Graduate Certificate, Geospatial Intelligence

Five courses are required to earn the geospatial intelligence certificate:

**GISC 6381 Geographic Information Systems Fundamentals**
PC-based hands-on introduction to GIS concepts, technologies and their applications.

**GISC 5313 Geospatial Data Analysis Fundamentals**
Focuses on applying basic statistical methodology to spatial research questions. Concepts of statistical data analysis including descriptive statistics, exploratory methods, sampling theory, statistical inference and correlation analysis are reviewed from a Geo-Information Sciences perspective. Regression analysis and basic methods of spatial pattern analysis are introduced. Prerequisite: GISC 6381.

**GISC 7365 Remote Sensing Digital Image Processing**
Introduction to remote sensing digital image processing techniques. Topics covered include principles of remote sensing and remote sensors, image visualization and statistics extraction, radiometric and geometric correction, image enhancement, image classification and change detection. Innovative image processing approaches will also be introduced. State-of-the-art commercial image processing software is used for labs and applications development.

**GISC 6387 GIS (Capstone) Workshop**
Allows students to work on independent projects tailored to intelligence interests. Prerequisite: GISC 6381 & GISC 6382

One Topic (elective course) chosen from the following, or as approved by the certificate director:
- School of Economic, Political and Policy Sciences
  - GISC 5316 Regression Analysis with Spatial Applications
  - GISC 5317 Computer Programming for GIS
  - GISC 5353 Emergency management
  - GISC 5359 Protection of Infrastructure and Critical Assets
  - GISC 6325 Introduction to Remote Sensing
  - GISC 6332 GIS Applications in Criminology
  - GISC 6383 GIS Management and Implementation
  - GISC 6384 Spatial Analysis and Modeling
  - GISC 6386 Urban and Environmental Applications of GIS/Remote Sensing
  - GISC 6385 GIS Theories, Models and Issues
  - GISC 6388 GIS Application Software Development
  - GISC 6386 Urban & Environmental Applications of GIS/RS
  - GISC 6388 GIS Application Development
  - GISV 7360 GIS Pattern Analysis
  - GISC 7362 GIS Network Modeling
  - GISC 7363 Internet Mapping and Information Management
  - GISC 7366 Applied Remote Sensing
  - GISC 7384 Advanced Raster Modeling
  - GISC 7387 Research Design in GIS

- School of Natural Science (Geoscience)
  - GEOS 5322 GPS Satellite Surveying Techniques
  - GEOS 5324 3D Data Capture and Ground Lidar
  - GEOS 5325 Intro to Remote Sensing
  - GEOS 5329 Applied Remote Sensing
  - GEOS 5326 Remote Sensing Digital Image Processing

- School of Management (MIS)
  - MIS 6326 Database Management Systems
  - MIS 6308 Systems Analysis & Project Management
  - MIS 6324 Business Intelligence Software and Techniques
  - MIS 6360 Software Project Management
  - GISC 7361 Spatial Statistics

Individuals experienced with GIS may have the introductory course (GISC 6381) waived at the discretion of the Certificate Director, but must take an additional course from the topics courses listed above. No more than two courses may be transferred from another institution. Courses for the Certificate must be completed within a 3-year period with a minimum cumulative GPA of 3.0.