



Elise can see more creative ideas coming from her team; their organisation's professional development program supports informed thinking

# Introduction to ArcGIS Desktop for Mining Geoscience

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### Why is it important

Designed for geoscientists working in the mining industry, this course introduces the ArcGIS tools used to accomplish mining geoscience workflows. In course exercises, you develop practical ArcGIS skills that can be directly applied to solve mining geoscience problems such as detecting mineral occurrence patterns, locating prospective deposits, and identifying optimal areas for mineral exploration.

### Designed for

This course is designed for mining geoscientists who want to learn how to use ArcGIS Desktop software to perform GIS operations and analysis.

**Course Level:** Intermediate

### Learning Outcomes

- // Understand how GIS is used for geoscience applications.
- // Display and symbolize geoscience data layers in ArcMap.
- // Create presentation-quality geologic maps and graphs.
- // Use ArcMap editing tools to create new features and assign feature attributes.
- // Generate and view statistics for geoscience data.
- // Use ArcGIS analysis tools to detect mineral occurrence patterns and identify optimal areas for mineral exploration.
- // Create a geodatabase to store geologic, geochemical, geophysical, and raster data.
- // Create a model that automates geoprocessing tasks used to locate prospective deposits.

### Prerequisites

Students should have a thorough understanding of mining terminology and business processes and a basic understanding of GIS concepts. Completion of *ArcGIS Desktop I: Getting Started with ArcGIS* is recommended. Geoscientists working in the mining industry will find the course of particular benefit.

### Recommended Reading

**GIS, Spatial Analysis, and Modelling.** David J. Maguire, Michael Batty and Michael F. Goodchild, Editors

**The ESRI Guide to GIS Analysis, Volume 2: Spatial Measurements and Statistics.** Andy Mitchell

Certain recommended books can be purchased online, by visiting the ESRI Australia online store at [www.esriaustralia.com.au/onlinestore](http://www.esriaustralia.com.au/onlinestore)

### Course Details

<b>Duration</b>	3 days
<b>Commencement Dates</b>	For the latest course calendar please visit <a href="http://www.esriaustralia.com.au/training">www.esriaustralia.com.au/training</a>
<b>Terms &amp; Conditions</b>	Please see our website for the latest terms and conditions

### Course Content

#### Working with geoscience data

- // Using Geologic, structural and geophysical data types
- // Adding, exploring and querying data

#### Symbolising geoscience data

- // Symbolising geology, faults, foldaxes and structural measurements
- // Visualising geochemical data

#### Creating a geology map for plotting

- // Creating a layout
- // Exporting a layout to digital formats

#### Georeferencing images

- // Transforming scanned map pixels to map units
- // Aligning an image with existing data

#### Working with projections

- // Defining a coordinate system
- // Assigning a coordinate system to CAD data

#### Building a geodatabase

- // Importing data and creating new data

#### Digitising and editing in ArcMap

- // Creating line, polygon and island polygon features

#### Finding anomalous geochemical samples

- // Generating statistics for mineral values
- // Using chart symbols to display mineral values associated with point features
- // Graphing anomalous geochemical samples

#### Working with ArcGIS analysis tools

- // Exploring spatial relationships between mineral occurrences and structure
- // Spatial Analysis using ModelBuilder

#### Viewing and Creating metadata in ArcCatalog

- // Metadata standards