GEOG 591 Urban GIS  
**Instructor:** DelVecchia  
**Email:** liangj@email.unc.edu  
**Time:** MWF 2:30-3:20 PM  
**Location:** CH 322 

**Prerequisite:** GEO370, or similar course, or experiences with GIS software. Students will use ArcGIS 10.x to finish most labs. 

**Course Descriptions:**  
GEOG591 is an *intermediate GIS course*. Assume students already have 1+ year experiences with GIS applications, such as ArcGIS, Grass (open source), or other GIS software.

This course introduces the theories and applications of Geographic Information Systems (GIS) and teaches hands-on skills using GIS technology, with emphasis on problems in urban/economic geography. Major topics will cover topological data structure, data collection, spatial analysis, and various urban GIS applications. Another important goal of the course is to expose students to various approaches of integrating spatial models with GIS. 

Major urban/economic theories/models covered in this course include: Urban mapping, rank mobility index, urban expansion, population density, central place theory, markov chains, gravity model, etc.

GIS concepts/skills covered in this course: spatial data queries, mapping, geo-referencing, buffering, relational database operations, spatial statistical tools, geo-coding, address matching, network analysis, etc.