



College of Agriculture and Life Sciences

Crop and Soil Sciences:

CSS 4110/CEE 4110: Environmental Information Science

Experiential approaches emphasize use and integration of maps, spatial databases, aerospace imagery, field data, and the global positioning system (GPS) to discriminate, measure, inventory, and monitor agricultural and environmental resources and processes. Spring.

Contact: S. DeGloria, sdd4@cornell.edu

CSS 4200: Geographic Information Systems

Emphasizes accessing, updating, analyzing, and mapping geo-spatial data. Considers needs assessment; spatial data accession; coordinate systems; spatial database design, construction, and maintenance; modeling and analysis; map accuracy assessment; and digital cartography. Fall.

Contact: S. DeGloria, sdd4@cornell.edu

CSS 4650: Global Positioning System

Introduction to navigation-grade GPS instruments used in agricultural and environmental sciences, including instrument familiarization; field-data collection and processing; and GPS-GIS integration and mapping of geo-positional data. Spring.

Contact: S. DeGloria, sdd4@cornell.edu

CSS 6200/NTRES 6200 : Spatial Modeling and Analysis

Theory and practice of applying geo-spatial data for resource inventory and analysis, biophysical process modeling, and land surveys, emphasizing spatial analytical methods. Laboratory sections are used to process, analyze, and visualize geo-spatial data of interest to the student. Spring.

Contact: S. DeGloria, sdd4@cornell.edu

CSS 6210: Applications of Space-Time Statistics

Introduction to space-time statistics with applications in agriculture and environmental management. Topics include geostatistics, temporal statistics, sampling, experimental design, state-space analysis, data mining, and fuzzy logic. Focuses on landscape-scale processes and a user's perspective. Alternate Spring (odd).

Contact: H. vanEs, hmv1@cornell.edu

Development Sociology:

DSOC 3140: Spatial Thinking, GIS, and Related Methods

The purpose of this course is to introduce the undergraduate not only to aspects of spatial patterns, trends, and themes but also to methodologies for bringing spatial considerations into their research. The course will provide a practical introduction to GIS via lab assignments. Fall

Contact: J. Francis, jdf2@cornell.edu

DSOC 5600/CRP 5230: Analytical Mapping and Spatial Modeling

The first part of the course focuses on various features of GIS that are most useful to social scientists in their endeavors. The second part of the course introduces spatial statistics that further this understanding as well as control for spatial autocorrelation when it exists. Spring 2012.

Contact: J. Francis, jdf2@cornell.edu

DSOC 7190: Advanced Regression and Spatial Statistics

This course focuses on logistic regression and spatial linear regression modeling. Some time will be devoted to an overview of maximum likelihood procedures which form the basis of these spatial regression methods. Spring 2012.

Contact: J. Francis, jdf2@cornell.edu

Natural Resources:

NTRES 6700: Spatial Statistics

Develops and applies spatial statistical concepts and techniques to ecological and natural resource issues including visualizing spatial data and analysis and modeling of geostatistical, lattice, and spatial point processes. Alternate Spring (even)

Contact: P. Sullivan, pjs31@cornell.edu

College of Architecture, Art, and Planning

City and Regional Planning:

CRP 4080/5080: Introduction for GIS for Planners

This course is designed to provide students with a conceptual understanding of GIS, practical hands on experience with GIS software, and understanding of how GIS can be applied to planning practice and research. Students will be introduced to the basic concepts, structures, and functions of GIS as well as their applications and limitations. A major part of the class is the development of a final project. The purpose of the project is to provide experience in collecting, processing and/or analyzing spatial data and should focus on a planning analysis/research problem that requires GIS data and spatial analysis to address/analyze the problem. Many students work with a professional client for the final project. Fall.

Contact: S. Schmidt, sjs96@cornell.edu

CRP 6000: GIS Planning Studio

Introduction to spatial analysis techniques and planning support systems within an applied studio setting. Focus will likely be examining land use and environmental planning at the regional scale. Proposed Spring 2012.

Contact: S. Schmidt, sjs96@cornell.edu

College of Engineering

Civil and Environmental Engineering:

CEE 6100: Remote Sensing Fundamentals

Introduction to the principles, equipment, and methods used in remote sensing of Earth resources by aircraft or satellite sensors. Topics include interactions of electromagnetic radiation, sensors, sensor and ground-data acquisition, data analysis and interpretation, and project design. Fall.

Contact: W. Philpot, wdp2@cornell.edu

CEE 6150: Digital Image Processing

An introduction to digital image-processing concepts and techniques, with emphasis on remote-sensing applications. Topics include image acquisition, enhancement procedures, spatial and spectral feature extraction, and classification, with an introduction to hyperspectral data analysis. Spring.

Contact: W. Philpot, wdp2@cornell.edu

Extension, Outreach, and Library Resources

IRIS:

Geospatial Literacy for Youth

A statewide and regional applied research and education program to advance spatial data literacy that includes the fundamental aspects of creation, comprehension, and utilization of spatial data for resource inventory and management; and geospatial science training for 4H staff, volunteers and youth leaders and K-12 teachers.

Contact: Susan Hoskins, sbh1@cornell.edu

Workshops for Environmental Professionals & Educators

Dissemination of information on the features, functionalities, and implementation of geographic information systems (GIS) and image processing (IP) software. Workshop and Webinar participants are offered hands-on experience in the use of GIS/IP software for practical solutions and skill development.

Contact: Steve Smith, sds3@cornell.edu

Geospatial Software License Support

Management of SUNY-Cornell site license for ESRI geospatial software and ERDAS image processing software license (HEAK) for academic instruction and extension/outreach.

Contact: Steve Smith, sds3@cornell.edu

Mann Library Workshops, Consultations, and Equipment

Workshops on introductory GIS mapping and analysis. Individual consultations for help finding data, using geospatial tools and software, loaning GPS units, and learning about courses. <http://mannlib.cornell.edu/research-help/gis>

Contact: Keith Jenkins, kgj2@cornell.edu

Cornell University Geospatial Information Repository (CUGIR)

CUGIR is an active online repository providing geospatial data for New York State with emphasis on those natural features relevant to agriculture, ecology, natural resources, and human-environment interactions. <http://cugir.mannlib.cornell.edu/>

Contact: Keith Jenkins, kgj2@cornell.edu

Olin Map & Geospatial Information Collection

Geospatial materials including topographic maps, land ownership maps, historic and modern city plans, nautical charts, geological maps, reproductions of historic maps, aerial photographs, GIS data and software, and introductory workshops on Google Maps and Google Earth. <http://www.library.cornell.edu/olinuris/ref/maps/map.htm>

Contact: Boris Michev, bm19@cornell.edu

Academic GIS courses at Cornell, 2010-2011

Official Cornell courses dealing with GIS can be found in several departments across campus. Note that some of these courses focus entirely on GIS, while others may include GIS-related topics only as a portion of the total course content.

For more details, see https://confluence.cornell.edu/x/IIM_BQ

Spring 2011

CEE 6150 Digital Image Processing
CSS 4110 Environmental Information Science (also CEE 4110)
CSS 4650 Global Positioning System
CSS 6200 Spatial modeling and Analysis (also NTRES 6200)
CSS 6210 Applications of Space-Time Statistics

Fall 2010

CEE 6100 Remote Sensing Fundamentals (also CSS 6600)
CRP 4080 Introduction to Geographic Information Systems (GIS) (also CRP 5080)
CSS 4200 Geographic Information Systems
DSOC 3140 Spatial Thinking, GIS, and Related Methods