2-Day: Water Resources Applications of GIS Level II (ArcGIS Pro Intermediate)

Overview
This course covers advanced GIS concepts as it applies to water resources applications. Upon completion an attendee will know how to query a GIS database, manipulate tabular data, edit spatial and attribute data, and present data clearly and efficiently using maps and charts in the context of water and watershed.

Participants will learn how to use ArcGIS Pro™. For water resources applications.

This 2-day course is **NOT** for those who are new to GIS. You must have completed beginner Water Resources Applications workshop before taking this workshop. This course will use ArcGIS Pro and discuss various GIS applications.

Prerequisites and Recommendations
Participants should have knowledge of GIS and ArcGIS Pro and **preferably completed our Level I Water Resources applications** offered by us. This course provides the fundamental ArcGIS knowledge and experience needed to enroll in Advanced GIS applications for Water Resources workshops

Module I: Review of Foundations of ArcGIS Pto
Learning Objectives:
- **Review of Fundamentals of ArcGIS Pro**

Create a Project Template in ArcPro
Review of Geoprocessing in ArcPro
Visualize, graph and animate temporal data using ArcPro

Module II: Advanced Mapping and Display with ArcGIS Pro
Learning Objectives:
- Overview of advanced mapping/display functions of ArcGIS Pro

Download and manage data using ArcPro
Use of Model Builder for Geoprocessing ArcPro
Review of GIS applications from Level I
Use of Display Filter in ArcGIS Pro
Share a web map via ArcGIS Pro

Module III: **Data Integration – GPS, Remote Sensing and Digitizing**
Learning Objectives
- Review of GIS applications for water resources
- Working with GPS data
- Water Budget Analysis
- Applications of Geoprocessing tools
- Role of remote sensing water resources applications

Case Study: Working with GPS data of weather stations

Case Study: Advanced Image classification and Water Budget Analysis

Case Study: Create points on a map using ArcPro

Case Study: Create points from a table using ArcPro

Module IV: Analyzing Spatial Data
Learning Objectives
- Introduction to Geocomputation
- Overview of common geoprocessing tools

Case Study: Preparing Data for Analysis

Case Study: Working with buffer for Riparian zone using Arc Pro

Module V: Working with Raster Data
Learning Objectives
- Working with DEMs
- Introduction to DEMs and Flow calculation
- Fundamentals of Watershed Delineation

Case Study: Find a Potential Reservoir using ArcPro

Case Study: Watershed delineation using ArcHydro with ArcGIS Pro

Module VI: Comprehensive Application of GIS
Learning Objectives
- Introduction to water related modeling
- Integration of soils, landuse and slope data

Case Study: Landuse and Population Growth analysis for water quality in ArcPro

Case Study: Working with NHD in ArcPro