**Image Analysis and Classification Techniques using ArcGIS 10**

**Prepared by Pari Ranade and Ayse Irmak**

**GIS in Water Resources**

**Fall 2010**

*Q1. Turn in the image with all three Transformation option. Label the image to show which transformation is used.*

*Q2 Turn in the image showing overlay of CALMIT landuse and rectified Google image (30% transparent). What land uses are present on the Northwest side of the I-80. Which waterbody is present on the North west side of the I-80? What is another indication of presence of water body (which land use)?*

*Q3 Turn in the picture of Lincoln Municipal Airport in February before and after enhancement using display tools*

*Q4. What is the prominent difference between July and Feb images of the Lincoln Municipal Airport with false color composite?*

*Q5. What is the prominent difference between July and Feb NDVI for Lancaster County? Zoom in near the airport area and compare your results with false color composite image of same area that you have explored earlier? Do you think NDVI values are affected by the clouds?*

*Q6. Turn in the false color composite image with cloud polygon overlain on that. (use thick contract boundaries for polygon with hollow symbology)*

*Q7. Turn in the output of Iso Cluster Unsupervised Classification with class symbology shown on the side. Comment on the comparison between three land use maps. Give the class numbers (from ISO\_Unsupervised layer) of the land use categories (from NASS or CALMIT) that you think are quite well mapped by the unsupervised classification. Which classes do you think are captured most accurately? Do you think clouds will have impact on the classification? If yes, how? Do you think clouds and cloud shadows are capture by the unsupervised classification? If yes, give the class numbers.*

*Q8. Turn in the supervised classification map with class names shown in the legend. Visually compare the map with CALMIT 2005 and NASS maps and comment on how accurately you have classified the maps.*

*Q9. Turn in the* maximum likelihood classification *map with class values shown in the legend. Visually compare the map with CALMIT 2005 and NASS maps and comment on similarity or differences in the map classes.Could you relate to some class values (from MLC\_Lancaster) to classnames (in Landuse\_2005)*

*Q10. Turn in the screenshot zoomed in one of your polygon for ‘urban vegetation’ class from signature file with map of class probability for urban vegetation class.*

*Q11. Also turn in the full extent map of ‘urban vegetation’ class probability and compare it with the CALMIT land use map. Comment how your ‘urban vegetation’ class is mapped compared to Landuse map of CALMIT (note CALMIT does not have this class, so see what corresponds in CALMIT map for your ‘urban vegetation’. What do you think are the possible errors in the mapping ‘urban vegetation’? What could be the reasons?*

*Q12. Turn in histogram of each land use map. Compare and comment on the histograms. This is sort of comparison for each land use classification we have performed.*