

Makeup Midterm Examination
Due: Friday, April 28, 4:00 pm

You may refer to any of your notes, text books, online resources, and lab materials that you wish to during the course of the exam. The emphasis of the examination is on your ability to apply the knowledge you have gained to the solution of the specific problems you are presented with. You may work on your own laptop computers or the computers provided in the lab. Please work separately.

- 1) Data acquisition and processing (10 pts)
 - a) Download each of the following datasets for use in the examination
 - i) New Mexico Congressional Districts:
http://www.archaeoworld.com/classes/osgit/exams/makeupmidterm/cd35_109.tar.gz
 - ii) Bernalillo County Census Tracts:
<http://www.archaeoworld.com/classes/osgit/exams/makeupmidterm/tgr1tr00.tar.gz>
 - iii) Voting Precincts:
http://www.archaeoworld.com/classes/osgit/exams/makeupmidterm/nmpcts_05.tar.gz
 - iv) Ortho Photo:
<http://www.archaeoworld.com/classes/osgit/exams/makeupmidterm/ortho.tif>
 - b) Decompress the each of the files **What command (if any) and any options, did you use to decompress the files?**

2) Fill in the following table with the information for each specified dataset (18 pts.)

	<i>Type of file</i>	<i>X-Y Coordinates of Lower Left Corner</i>	<i>Datum</i>
Congressional Districts			
Census tracts			
Voting Precincts			
Ortho Photo			

3) In preparation for creating a new GRASS Location based upon one of the datasets, provide the following values for the **Congressional District** dataset (8 pts)

- a) Type of projection (choose one)
___ x,y ___ Latitude-Longitude ___ UTM ___ Other (specify _____)
- b) Datum _____
- c) Spheroid _____
- d) Min X _____
- e) Min Y _____
- f) Max X _____
- g) Max Y _____

4) What are the UTM coordinates (Zone 13) that correspond with the following coordinate pairs from Question 3 (9 pts)?

Min X / Min Y _____ m E _____ m N
Max X/ Max Y _____ m E _____ m N

5) Create a new GRASS location based upon the bounding coordinates, coordinate system, and resolution of the **congressional distric** dataset. Fill in the following values based upon the results presented at the end of the location creation process (if you miss the values during the setup process, you can also get the information from the GRASS command prompt by typing 'g.region -p' at the GRASS command prompt) (15 pts).

projection: _____
zone: _____
north: _____
south: _____
east: _____
west: _____

e-w res: _____
n-s res: _____

total rows: _____
total cols: _____

How did you arrive at the resolution values that you selected for the new location?

6) Which of the four datasets downloaded in Question 1 may be directly imported into the GRASS location created in Question 5 (10 pts)? (check the appropriate datasets)

- Congressional Districts
- Census tracts
- Voting Precincts
- Ortho Photo

7) How would you import any dataset(s) that could not be directly imported? Why? (5 pts)

8) If you assume that all four datasets can be directly imported into the GRASS location created in Question 5.

a) What command(s) (full command syntax) would you enter to import the raster(s) (5 pts)?

b) What command(s)(full command syntax) would you enter to import the vector(s) (5 pts) (try v.in.ogr)?

9) Generate a graphic depiction of one of the vectors in an onscreen monitor. What command(s) (provide the complete, exact syntax) did you execute to generate the display? (5 pts)

10) Generate a PNG file showing the same data displayed in Question 9.

a) What commands did you execute to generate the file (5 pts)?

b) If you had added a raster to the map, how would you add a legend to the map (5 pts)?