

Course Objectives/Course Outline
Spokane Community College

Course Title: Applications in Geographic Information Systems

Prefix and Course Number: NATRS 221

Course Learning Outcomes:

By the end of this course, a student should be able to:

- Independently problem solve within the framework of ESRI's suite of ArcGIS software
- Articulate an understanding of cartographic concepts
- Edit existing spatial data
- Use metadata to problem solve and develop metadata for original spatial datasets
- Integrate the collection of spatial data via GPS with its effective management, analysis and display in GIS
- Collaborate with others in the creation and management of feature classes within a file geodatabase
- Design and conduct analyses using basic and advanced geoprocessing tools and extensions including Spatial Analyst and 3D Analyst
- Develop solutions to real-world situations using GIS and follow them through to professional resolutions

Course Outline:

- I. Problem Solving Approaches in GIS
- II. Metadata
- III. Management of spatial data within a geodatabase
- IV. Data Acquisition and Display
 - A. Import of GPS data
 - B. KML data
 - C. GPX data
- V. Geoprocessing Tools for Vector Data
- VI. Geoprocessing Tools for Raster Data
- VII. Collaboration within GIS
 - A. GPS data collection and import
 - B. Creating metadata
 - C. Managing geodatabase
 - D. Sharing data
- VIII. Professional GIS Applications Project
 - A. Defining a project in conjunction with agency, community, and industry partners
 - B. Developing a proposal
 - C. Gathering relevant data
 - D. Analyzing spatial relationships
 - E. Reporting findings through effective display and writing
 - F. Sharing spatial data