

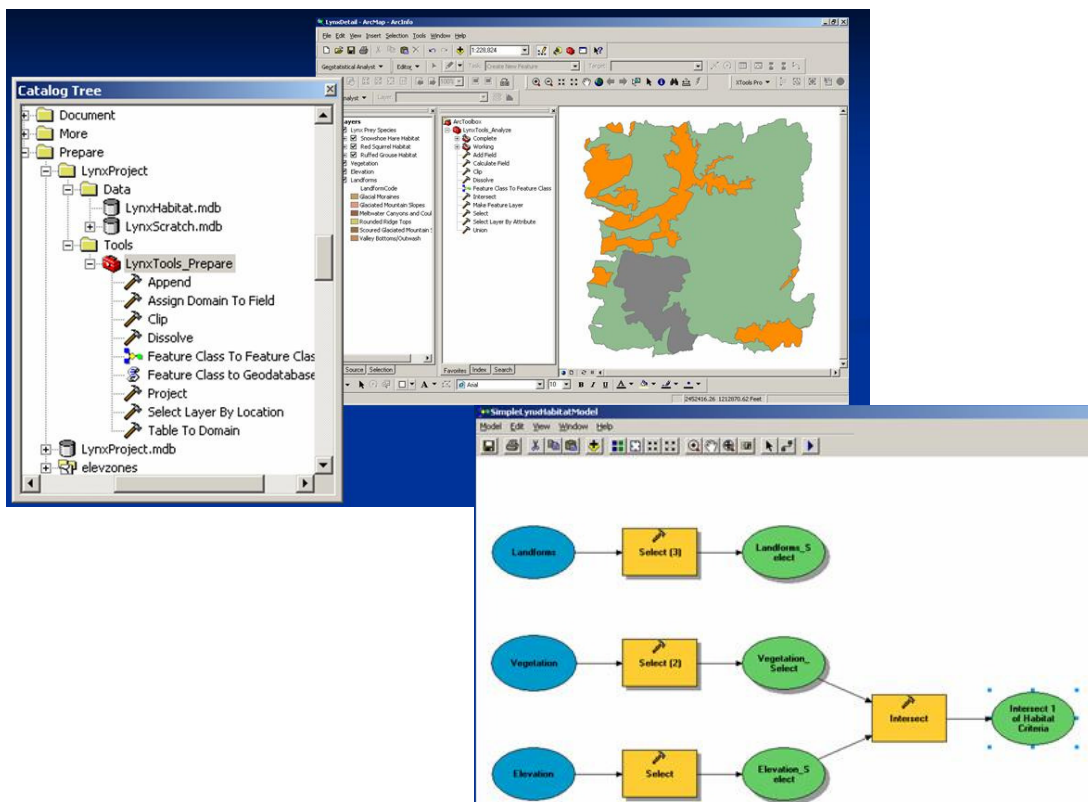
## Intermediate GIS

### Course Objectives

This is an intermediate course on theories and application of GIS techniques for spatial analysis. Each student who successfully completes this course will have developed working knowledge and skills necessary to process GIS data and conduct simple spatial analysis. Students will be introduced to the concept of and will have hands-on experience with preparing data (including GPS) for GIS analysis, suitability analysis and damage assessment methodologies.

### TOPICS COVERED

- Essentials of Spatial Analysis
- Essentials of GPS
- Essentials of Digitizing and Editing of Vector Lines, Polygons
- Essentials of Interpolation
- Essentials of Remote Sensing Data Integration in a GIS
- Essentials of Vector Overlaying Operations (clipping, merging, dissolving, buffering) with Epidemiology Application
- Essentials of Raster Analysis
- Topology
- Map Algebra
- Neighborhood Analysis
- Edge Effect Analysis
- Report Preparation (zonal statistics, neighborhood statistics and cross tabulation)
- Suitability Analysis (Habitat and Location for Business)



The image displays a screenshot of the ArcMap software interface. On the left, the Catalog Tree shows a project named 'LynxProject' with subfolders for 'Data' (containing 'LynxHabitat.mdb' and 'LynxScratch.mdb') and 'Tools' (containing 'LynxTools\_Prepate' with various tool icons like Append, Assign Domain To Field, Clip, Dissolve, etc.). The main map window shows a spatial analysis of a region with colored overlays. Below the map, a flowchart titled 'Simplest\_lynxHabitat.mxd' illustrates the workflow: three input layers (Landform, Vegetation, and Elevation) are each processed through a 'Select' tool to produce intermediate layers (Landform\_Select, Vegetation\_Select, and Elevation\_Select). These three intermediate layers are then combined in an 'Intersect' tool to produce the final output, 'Intersect 1 of Habitat Criteria'.