# Geographic Information Systems and Remote Sensing for Natural Resource Management
# FW3540

## Laboratory Exercise 8
## Setting Up a Geodatabase and Checking Topology

**Introduction**
This lab exercise will acquaint you with the setting up a geodatabase and spatial data editing. The geodatabase will consist of your land use/cover shapefile and the DLG roads shapefile. You will be finalizing your land use/cover map.

**Initializing the Geodatabase**
Start **ArcCatalog** and create a lab8(geodatabase) folder. Right click on the folder icon, choose **New\File Geodatabase**. Name the database **"Indiantown"**.

Click on the database icon, choose **New\Feature Dataset**. Name it "transportation". Import the projected coordinate from the roads shapefile as the geodatabase coordinate system. Choose **None** for the **vertical coordinate system**. Set the **XY Tolerance to .0001, the Z Tolerance .01 and accept the default for the M Tolerance**. Uncheck accept default resolution.

Right Click on the Feature Dataset icon and choose **New\Feature Class**. Import the updated roads shapefile (it should be located in your lab 6 folder).

Open the attribute table for the roads feature class and compare it to the attribute table of the roads shapefile. This is done easier in ArcMap than in ArcCatalog since ArcMap allows you to have more than one attribute table open at a time. How has the attribute table been modified?

_____

_____

Are there field(s) would you delete to eliminate redundant data? _____
Delete them.

Create a second feature dataset labeled landcover. Import your land use/cover shapefile as a feature class in this feature dataset, check the attributes and eliminate any redundant fields.

**Setting Topology**
If your land cover/use feature class is displayed in ArcMap, remove it. You cannot edit topology in ArcCatalog if the data is displayed in ArcMap. In ArcCatalog, right click on the **landcover feature dataset**. **Select New\Topology**. The topology wizard will open.

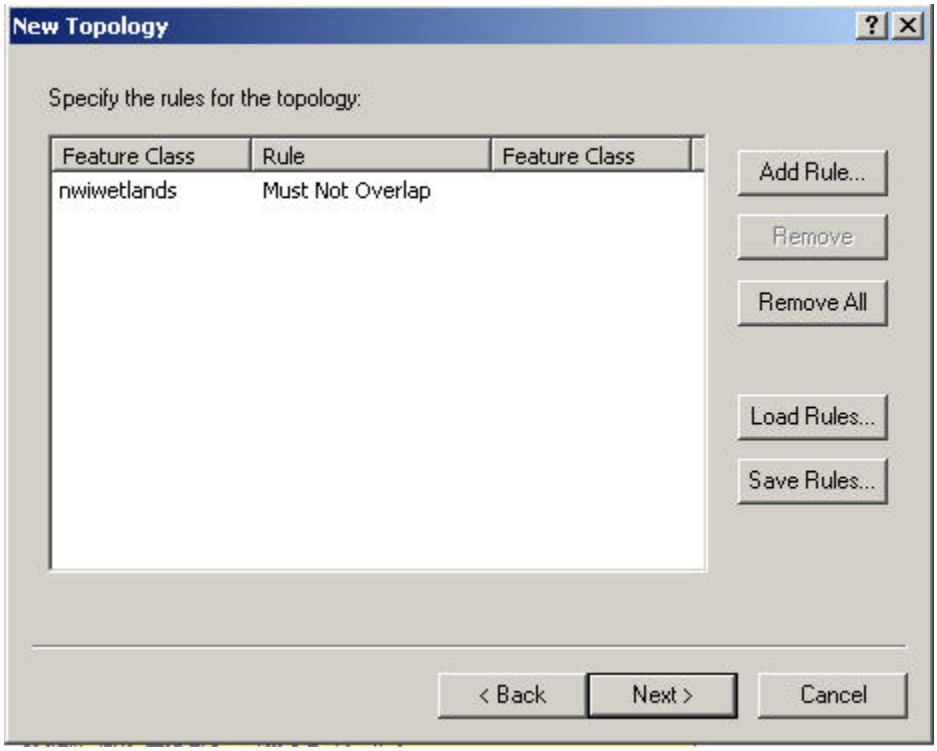
In the second window enter a **cluster tolerance of 1** (this indicates that nodes within a meter of each other will be merged).

**Note:** The cluster tolerance is not a limit on how far coordinates may move. It simply guarantees that, after validation, no 2 coordinates will be nearer than the specified distance without being

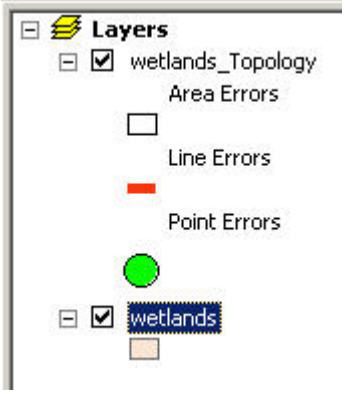
coincident.

In the next window, select your land use/cover feature class to be included in the topology. Enter **1 for the number of ranks** (note: the number of ranks cannot exceed the number of files in the feature dataset. If it does, ArcCatalog will hang-up). Give the land use/cover feature class a rank of 1.

The next window (shown below) is where you can add topology rules to assist you in editing the land use/cover feature class. Click **Add Rule**. **MUST NOT OVERLAP** is the topology applied to your feature class. Click **Next**. The topology will be generated and the validated. The validation process will correct any errors in your data that are included in the specified topology rule(s).




Open ArcMap and display the errors generated by the validate topology program. They are found in the landcover_Topology feature data class. See illustration below.



Click **Start Editing** and correct errors associated with the land use/cover feature class that were not included in the topology rule correction. You may want to refer back to the instructions for editing detailed in your lab handouts and flowcharts. Be sure to save your corrections frequently.

Once your errors are corrected, finalize the land use/cover map.

Due next week in lab- A cartographically correct, finalized land use/cover map. You do not have to construct a flowchart for this lab.