



## Self-Paced Workshop: Advanced GIS II

### Course Objectives

This is an advanced course on theories and application of GIS techniques for spatial analysis. This workshop is comprised of a hands-on series of activities for those who want to expand their knowledge of using GIS. This workshop will include exercises using: geostatistical analysis (using Geostatistical Analyst), spatial analysis & suitability modeling (using Spatial Analyst & Geoprocessing wizard) and performing change detection analysis (using map algebra). Each student who successfully completes this course will have developed the skill to process GIS data for advanced GIS analysis. This workshop assumes at least Intermediate GIS knowledge. If you are not sure if you qualify, please read the Beginner and Intermediate GIS information to see if you are comfortable with those topics first.

### Self-Paced Workshop

This is a **self-paced** course, therefore the student is responsible for taking full advantage of the materials they will be sent (CD of data and PDF of Workbook). If a Certificate of Completion is desired, the student will be required to submit \*.jpgs of certain exercises in a timely manner to our staff as proof of progress. There is no lecture for this workshop and no meetings; everything is on your own using the materials provided.

### TOPICS COVERED

- **Distance Analysis**
  - Calculation of flying paths and travel distance
  
- **Cost Surface Analysis**
  - Finding best path (least cost) surface
  
- **Time Series**
  - Time Series data in ArcHydro
  
- **Geostatistical Analysis**
  - Tour of Geostatistical Analyst Part I
  - Tour of Geostatistical Analyst Part II
  - Using Inverse Distance Weighted (IDW)
  - Use Global Polynomial

- Use Local Polynomial and Radial Basis Functions
- Use Kriging
- Use Co-Kriging
- Ordinary Kriging Methods

➤ **Introduction to MapCalc**

- Displaying Maps
- Understanding MapCalc data types
- Using the Shading Manager
- Setting Map Properties
- Data Inspection and Charting in MapCalc
- Creating New Maps

➤ **Modeling with MapCalc and Surfer**

- Spatial Interpolation in Surfer
- Clustering and Map Similarity
- Measuring Distance and Connectivity
- Calculating Visual Exposure
- Characterizing Neighbors

<i>What Is Unique About Self-Paced Workshops?</i>	
<b>Instructor-Led Workshop</b>	<b>Self-Paced Workshop</b>
On 9am-4pm schedule	On your schedule
On-site (USF St. Petersburg)	At your location of choice
Instructor available in class	Assistance available via email/phone
Certificate of Completion at end of course	Certificate of Completion at end of course upon submission of *.jpgs
Use lab computers with software and data pre-installed	Install data on your computer and 180-day trial version of ArcGIS (with extensions)

**Contact Us**

Dr. Barnali Dixon / Julie Earls  
 140 7th Ave. South  
 (Geo-Spatial Analytics Lab –DAV 206)  
 University of South Florida St. Petersburg  
 St. Petersburg, FL 33701  
 Phone (727) 873-4025  
 E-mail: [Barnali Dixon](mailto:bdixon@mail.usf.edu) bdixon@mail.usf.edu