

Specialised GIS Tools and Analysis

ArcGIS Desktop Extensions



Extensions for ArcGIS Desktop products allow you to perform extended tasks such as raster geoprocessing and three-dimensional analysis. Most extensions can be used by each product—ArcView, ArcEditor, and ArcInfo.

3D ANALYST

ArcGIS 3D Analyst allows you to effectively visualise and analyse surface data. Using ArcGIS 3D Analyst, you can view a surface from multiple viewpoints, query a surface, determine what is visible from a chosen location on a surface, create a realistic perspective image that drapes raster and vector data over a surface and record or perform three-dimensional navigation.

The ArcGlobe application in ArcGIS 3D Analyst allows you to manage and visualise, from a local or global perspective, extremely large sets of three-dimensional geographic data. ArcGlobe provides the capability to seamlessly interact with any geographic information as data layers on a three-dimensional globe.

WITH ArcGIS 3D ANALYST YOU CAN:

- Create three-dimensional views directly using your GIS data.
- Analyse three-dimensional data using cut/fill, line-of-sight, and terrain modeling.
- View your data from a global to local perspective.
- Navigate seamlessly through multi-resolution terrain data.
- Do spatial analysis in two or three dimensions.
- Visualise modeling or analysis results in three-dimensions.
- Use three-dimensional models and symbols for realism.
- Export your visualisations into videos.

DATA INTEROPERABILITY

ArcGIS Data Interoperability eliminates barriers for data sharing by providing state-of-the-art direct data access, transformation and export capabilities. This extension enables ArcGIS Desktop users to easily use and distribute data in many formats.

WITH ArcGIS DATA INTEROPERABILITY YOU CAN:

- Directly read more than 70 spatial data formats.
- Export to more than 50 spatial data formats.
- Model and diagram custom spatial data formats using a semantic data translation engine with 150 specialised transformers.
- Integrate with the geoprocessing framework.

NETWORK ANALYST

ArcGIS Network Analyst allows you to create and manage sophisticated network data sets and generate routing solutions.

ArcGIS Network Analyst is a powerful extension for routing and will provide a whole new framework for network-based spatial analysis (i.e., location analysis, drive time analysis, and spatial interaction modeling). This extension allows ArcGIS Desktop users to model realistic network conditions and scenarios.



**WITH ArcGIS NETWORK ANALYST
YOU CAN CONDUCT:**

- Drive-time Analysis
- Point-to-point routing
- Route directions
- Service area definition
- Shortest path
- Optimum route
- Closest facility
- Origin destination

ArcGIS Network Analyst enables ArcGIS users to solve a variety of problems using geographic networks. Tasks such as finding the most efficient travel route, generating travel directions, finding the closest facility, or defining service areas based on travel time become greatly simplified.

SPATIAL ANALYST

ArcGIS Spatial Analyst adds a comprehensive set of advanced spatial modeling and analysis tools to the ArcGIS Desktop. Using ArcGIS Spatial Analyst, you can derive new information from your existing data, analyse spatial relationships and build spatial models integrating core ArcGIS Desktop and ArcGIS Spatial Analyst tools.

**WITH ArcGIS SPATIAL ANALYST
YOU CAN:**

- Find suitable locations.
- Find the best path between locations.
- Perform integrated raster/vector analysis.
- Perform distance and cost-of-travel analyses.
- Perform statistical analysis based on the local environment, small neighborhoods, or predetermined zones.
- Generate new data using simple image processing tools.
- Interpolate data values for a study area based on samples.
- Clean up a variety of data for further analysis or display.

Because ArcGIS Spatial Analyst is so strongly integrated with the ArcGIS Desktop geoprocessing environment, it is easier than ever to solve complicated analysis problems. Geoprocessing analysis models are not only easy to create and implement, but they are also self documenting, so anyone can quickly understand your spatial analysis process. Thousands of ArcGIS users are leveraging this modeling environment to take full advantage of their data and make better decisions.

**TRAINING INTRODUCTION TO
ArcGIS SPATIAL AND 3D ANALYST**

This course introduces the ArcGIS Spatial Analyst and 3D Analyst extensions, illustrating some of their capabilities in spatial analysis. Often underused, these extensions offer huge potential in manipulating spatial information to answer geographical questions.

The course covers a number of different practical examples using Spatial Analyst, including visualising spatial data with the 3D Analyst extension and ArcGlobe. It also introduces the Geostatistical Analyst extension, briefly examining how this can further enhance spatial analysis.

This is an introductory course. For more in-depth understanding and practice with these extensions, students should enrol in further ESRI (UK) courses. For information on all training courses please contact training@esriuk.com.