

## ***Graduate Certificate in Spatial Data Science (SDS)***

The Spatial Data Science certificate is an interdisciplinary program that integrates the strengths of Geospatial Information Sciences and Social Data Analytics and Research Programs. It focuses on offering geospatial professionals with data collection and analytical, knowledge mining, machine learning, big data handling, and programming skills, and equipping data science professionals with capabilities in geographic information systems (GIS), remote sensing/drone, geovisualization, locational intelligence, and spatial pattern analysis, which allows the solving of real world location problems in various areas including agriculture, environment management, insurance, marketing, retail and real estate, oil and mining, public health, social and public services, transportation, smart city and urban planning.

### **Certificate Requirements**

Requirements for admission to the certificate program are the same as a non-degree seeking graduate student. The Spatial Data Science Certificate requires completion of five (5) graduate courses (15 semester credit hours). The courses taken for this certificate will apply to Master of Science in Geospatial Information Sciences degree if the student meets the conditions for full admission as a graduate student to the Master's degree program. Courses taken as part of this certificate also can be taken in conjunction with the Graduate Certificates in Geographic Information System, Geospatial Intelligence, and Remote Sensing. Certificate must be completed within a 3-year time period with a minimum GPA of 3.0.

#### **Required Courses – Twelve (12) Semester Credit Hours:**

- GISC 6321      Spatial Data Science
- GISC 6381      Geographic Information Systems Fundamentals
- EPPS 6302      Methods of Data Collection and Production
- EPPS 6323      Knowledge Mining

#### **Elective Courses – Three (3) Semester Credit Hours from the following:**

- GISC 6317 /      Python Programming for Social Science  
EPPS 6317
- GISC 6363      Internet Mapping and Information Processing
- GISC 6384 /      Advanced Geographic Information Systems  
GEOS 6384
- GISC 6301      GIS Data Analysis Fundamentals
- EPPS 6326 /      Machine Learning for Socio-Economic and Geo-Referenced Data  
GISC 6323
- EPPS 6356      Data Visualization
- EPPS 6354      Information Management

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