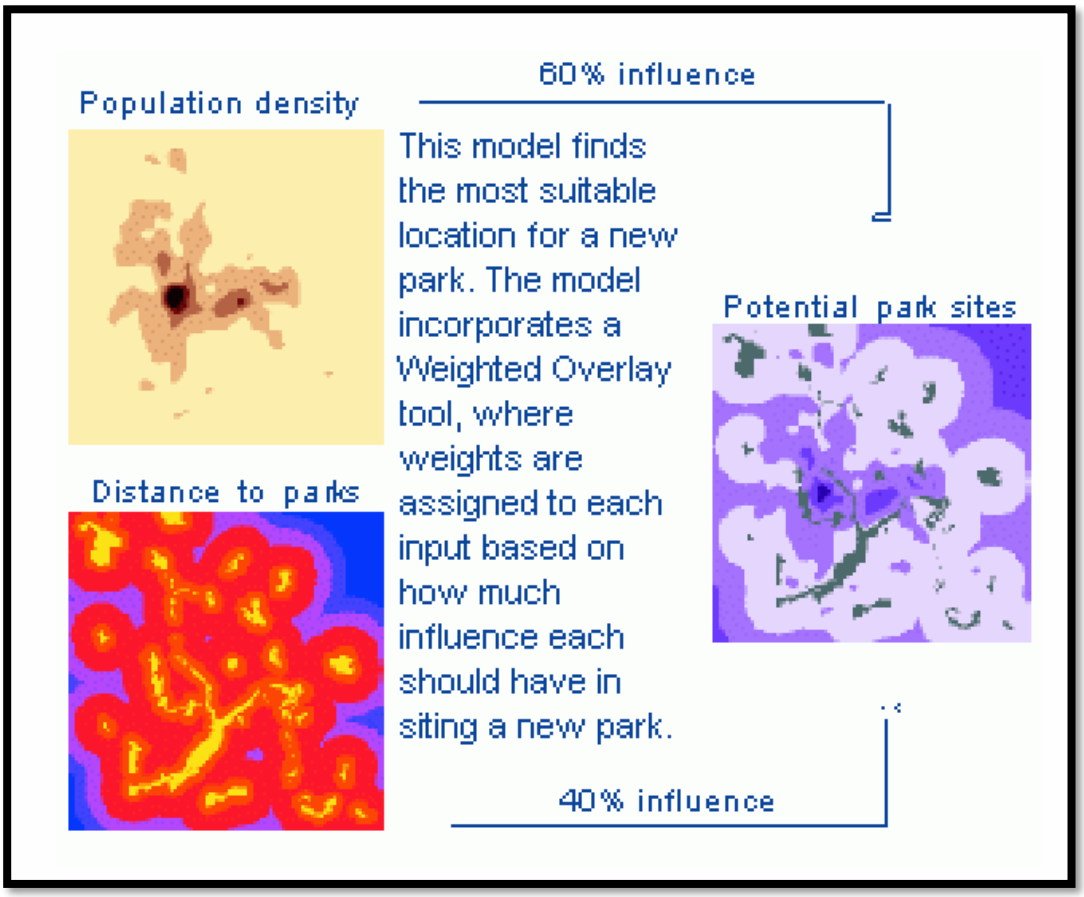
ArcGIS Spatial Analyst

ArcGIS Desktop Extensions

Register Now

SGD$1440.00 / person

ArcGIS Spatial Analyst provides a broad range of powerful spatial modeling and analysis capabilities. It also presents a rich suite of tools and capabilities for performing comprehensive, raster-based spatial analysis.



Level: Advanced
Course Duration: 3 days

What is ArcGIS Spatial Analyst extension? Scan the QR code to find out.

What is the course about?

You can create, query, map, and analyze cell-based raster data; perform integrated raster/vector analysis; derive new information from existing data; query information across multiple data layers; and fully integrate cell-based raster data with traditional vector data sources. You can employ a wide range of data formats to combine datasets, interpret new data, and perform complex raster operations.

Who is the target audience?

Designed for ArcGIS users and GIS Analysts who want to perform advanced analysis using integrated vector/raster data with modeling capabilities.

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Are there any prerequisites?

ArcGIS Pro: Essential Workflows course

What skills will I learn?

After completing this course, participants will be able to:

- Perform terrain analysis, hydrological analysis and statistical analysis
- Know how to create surface modeling and surface interpolation
- Able to derive suitability models
- Have the knowledge to perform image classification

Topics

1. Raster Concepts

- Features as raster
- Raster coordinate systems and registration
- Raster resolution
- Raster resampling
- Raster cell values and attribute tables
- Raster zones and regions
- Raster and Image formats
- Analysis environments

2. Building a raster database

- Data sources
- Raster management tools
- Raster compression
- Merging rasters
- Raster in geodatabases
- Image formats
- Pyramids and Statistics
- Raster rendering
- Raster conversion tools
- Projecting rasters
- Geometric transformation tools
- Georeferencing
- Rectification

3. Map Algebra

- Raster calculator
- Expressions and Operators
- ModelBuilder
- Spatial Analyst commands
- Functions
- Working with NoData

4. Raster processing tools

- Extract and Sample
- Aggregate
- Block Statistics
- Expand and Shrink
- Boundary Cleaning
- Thinning
- Filtering
- Nibbling
- Region Grouping

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5. Interpolation tools

- Creating surfaces
- Terrains
- Linear interpolation
- Collecting samples
- Controlling sample points
- IDW
- NN
- Spline
- Trend
- Kriging
- Topo to raster
- Barriers
- Surface testing
- Feature density estimation

6. Surface analysis tools

- Sources of topo data
- Surface conversion
- Contour and Curvature
- Slope and Aspect
- Hillshade
- Visibility analysis
- Viewshed
- Observer Points
- Controlling visibility
- Solar radiation tools

7. Hydrology tools

- Hydro data model
- Surface hydrology tools
- Topo surfaces
- Sinks identification and filling
- Streams order and link
- Stream to feature
- Basins and watersheds
- Flow tools
- Rain trace
- Groundwater hydrology
- Particle track tool
- Porous puff tool

8. Distance tools

- Euclidean distance
- Euclidean direction and allocation
- Weighted distance measurement
- Cost surface
- Travel costs
- Calculation and accumulation of travel costs
- Backline
- Allocation
- Path distance tools
- Finding cost paths
- Corridor

9. Building models

- Modeling spatial problems
- Types of models
- Binary suitability models
- Weighted suitability models
- Methodology and submodels
- Data types and math
- Scale and measures
- Suitability and weights
- Reclassification
- Reclassify with equations
- Weight and combine
- Weighted overlay
- Best locations
- ModelBuilder

10. Classification tools

- Multivariate toolset
- Image classification
- Data exploration
- Exploring source data
- Land cover classification
- Band collection statistics
- Electromagnetic spectrum
- Clusters and classes
- Signature file
- Supervised classification
- Unsupervised classification
- Analyze and editing signatures
- Class relationship
- Calculating class probability
- Finalizing and applying classification

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