

# SOEM 024

# Computer Aided Design

E. Rozos

# Lesson key terms

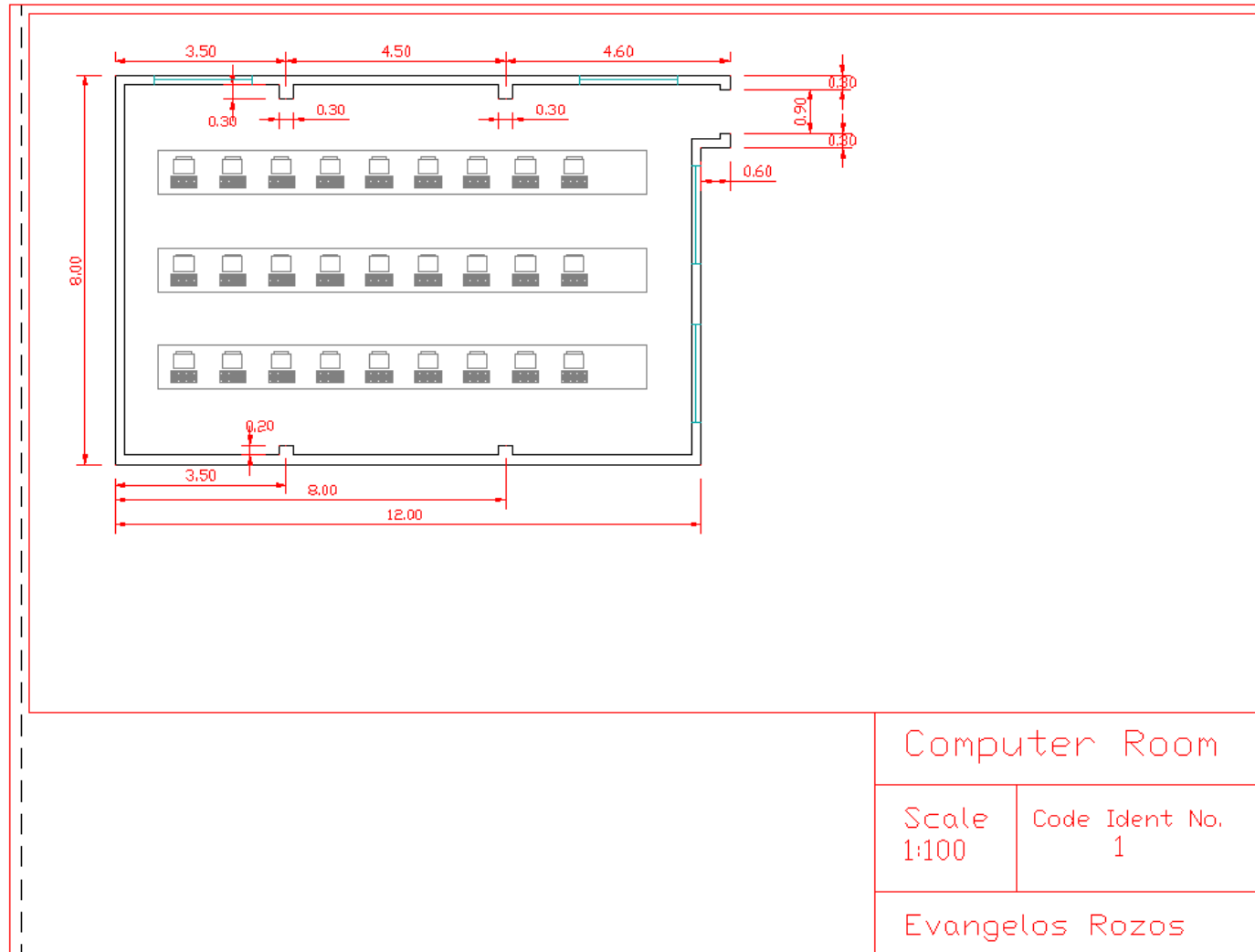
- Drawing units
- Layers
- Dimensioning-scale
- Blocks
- Attributes
- Hatching
- Layouts

# Autocad Units

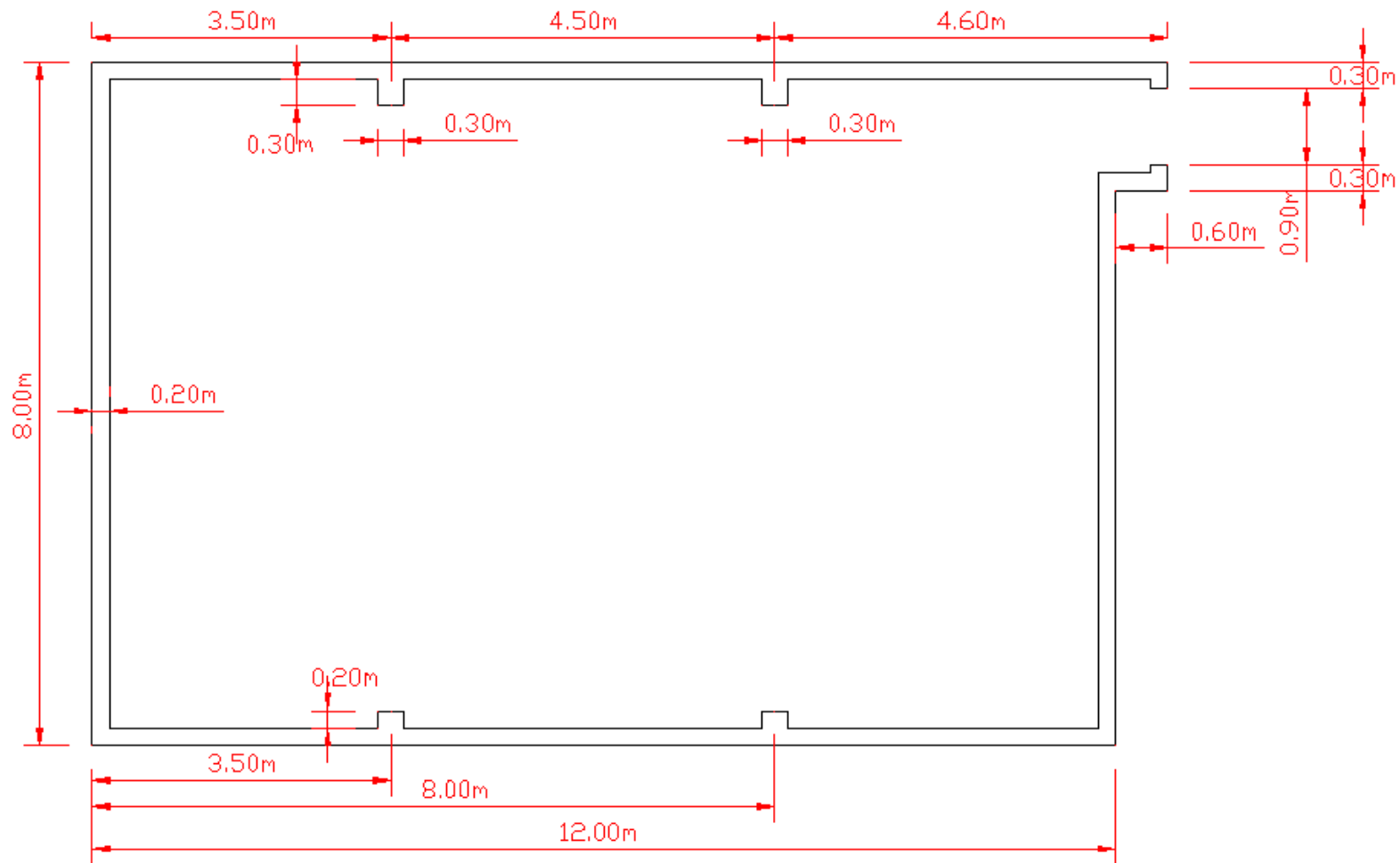
## Drawing units

- The units in drawing area are arbitrary.  
Usually we consider 1 drawing unit = 1 mm.
- The objects are drawn inside Autocad using 1:1 scale.
- The object is scaled to fit in the standard paper dimensions during the preparation of a layout.

# Final layout – Computer Room



# Layer 0 – the building



# Layer DIMs – dimensions

Insert a new layer for dimensions

- In the command prompt give “la” to start the dimensions dialog.
- Insert a new layers and name it “DIMS”
- Change the colour of the layer to red
- Make it “Current layer”

# Layer DIMs – dimensions

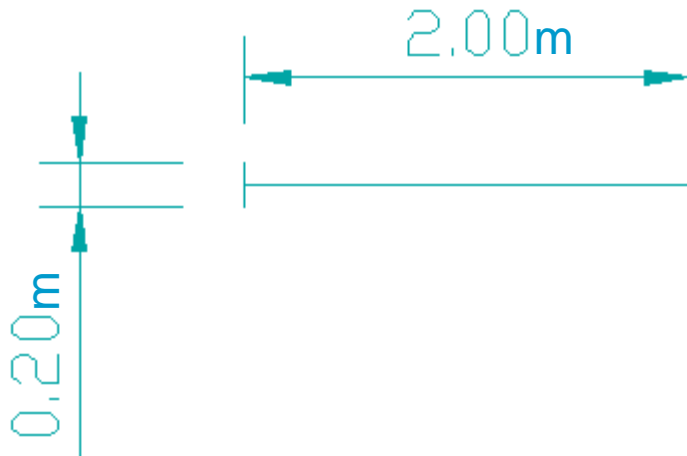
## Change the dimension settings

- Return to command prompt and type “dimscale”. Change the default value to 100.
- Type ddim to open “Dimension Style Manager” dialog box. Press “Modify” and go to “Primary Units” tab. Set “Precision” to 0.00, “Scale factor:” to 0.001, type “m” into “Suffix” textbox, uncheck “Zero suppression leading” checkbox.
- Reproduce the dimensions as shown in the previous figure.

# Layer WINDOWS – Blocks

## Definition of block

- Insert a new layer and name it “WINDOWS”, set the colour to be blue and make it “Current layer”.
- Draw somewhere a window (do not dimension it)





# Layer WINDOWS – Blocks

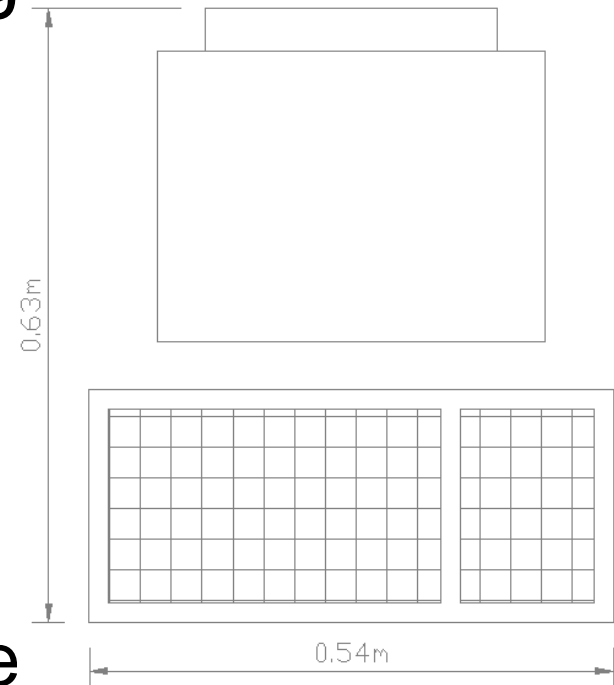
## Definition of block

- Type “b” to open the “Block Definition” dialog box.
- Name the new block “Window”.
- Pick a point to be the block base point.
- Specify the objects that consist the block and press OK.
- Insert the 4 windows (type insert) shown in the “Final layout”

# Layer COMPUTERS – Blocks

## Definition of block and hatching

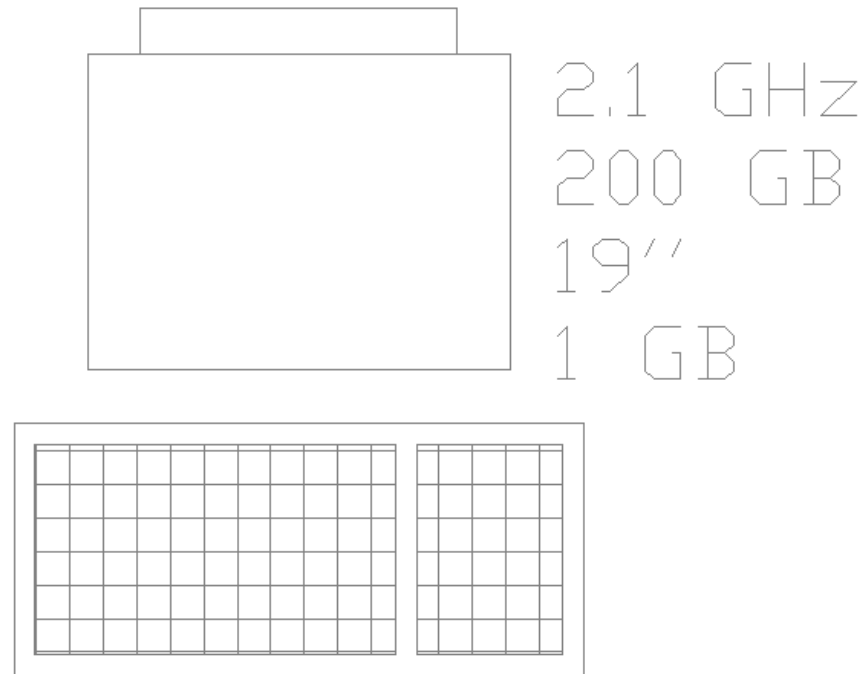
- Insert a new layer and name it “COMPUTERS”, set the colour to be grey and make it “Current layer”.
- Draw a computer.
- Use hatching to draw the keyboard. Type “hatch”, use the pattern “net” and select pattern scale 10.



# Layer COMPUTERS – Attributes

## Definition of attributes

- Insert 4 attributes (type att) close to computer with tags: CPU, HD, Monitor and RAM. Use font height 50.
- Define a new block named “Computer” that includes the attributes.



# Layer COMPUTERS – Attributes

Draw 3 tables and place computers on them

- Draw 3 tables 10×0.9 m with 1.1 m distance between them.
- Put onto the tables 9 computers (use array command with column offset 1000).
- Turn off the display of attributes (attdisp)

# Prepare for printing - Layout

The feature of layout provides a distinction between the procedures of representation and plotting. This means that:

- the objects are represented using their original dimensions in the “model space”.
- all plotting related actions (scaling, block title) are handled remotely in the “paper space”.
- many views of the represented object may be prepared without any additional modifications.

# Prepare for printing - Layout

Draw title block and set the viewport:

- Select “Layout1”, choose the “PDFCreator” as plotting device.
- Delete the automatically created viewport.
- Select “DIMS” to be the current layer and draw a title block.
- Create a new viewport (type mv).

# Prepare for printing - Layout

Define the viewport properties:

- Switch to “model space” (type ms) to set the view port properties.
- Type z and give 1/100xp that results in plotting with scale of 1:100.
- Pan the draw to place it properly inside the viewport.
- Switch back to “paper space” (type ps).