

**GEOM 3007 – Cartographic Theory and Design – Winter 2014-2015**  
**Department of Geography & Environmental Studies – Carleton University**

**CorelDraw or Inkscape Graphics Exercise – Due Friday, January 30, 2015**

This exercise will provide students with an opportunity to create various shapes, lines and use colours for objects typically found on maps. Also, formatting objects and creating, using, formatting and adding effects to text is critical to successful cartographic communication. Precision and accuracy is paramount and required, as you should be able to create all objects only from the text descriptions below. The exercise below has been designed for CorelDraw X3, but can be done using any reputable mainstream drawing software package.

1. Open your preferred vector drawing package – either CorelDraw, Inkscape or any other (GIMP, Adobe etc).
2. Set a page size of 8.5” W x 11” H
3. Use the Object Manager to put all objects on separate individual layers with appropriate layer names. Management of graphics objects is essential for subsequent editing operations, and is good practice.
4. Create a background frame or rectangular border that is 8” W x 10.5” H ie a neat line for the edge of the image (map). Make this line 1.0 mm thick.
5. Create an inner frame within the background frame that is 1/8” away from the outer background frame. Change the line style to a fine dotted line, 0.5mm thick.
6. To facilitate accurate measurements, set the page origin (0,0) to the top left corner of the inner frame. This is the origin position of all measurements, with all positional measurements being X,Y (horizontal, vertical)
7. Create a rectangle 2” W x 1” H whose top left corner is 1/2” away (vertically and horizontally) from the top left corner of the inner frame. Fill the rectangle with pure red colour, with a 2mm blue outline. Place the word ‘Rectangle 1’ in Times New Roman, size 18pt, yellow colour, exactly centred within the rectangle.
8. Create a rectangle 3” W x 1.5” H whose top left corner is 4” horizontally and -1/2” vertically away from the top left corner of the inner frame. Fill the rectangle with pure blue colour, and corner roundness of 30. Add an inner rectangle, centred within the blue rectangle, size 2.75” W x 1.25” H, with corner roundness of 30, and CMYK colour 100, 0, 100, 50. Place the word ‘Rectangle 2’ in Arial font, size 24pt, red colour, exactly centred within the rectangle.
9. Create a vertical legend of 5 circles, the top circle being 0.25” in diameter, centred at 1.5” horizontal, -2” vertical, with subsequent circles increasing in size by doubling their **area**. The space between the top of the top circle and the bottom of the bottom circle is 4”, and have the circles equally spaced from each other. Colour the circles with pure red. Place annotation values down the right side of the circles, left justified alignment, with values ranging from 30000 for the top circle, doubling for each subsequent circle, down to the appropriate value for the bottom circle. Use an 18pt, Arial font.

10. Create a 4 x 4 grid of  $\frac{1}{2}$ " squares, bottom left corner at position 5", -10". Colour the squares with the primary colours red, green, blue and yellow such that no two grid squares have two adjacent colours the same! Four colours are the minimum number of individual colours required such that no two adjacent polygons have the same colour.
11. Copy the grid in step 10, but flip it vertically and horizontally, then scale it vertically 50% and place it  $\frac{1}{4}$ " above and centred over the original grid squares.
12. Draw a circle 2" in diameter at centre location 6", -3.625". Place the text 'THE WORLD IS NOT ROUND', Times New Roman font, 16pt, 1/10" offset from the top outside of the circle that follows the curve of the circle. Place the text 'IT IS AN OBLATE SPHEROID' in Times New Roman font, 14pt, 1/10" offset from the bottom inside of the circle, upright reading left to right, in a legible colour after the Earth image is inserted. Do an image search on Google for 'EARTH', select a picture of the earth, size it to fit in the circle, and insert it into the circle as a PowerClip so it fits and is cropped perfectly inside the circle. Challenge: Can anyone figure out how to get a second line of text on the inside of the circle but the text reads from right to left ie upside down?
13. Draw a reverse, slightly 'S' shaped line starting at 2.75", -0.5" (between the top of the two upper rectangles) to 5", -6". Duplicate the line using a  $\frac{1}{4}$ " separation from the original line, and create and place the text 'THE FAST MEANDERING RIVER OF CARTOGRAPHIC TURBULENT FLOW', Arial font, 12pt, centred within the two lines and centred along their length. Use line thickness of 1mm and draw arrowheads on the bottom ends of these parallel lines.
14. Draw a regular hexagon, rotated so the bottom edge is horizontal, 2" wide from point to point at the vertical midpoint, and the bottom edge is 8" below the origin and centred on rectangle #1. Make the line thickness 1mm, colour Blue. Put a red inscribed circle within the hexagon, 0.5mm thickness, and use a dashed outline. Fill the circle with a pattern fill of ellipses, 0.4" W x 0.25" H, blue front and yellow back.
15. Make a text box 4" wide x 2" high, top left corner location 0.5", -8.125" and type in 'The quick brown fox jumped over the lazy dog' using Time New Roman font, 10pt, and fill the box with this text by copying the text enough times to fill the box. Draw a rectangle 1.5" W x 0.75" H, centred within the text box, corner roundness 50. Make the text wrap around this inner rectangle, and fill the rectangle with a radial fill from green to yellow.
16. Draw a pie chart, 1.5" in diameter, centre position 3.75", -7.0", using the 4 primary colours RGBY. Divide up the pie slices into pieces of: Blue 230 degrees, Green 70 degrees, Red 40 degrees and Yellow 20 degrees, which totals 360 degrees.
17. Draw 3 inscribed ellipses, all centred at location 6.5", -5.75", the first one being 2" W x 1.5" H, and the others 0.5" smaller on both axes than the previous. Make their outlines Red 3 mm, Blue 2mm and Green 1mm from largest to smallest.
18. Put your name, student number, and course name and number at the bottom of the sheet just above the inner frame, using an Arial font, sized appropriately.
19. Save the output as a PDF file.
20. Print the output on an 8.5" x 11" sheet colour print, upload the PDf file using the file submission service on cuLearn, and submit by the due date.