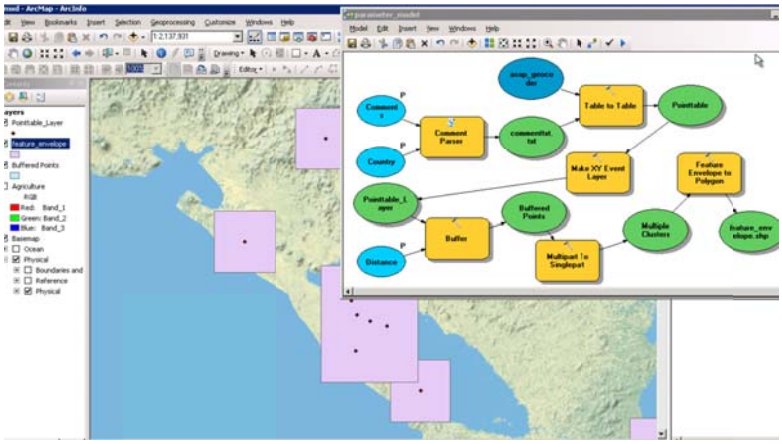
Course Announcement

Spatial Modeling and Visualization

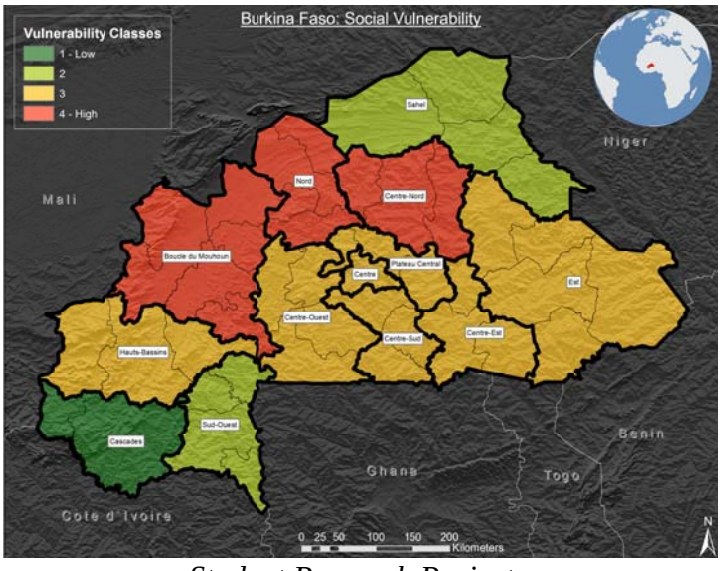
Fall Quarter 2012
Course# 4002-748-70
Time/Location: MW 4:00-5:50pm, Location: 70-1530
Credits: 4

Description

This geographic analysis course explores the spatial and temporal modeling and visualization of natural and engineered systems and their interactions in the context of disaster management. Course topics include characterization of spatial and networked data from remote sensing platforms and sensor networks, three- and four-dimensional spatial analysis, network analysis, and approaches to predictive modeling and uncertainty analysis. Students will examine use of models and spatial data for decision support as they apply within a GIS. Students will collaborate on an in-depth, interdisciplinary, group project that will explore use of geographic analysis in real environmental or man-made disasters. Students should be comfortable working in PC-based computing environments. **Prerequisites – Introductory course work in Geographic Information Systems (GIS) or permission of the Instructor.**



Student Research Project -
Model construction using ESRI GIS tools



Student Research Project -
Visual representation of model outcomes

Goals

This course prepares students to understand, analyze, manipulate, and visualize the various types of geographic data that are so critical for emergency responders and decision makers to effectively plan for and respond to disasters. The basic analysis of spatial data that is enabled by use of Geographic Information Systems (GIS) will be extended by exposing students to a variety of tools for modeling processes in the environment. Linking of these process models to GIS will demonstrate how adding a predictive capacity enhances the power of spatial analysis. The course will introduce students to methods for determining uncertainty in spatial data and modeling outputs needed for the decision-making process. Finally, students will explore different methods for visualization of spatial data and modeling results with an eye to communicate critical information contained in complex data to decision makers.

For more information contact:
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