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Creating and Analysing Surfaces using ArcGIS® Spatial Analyst

ESRI Australia's Training Solutions

supporting your location intelligence needs through flexible and valuable training options

Why is it important

ArcGIS Spatial Analyst provides tools for advanced raster analysis. Using ArcGIS Spatial Analyst, you can model a variety of real-world scenarios to create new data, analyze complex terrain attributes, and solve problems. In this course, you work with elevation rasters and other data to model surfaces, evaluate results, and create a variety of maps that inform decision-making.

Designed for

This course is designed for GIS analysts and experienced ArcGIS users who perform raster-based spatial modeling and analysis. Those who need to conduct the analyses listed below or similar analyses will benefit:

- // Find suitable locations for new development
- // Site cellular and radio towers and map potential relay tower sites
- // Find low-visibility locations for storage tank farms
- // Find optimal locations for vineyards, ski slopes, and other applications that have site slope and aspect requirements
- // Determine lines of fire for military fortifications
- // Predict fire risk

Course Level: Intermediate

Learning Outcomes

- // Use different interpolation methods to create surfaces from sample data and evaluate the results
- // Calculate density
- // Create hillshade, shaded relief, and contour maps
- // Calculate slope and aspect
- // Calculate visibility surfaces and viewsheds

Prerequisites

You should have completed *ArcGIS Desktop II: Tools and Functionality* or *Learning ArcGIS Desktop* or have equivalent experience. If you are new to raster data, completion of *Working with Rasters in ArcGIS Desktop* is recommended.

Recommended Reading

Certain recommended books can be purchased online, by visiting the ESRI Australia online store at www.esriaustralia.com.au/onlinestore

Course Content

Getting started with surface analysis

- // How to represent surfaces
- // Sources of topographic data

Interpolating surfaces

- // Interpolate surfaces from point data using the IDW, Spline, Kriging, and Natural Neighbor methods
- // Specify a barrier

Preparing the analysis environment

- // Set workspaces and extent
- // Clip a raster to a display area
- // Create two overlapping rasters
- // Combine rasters
- // Use a mask

Calculating density

- // Feature density estimation
- // Simple and kernel density calculations
- // Use attributes to calculate density

Analysing surfaces

- // Create hillshades
- // Create contours
- // Calculate slope and aspect
- // Calculate visibility and viewshed

Course Details

Software used in this course	ArcGIS Desktop- ArcEditor/ArcInfo/ArcView 9.3 ArcGIS Extensions- Spatial Analyst 9.3
Duration	1 day
Commencement Dates	For the latest course calendar please visit www.esriaustralia.com.au/training
Terms & Conditions	Please see our website for the latest terms and conditions

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About ESRI Australia

ESRI Australia is the source of astute professional services and Geographic Information Systems (GIS) technology. We're experts in location intelligence; with over 30 years experience in implementing GIS solutions in dozens of industries.

Our passion for technology and considered approach gives our clients the power to see more and do more. With our expertise, knowledge, vision and technical capability, we turn 'possibility' into 'reality'

ESRI Australia Training Solutions

Derive maximum benefit from your location intelligence solution by ensuring your workforce has the knowledge and skills to fully utilise our investment in GIS.

ESRI Australia offers a complete range of training services to help educate and support your solution end users and administrators. With courses for beginners,

Intermediate and advanced users, ESRI Australia caters for all skill sets and educational requirements.

Our courses are taught by ESRI authorised instructors, which means that your employees can be assured of receiving consistent quality GIS training by accredited trainers.

Our flexible training options range from developing and delivering a complete training program for your organisation through to a range of scheduled courses held at centrally located training facilities.

With a client site, scheduled or knowledge transfer training available, ESRI Australia can provide the solution to meet your organisations training needs.