

3D Modeling and 3D Analysis

Level: Advanced

Duration: 19 h

LESSONS

[Webinaaritallenne: Johdanto 3D-paikkatietoon](#)

- Tallenne 10.11.2021 järjestetystä webinaarista, kesto 60 min
- **Note: This webinar is only available in Finnish**

[Lidar in ArcGIS: An Introduction | Esri Training Video](#)

- Duration: 50mins
- About: This workshop will outline and demonstrate common lidar processing tasks and workflows. Topics include assessing lidar point coverage and sample density, creation of digital elevation models, forest canopy density and height estimation, intensity image creation, smooth contour generation, and floodplain delineation.

[Using lidar data in ArcGIS Pro](#)

- Duration: 42mins
 - About: A brief introduction to what lidar data is and how it can be used.
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EXERCISES

[Introduction to 3D Data | Esri Training Web Course](#)

- Duration: 2hrs
- Requirements: ArcGIS Pro 2.7
- About: In this course, you will learn about the types of data that are used to model the real world in 3D scenes, including functional surfaces and 3D feature types.

[Introduction to 3D Visualization | Esri Training Web Course](#)

- Duration: 3hrs
- Requirements: ArcGIS Pro 2.8
- About: ArcGIS Pro allows you to work with data in 2D and 3D environments from within the same application. The same data can be examined from a 2D and 3D perspective, side by side, which provides new insights into that data. Visualizing data in a 3D environment allows for realistic visualizations, can offer a different perspective, and can aid in identifying patterns and trends that may not be available in a 2D environment.

[Authoring 3D Scenes | Esri Training Web Course](#)

- Duration: 2hrs
- Requirements: ArcGIS Pro 2.6 (or later)
- About: In this course, you will learn how to plan out a scene, the types of data that can be used in a scene, and how to create a scene.

[Exploring 3D Features Using ArcGIS 3D Analyst | Esri Training Web Course](#)

- Duration: 1hr 30mins
- About: Knowing when 3D analysis is appropriate is pivotal to solving spatial problems and making smarter decisions. This course explores the spatial analysis approach to help you understand when 3D data and analysis are required. You will learn how specific types of input data are used for 3D analysis methods and practice 3D proximity and visibility analysis.
- Requirements: ArcGIS Pro 2.8, ArcGIS 3D Analyst

[Performing Viewshed Analysis in ArcGIS Pro | Esri Training Web Course](#)

- Duration: 1hr
- Requirements: ArcGIS Pro 2.6 or 2.7, 3D Analyst, Spatial Analyst
- About: The Viewshed tool visualizes visible areas from a vantage point. This tool has many practical uses, including how to locate guard towers, fire watch towers, or event surveillance. In this course, you'll learn how to adjust the tool for your analysis.

[Performing Line of Sight Analysis | Esri Training Web Course](#)

- Duration: 1hr 15mins
- Requirements: ArcGIS Pro 2.6 or 2.7, 3D Analyst
- About: In this course, you will perform line of sight analysis to solve problems and create information that cannot be obtained in 2D.

[Sharing 3D Content Using Scene Layer Packages | Esri Training Web Course](#)

- Duration: 2hrs
- Requirements: ArcGIS Pro 2.6 or 2.7, 3D Analyst, ArcGIS Online
- About: In this course, learn workflows to create 3D scenes in ArcGIS Pro and share your work to ArcGIS Online.

[Visualize the expansion of public transportation | Learn ArcGIS](#)

- Duration: 1hr
- Requirements: ArcGIS Pro 2.7, ArcGIS Online
- About: The City of San Francisco has proposed a new rail line that opens public transportation access in a new neighborhood. The City needs marketing materials to show the increases the coverage of San Francisco's rail network and, perhaps more importantly, get residents interested in learning more about the project. Your goal is to create a video for a social media audience that shows how expansion of the city's rail network will help connect predicted housing growth with downtown.

[Construct realistic buildings with multipatch editing | Learn ArcGIS](#)

- Duration: 1hr 30mins
- Requirements: ArcGIS Pro 2.6 (or later)
- About: As a facilities planner, you've been tasked with creating realistic 3D buildings for an upcoming remodel. To compare the suggested redesign to the current building, you'll use multipatch editing tools in order to create two buildings on the Penn State campus. After converting building footprints to multipatch features, you'll extrude them and edit vertices to create signature architectural features. Once you've created detailed facades, you'll apply textures to the buildings to make them as realistic as possible.

[Extract roof forms for municipal development | Learn ArcGIS](#)

- Requirements: ArcGIS Pro 2.7, Spatial Analyst, 3D Analyst
- Duration: 1hr 20mins
- About: The municipal government of Portland, Oregon, wants to evaluate buildings to assess whether they follow the city's green initiative. To do this, you need to create a 3D scene with building roof forms at Level of Detail (LOD) 2, which shows roof attributes like eaves, gables, and slopes. Using a point cloud dataset, you'll make a digital elevation model of the area and add roof form attribute data to building footprints symbolized in 3D. Finally, you'll convert the data to a multipatch feature class to share with the government.

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