Introduction to ArcGIS® Indoors

STUDENT EDITION

Copyright © 2022 Esri

All rights reserved.

Course version 1.0. Version release date September 2022.

Printed in the United States of America.

The information contained in this document is the exclusive property of Esri. This work is protected under United States copyright law and other international copyright treaties and conventions. No part of this work may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying and recording, or by any information storage or retrieval system, except as expressly permitted in writing by Esri. All requests should be sent to Attention: Director, Contracts and Legal, Esri, 380 New York Street, Redlands, CA 92373-8100, USA.

Export Notice: Use of these Materials is subject to U.S. export control laws and regulations including the U.S. Department of Commerce Export Administration Regulations (EAR). Diversion of these Materials contrary to U.S. law is prohibited.

The information contained in this document is subject to change without notice.

Commercial Training Course Agreement Terms: The Training Course and any software, documentation, course materials or data delivered with the Training Course is subject to the terms of the Master Agreement for Products and Services, which is available at https://www.esri.com/~/media/Files/Pdfs/legal/pdfs/ma-full/ma-full.pdf. The license rights in the Master Agreement strictly govern Licensee's use, reproduction, or disclosure of the software, documentation, course materials and data. Training Course students may use the course materials for their personal use and may not copy or redistribute for any purpose. Contractor/Manufacturer is Esri, 380 New York Street, Redlands, CA 92373-8100, USA.

Esri Trademarks: Esri trademarks and product names mentioned herein are subject to the terms of use found at the following website: https://www.esri.com/legal/copyright-trademarks.html.

Other companies and products or services mentioned herein may be trademarks, service marks or registered marks of their respective mark owners.

Table of Contents

Esri resources for your organization

Course introduction

Course introduction
Course goals
Installing the course data
Icons used in this workbook

1 Getting started with ArcGIS Indoors

Lesson introduction
Mapping indoor spaces
Components of ArcGIS Indoors
Explore the ArcGIS Indoors environment
ArcGIS Indoors Information Model
Lesson review

2 Preparing building data

Lesson introduction
Sources of building data
Compare CAD and BIM data
Best practices for projecting CAD and BIM data
Supplemental files in making building data spatial
Exercise 2A: Georeference CAD data
Sign in to ArcGIS Pro
Open an ArcGIS Pro project
Verify that snapping is enabled
Add a CAD layer
Georeference a CAD layer
Exercise 2B: Georeference BIM data
Sign in to ArcGIS Pro
Open an ArcGIS Pro

3 Loading floor plan data

Georeference a BIM layer

Add a BIM layer

Lesson review

Lesson introduction Workflow for loading data Prepare CAD and BIM data Exercise 3A: Create the ArcGIS Indoors Information Model

Open ArcGIS Pro

Create a geodatabase

Create the Indoors Information Model

Review the datasets created

Requirements for loading floor plans

CAD configuration spreadsheet

Exercise 3B: Load floor plan features (CAD)

Open ArcGIS Pro

Create a new map

Review CAD configuration spreadsheet

Import floor plans

Verify the output

Exercise 3C: Load floor plan features (BIM)

Open ArcGIS Pro

Create a new map

Add floor plan data to the map

Import floor plan features

Verify the output

Lesson review

Answers to Lesson 3 questions

4 Adding floor-aware features

Lesson introduction

Making data floor aware

Configure a floor-aware map

Exercise 4A: Create floor-aware data

Import a new map

Configure the map properties

Configure floor-aware layers

Use the interactive floor filter

Set additional floor-aware layers

Floor-aware occupant data

Update occupant data

Exercise 4B: Update the Indoors model with additional features

Prepare ArcGIS Pro

Explore the existing Indoors model

Copy existing data to the ArcGIS Indoors geodatabase

Symbolize the features

Inspect the attribute tables

Add a new level field

Populate the new level field

Make layers floor aware Lesson review Answers to Lesson 4 questions

5 Create a 3D model

Lesson introduction

Preparing a 3D Scene

3D scene for wayfinding

Exercise 5A: Create a floor-aware 3D scene

Import a new map

Convert the map to a scene

Disable terrain elevation

Explore the scene

Creating an indoor 3D dataset

Examine product files for ArcGIS Indoors

Exercise 5B: Create 3D multipatch feature classes

Create an Indoors 3D feature dataset

Prepare the Units layer for 3D

Prepare the Details layer for 3D

Separate walls and doors

Prepare the Facilities layer for 3D

Convert the Facilities layer to multipatch

Import a scene template

Lesson review

Answers to Lesson 5 questions

6 Indoors preliminary network

Lesson introduction

Indoor routable networks

Examine the preliminary network creation workflow

Exercise 6A: Create a preliminary network

Open ArcGIS Pro

Create a new map

Inspect the indoor network dataset

Generate preliminary pathways

Floor transitions

Exercise 6B: Generate floor transitions

Prepare ArcGIS Pro

Add additional layers to the map

Generate floor transitions

Create a new floor-aware scene

Inspect the preliminary transitions

Lesson review
Answers to Lesson 6 questions

7 Managing the Indoors final network

Lesson introduction

Workflow for managing a final network

Exercise 7A: Thin the preliminary network

Prepare ArcGIS Pro

Thin preliminary pathways

Inspect the output

Prepare scene layers

Landmark features

Ranking pathways

Exercise 7B: Create the final indoor network

Prepare ArcGIS Pro

Rank pathways

View landmark features

Generate a network dataset

Build the network

Use network analysis to test the network

Create network analysis layers

Evaluating a final network

Updating a network

Lesson review

8 Sharing resources for ArcGIS Indoors

Lesson introduction

Web resources for ArcGIS Indoors apps

Workflow for deploying web resources

Examine categories

Configuring categories

Exercise 8: Share resources for ArcGIS Indoors

Open the ArcGIS Indoors sample project

Open the Configure Indoors Categories pane

Share a mobile map package for Indoors mobile apps

Share a web map for Indoor Viewer

Share a web scene for Indoor Viewer

Share network and closest facility web layers

Lesson review

Answers to Lesson 8 questions

9 Indoor Viewer web app

Lesson introduction

Resources to deploy the Indoor Viewer web app

Exercise 9: Configure the Indoor Viewer web app

Sign in to the Enterprise portal

Create a web app for Indoor Viewer

Configure the Indoor Viewer app

Use the Indoor Viewer app

Update the Indoors categories using ArcGIS Pro

Save web map edits

Reload directions

Open Indoor Viewer in kiosk mode

Lesson review

10 Launch Actions

Lesson introduction

Integration options

Configure launch actions

Launch action parameters

Exercise 10: Configure launch actions

Sign in to the Enterprise portal

Add the ArcGIS Survey123 app as a portal item

Create a new survey using a template

Customize the survey

Generate the launch action URL

Configure a launch action

Launch the survey from the Indoor Viewer app

Lesson review

Answers to Lesson 10 questions

11 Indoor Space Planner web app

Lesson introduction

Indoor Space Planner

Editing models for space planning

Symbolizing layers for the Indoor Space Planner app

Exercise 11A: Configure the Indoor Space Planner app

Open the Sharing project

Add Indoor Space Planner map to the Sharing project

Share a web map for Indoor Space Planner

Share the editable layers for Indoor Space Planner

Configure the Indoor Space Planner web map

Create the Indoor Space Planner app

Create a new plan

Capabilities of the Indoor Space Planner app

Exercise 11B: Plan occupant activity using Indoor Space Planner

Create a new plan

Unassign occupants using the Assignments list

Unassign occupants using the map

Create a hotel

Create a hot desk

Assign occupants to activity-based work areas

Share the plan

Lesson review

12 Making Indoors apps dynamic

Lesson introduction

Using dynamic layers across Indoors apps

Update the Indoors mobile map package

Exercise 12A: Update the Indoor Viewer app

Open the Indoor Viewer web map in ArcGIS Pro

Update the source of the dynamic web layers

Save the web map

Exploring workspace reservations

Exercise 12B: Enable workspace reservations in Indoor Viewer

Open the Sharing project

Insert a new map

Add the Reservations layer to the map

Share the Reservations layer

Update the Indoor Viewer web map

Enable workspace reservations

Make a workspace reservation

Workflow review

Lesson review

Answers to Lesson 12 questions

Appendices

Appendix A: Esri data license agreement

Appendix B: Answers to lesson review questions

Appendix C: Additional resources