

Perform Analysis: Network Analysis, Location-allocation Analysis and Distance Analysis

Level: Advanced

Suggested skills: Completion of GIS Basics module or equivalent knowledge

Duration: 13 h

To use ArcGIS Network Analyst extension, you need network dataset. You can use ready-to-use STK dataset if your university has it. If your university gets licenses via CSC you can download STK dataset [here](#) (the first section, Finnish road and street dataset by Esri Finland).

LESSONS

[ArcGIS Network Analyst: An Introduction | Esri Training Video](#)

- Duration: 1 hr
- About: This session is for newer users of ArcGIS Network Analyst, an extension designed to model road networks and solve transportation-related problems. Network Analyst is often used to route fleets of vehicles, generate service areas, and perform site selection analysis. The presenters discuss using the ArcGIS World Routing and Analysis Services, your own network analysis services, and local network datasets to solve transportation analysis problems.

EXERCISES

[Introduction to Distance Analysis | Esri Training Web Course](#)

- Duration: 1hr 30mins
- About: In this course, you will learn that "how far apart" means much more than the number of kilometers between places on a map—distance can also include the effect of the landscape on movement. You will learn how distance analysis can create more sophisticated models of near and far.
- Requirements: ArcGIS Pro 3.1

[Distance Analysis: Creating Cost Surfaces | Esri Training Web Course](#)

- Duration: 1hr 45mins
- About: In this course, you will learn what a cost surface is, how to create a cost surface, and how to use a cost surface in a distance analysis.
- Requirements: ArcGIS Pro 3.1, ArcGIS Spatial Analyst

[Distance Analysis: Using Distance Accumulation and Distance Allocation | Esri Training Web Course](#)

- Duration: 1hr 50mins
- About: In this course, you will learn how to model the traveler's experience of distance. You will explore distance accumulation and distance allocation methods to account for actual distance traveled and variations in rate of travel.
- Requirements: ArcGIS Pro 3.1, ArcGIS Spatial Analyst

[Creating Optimized Routes Using ArcGIS Pro | Esri Training Web Course](#)

- Duration: 1 hr
- About: This course shows how to use ArcGIS Network Analyst and a network dataset to create routes that incorporate cost values such as distance or time, a set of stops, and barriers that must be avoided.
- Requirements: ArcGIS Pro 3.1, Network Analyst

[Finding the Closest Facilities Using ArcGIS Pro | Esri Training Web Course](#)

- Duration: 1 hr
- Discover the fastest way to get from here to there with ArcGIS Network Analyst. In this course, you'll learn how to find the most efficient routes between incidents and facilities.
- Requirements: ArcGIS Pro 3.1, ArcGIS Network Analyst

[Creating an Origin-Destination Cost Matrix in ArcGIS Pro | Esri Training Web Course](#)

- Duration: 1 hr
- About: Obtain a matrix that uses the best routes from multiple origins to multiple destinations with ArcGIS Network Analyst. This course shows how to create a cost matrix based on quickest travel times or shortest distances along a transportation network.
- Requirements: ArcGIS Pro 3.1, ArcGIS Network Analyst, ArcGIS Online

[Optimizing Routes for Efficient Fleet Management | Esri Training Web Course](#)

- Duration: 1 hr 30 mins
- About: Learn how to create efficient delivery/pickup routes for a fleet of vehicles with ArcGIS Pro. This course shows you how to solve vehicle routing problems (VRPs). You will create an initial set of routes, then incorporate barriers, breaks, and preferred delivery times.
- Requirements: ArcGIS Pro 3.1, ArcGIS Network Analyst

[Finding the Optimal Location of Facilities Using ArcGIS Pro | Esri Training Web Course](#)

- Duration: 1 hr 15 mins
- About: Learn how to apply a standard workflow to perform location-allocation analysis. Work with ArcGIS Pro to identify facility locations that meet your criteria, capture demand, and provide the desired level of service.
- Requirements: ArcGIS Pro 3.1, ArcGIS Network Analyst

[Generating Service Areas Using ArcGIS Pro | Esri Training Web Course](#)

- Duration: 1 hr
- About: Learn how to create data that supports informed decisions on resource allocation and facility siting. This course focuses on how to use ArcGIS Network Analyst and existing network data to easily create service areas—areas within a certain distance or travel time of a facility.
- Requirements: ArcGIS Pro 3.1, ArcGIS Network Analyst

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