in each video. See my You Tube channel at: http://www.youtube.com/user/digitaljccad
• Review the AU 2015 AutoCAD Certification video at:
  http://au.autodesk.com/plan/certifications/prep-classes

**OBJECTIVE: Create selection sets**

Can you name 12 methods to create selection sets?  
They are: Pick Box, Window, Crossing, Fence, Window Polygon, Crossing Polygon, Window Lasso, Crossing Lasso, Fence Lasso, Last, Previous and All.

**OBJECTIVE: Use Trim and Extend**

What is the fastest method to trim multiple objects?  TYPE, TR, [ENTER], [ENTER] and use a Fence Lasso.

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### 5. Know the Inquiry Commands

• Know the Inquiry commands. The MEASUREGEOM command options: **List, Distance, Area, Radius and Angle**. Also, know how to modify object properties using the **Properties palette**. Practice using all of the above before you take the exam.

  Example: What is the best method to find the area of an object?  The logical answer would be to use the AREA command. However, hatching a closed and bounded object is faster!  Hatch the object, select the hatch pattern and check the hatch properties.
Or you could use the AREA command.

Command: AREA

Specify first corner point or [Object/Add area/Subtract area] <Object>: a

Specify first corner point or [Object/Subtract area]: o

(ADD mode) Select objects:
Area = 1133.40, Perimeter = 244.26
Total area = 1133.40
Polyline's width ignored in area calculation.

(ADD mode) Select objects:
Area = 1133.40, Perimeter = 244.26
Total area = 1133.40
Polyline's width ignored in area calculation.

Specify first corner point or [Object/Subtract area]: s

Specify first corner point or [Object/Add area]: o

(SUBTRACT mode) Select objects:
Area = 45.19, Circumference = 23.83
Total area = 1088.22

(SUBTRACT mode) Select objects:
Area = 61.92, Circumference = 27.89
Total area = 1026.30
Example: What is the distance from the Center of circle A to the Intersection located at the point B.

- Use the LIST command for finding the property data about a selected object.

Example: Line

```
LINE    Layer: "SECTION"
Space: Model space

Handle = 5264

from point, X= 21.89  Y= -0.21  Z= 0.00

to point, X= 29.23  Y=  4.07  Z= 0.00

Length = 8.50,  Angle in XY Plane = 30

Delta X = 7.34,  Delta Y =  4.28,  Delta Z = 0.00
```
You can use LIST to display and then copy the properties of selected objects to a text file.

The text window displays the object type, object layer, and the $X,Y,Z$ position relative to the current user coordinate system (UCS) and whether the object is in model space or paper space.

LIST also reports the following information:

- Color, linetype, lineweight, and transparency information, if these properties are not set to BYLAYER.
- The thickness of an object, if it is nonzero.
- Elevation ($Z$ coordinate information).
- Extrusion direction (UCS coordinates), if the extrusion direction differs from the $Z$ axis (0,0,1) of the current UCS.
- Additional information related to the specific object type. For example, for dimensional constraint objects, LIST displays the constraint type (annotation or dynamic), reference type (yes or no), name, expression, and value

(Source: Autodesk AutoCAD 2015 HELP menu, Autodesk Inc. 2015)

6. What happens if I fail the exam?

- If you fail the exam, get the results printed out at the exam site. Do not get down on yourself! Immediately, start writing down all the possible things you remember about the exam. Type of question, (knowledge based or skill based), how was the questions were worded, draw pictures of what you saw, etc. Then go back to your computer and start to review again. The key is that you do not want to lose any possible advantage you have by already by taking the exam. Right after the exam you are the most dialed into the exam mentally. Review immediately after the exam!

**Good luck!**

Disclaimer: this paper is for educational purposed only. No AutoCAD Professional Certification Exams questions were used or discussed. This paper is designed to highlight compelling tips and techniques for methods of study and preparation. There are no guarantees that reading this paper or taking this class you will pass any of the AutoCAD Certification exams.