Certificate in Geographic Information Systems
Course Descriptions

GEOG 385, GIS Primer (3cr)
Intro to basic concepts and applications of geographic information systems (GIS), lab exercises on PC-based GIS packages. Two lectures and 2 hours of lab a week. Prereq: Basic knowledge of PC-based operating system.

GEOG 390 (formerly 470), Geographic Visualization (4cr)
Map projections, map generalization, cartographic design, map symbology, and typography; statistical, isarithmic and multivariate mapping, static versus dynamic mapping; interactive and internet mapping; cartographic animation; 2 hrs of lab/wk. Prereq: Geog 385 and Stat 251.

GEOG 407/507, Spatial Analysis & Modeling (2cr)
Spatial sampling procedures. Measures of central tendency, weighted mean, dispersion and anisotropy. Correlation and auto-correlation. Regression Analysis in a geographic context. Analysis and identification of spatial patterns, especially applied to car accidents and 911 calls concentration (crime mapping) – Kernel density functions. Clustering and hot spot detection techniques. Health accessibility and modeling of change. Interpolation. Extensive use of ArcGIS. Prereqs: Geog 385, Geog 390 (formerly 470), Math 143, Math 160, Stat 251. All of the above prerequisites can be taken concurrently with the exception of Geog 385. The course is required for all graduate students.

GEOG 424/524, Hydrologic Application of GIS & Remote Sensing (3 cr)
Concepts of area-based hydrologic modeling and assessment and the various types of spatially-distributed information commonly used in these activities, such as topographic data, vegetation cover, soils and meteorologic data. Hands-on experience in manipulating these types of data sets for hydrologic applications. Recommended preparation: GEOG 385, For 462 or BAE 251 or BAE 355 or CE 525 or GEOG 320 or equivalent.

GEOG ID475, Advanced GIS (3cr)
WSU ES/RP 575. Spatial analysis in raster- and vector-based systems; concepts, techniques, and applications of GIS technology using microcomputer and workstation platforms. Two lectures and 2 hours of lab a week. Prereq: Geog 385, Stat 251.

GEOG 479, GIS Programming (3cr)
An introduction to the use of programming languages with standard ArcGIS concepts. An introduction to Python ArcObjects and Visual Basic. Prereq: Geog 390 (formerly 470), and Geog 475.

GEOG 483/583, Remote Sensing/GIS Integration (3cr)
Concepts and tools for the processing, analysis, and interpretation of digital images from satellite and aicraft-based sensors. The integration of remotely-sensed data and the other spatial data types within Geographic Information Systems. Additional assignments and exams required for graduate credit. Two lectures and 1 hour of lab a week. Prereq: For 472 or equivalent, and Stat 251. Coreq: Geog 385 or equivalent.

GEOG 580, GIS Seminar (3cr)
Advanced topics in GIS and GIS applications including macro programming, user interface design, and data integration. Maybe be repeated for credit. Prereq: permission.

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