

Python with Arcpy (Automation with Arcpy) Certificate course By The Industrial Expert

Course Overview

ArcPy is a Python site package that provides a programming interface for working with Esri's ArcGIS software. It allows users to automate and script various geoprocessing tasks, spatial data management, map creation, and analysis. ArcPy leverages the functionality of ArcGIS geoprocessing tools and provides additional capabilities for working with spatial data.

some key features and capabilities of ArcPy:

- **Geoprocessing:** ArcPy allows you to access and execute geoprocessing tools within ArcGIS. These tools perform various spatial analysis and data management tasks, such as buffer analysis, feature extraction, data conversion, and more.
- **Data Management:** ArcPy provides functions to manage spatial data, including creating and deleting data sets (such as feature classes and shapefiles), querying and updating attribute data, and manipulating raster datasets.
- **Mapping and Visualization:** ArcPy allows you to automate the creation and modification of map documents (MXDs) in ArcGIS. You can add and remove layers, modify symbology, set map extents, and export maps to different formats.
- **Spatial Analysis:** ArcPy provides a wide range of functions for performing spatial analysis tasks, including overlay operations (such as union, intersect, and clip), proximity analysis (such as buffer and near analysis), and statistical analysis (such as zonal statistics and hotspot analysis).
- **Data Conversion:** ArcPy allows you to convert data between different formats, such as shapefiles, geodatabases, and raster datasets. You can also automate the process of importing and exporting data to and from various file formats.
- **Automation and Scripting:** ArcPy enables you to automate repetitive tasks by writing Python scripts. You can create scripts to perform complex geoprocessing workflows, iterate through datasets, and integrate ArcGIS with other Python libraries and tools.

Pre-Requisites

- Basic Python knowledge
- Understanding of ArcGIS concepts
- Knowledge of geospatial data formats
- Spatial data analysis knowledge

well these prerequisites are beneficial, they are not mandatory. You can start learning ArcPy and acquire the necessary skills and knowledge along the way.

Benefits of Learning Python with Arcpy

Learning Python with ArcPy, the Python library for ArcGIS, can offer several benefits, particularly if you are working with spatial data and GIS (Geographic Information System) tasks. Here are some advantages of learning Python with ArcPy:

- Efficient automation
- Integration with ArcGIS
- Extensive geoprocessing capabilities
- Flexibility and customization
- Integration with other Python libraries
- Reusability and sharing
- Learning transferability
- Active community and resources

Overall, learning Python with ArcPy empowers you to automate GIS tasks, extend ArcGIS functionalities, and perform advanced spatial analyses, making you a more efficient and capable GIS professional.

Related Job Roles on Arcpy

- GIS Developer
- Geospatial Data Analyst
- Spatial Data Engineer
- Environmental Planner
- Urban Planner

ArcPy can be employed to automate data processing, perform site suitability analysis

Available Training Options

- Online/Offline
- Weekdays Batches
- Weekend Batches
- Course - Duration: 45 Days
- Mode of Training - Online - Live Online Classes
- Daily 1Hr (Need to have a laptop or Computer with Good Internet)

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Python with Arcpy Training Syllabus

Introduction to python

- History
- Features
- Setting up path
- Working with Python
- Basic Syntax
- Variable and Data Types
- Operator

Conditional Statements

- If- else
- elif
- Nested if-else

Looping

- For
- While
- Nested loops

Control Statements

- Break
- Continue
- Pass

String Manipulation

- Accessing Strings
- Basic Operations
- String slices
- Function and Methods

Lists

- Introduction
- Accessing list
- Operations
- Working with lists
- Function and Methods

Tuple

- Introduction
- Accessing tuples
- Operations
- Working
- Functions and Methods

Dictionaries

- Introduction
- Accessing values in dictionaries
- Working with dictionaries
- Properties
- Functions

Functions

- Defining a function
- Calling a function
- Types of functions
- Function Arguments
- Anonymous functions
- Global and local variables

Modules

- Importing module
- Math module
- Random module

Input-Output

- Printing on screen
- Reading data from keyboard
- Opening and closing file
- Reading and writing files
- Functions

Exception Handling

- Exception
- Exception Handling
- Except clause
- Try ? finally clause
- User Defined Exceptions

OOPs concept

- Class and object
- Attributes
- Inheritance
- Overloading
- Overriding
- Data hiding

Regular expressions

- Match function
- Search function
- Matching VS Searching
- Modifiers
- Patterns

Multithreading

- Thread
- Starting a thread
- Threading module
- Synchronizing threads
- Multithreaded Priority Queue

Python for ArcGIS (ArcPy)

Introduction to arcpy

- Important Python Modules for GIS Analysis
- Configuring the Python Environment
- Creating the First Python Script in Arcpy

ArcPy Geometry Objects and Cursors

- ArcPy geometry object classes
- ArcPy Point objects
- ArcPy Array objects
- ArcPy Polyline objects
- ArcPy Polygon objects

ArcPy Cursors - Search, Insert, and Update

- The data access module
- Search cursors
- Attribute field interactions
- Update cursors
- Updating the shape field
- Adjusting a point location
- Deleting a row using an Update cursor
- Using an Insert cursor
- Inserting a polyline geometry
- Inserting a polygon geometry

Creating geo processing tools

- Creating geo processing tool using .Pyt
- Creating geoprocessing tool using .tbx
- Creating geoprocessing tool using model builder
- Creating geoprocessing tool using python script

Advanced Analysis

- Using Network Analyst
- Creating a network dataset
- Accessing the network dataset using arcpy

ArcPy with map documents

- Interacting with map document element
- Working with Data frames
- Using arcpy.mapping module to control layer objects
- Exporting the map to pdf and other formats

For Registration/ Customization of Course / Course Fees

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Duration:	45 Days
Mode of Training:	Online
Weekdays:	Monday-Friday
Weekends:	Saturday and Sunday

Student Review

Arvind Raju

From : Oman

I've taken up the Advance Python & Arcpy classes from this institute with trainer Mrs. Roselynn is very knowledgeable and teaches the course topics with great detail. Everything was easy to understand and I was always helped with doubts until it was completely rectified. I would definitely recommend this Institute to anyone wanting to learn Python or any of the other courses they offer.

Ullash Ghosh

From : Kolkatta

Excellent teaching of Advance Python programming by experienced trainer. Flexible timings. It was an awesome experience.

Jahir Hussain

From : Qatar

Its Helped me to identify clear, be able next steps towards resolving my own workplace conflict and issues.

Ayeesha H

From : Bangalore

Great knowledge given by the mentor, Best training institution. Mam has explained all the topics very clearly.

Student Review

Vishnu vg From Kerala

My trainer, has a very good command over all the topics. She has explained each topic very clearly. We got a good understanding of all the concepts as she used to write programs daily for the real time scenarios. She make us practice during the classes. Overall I could say, you will be gaining good hands-on and understanding by end of the course

Eshawar Rao From Hubli Dharwad

Excellent Faculty, Excellent Knowledge about subject, madam gives Attention towards every individual student, Madam is having enough Patience in clearing all individual doubts, Overall Excellent training centre to learn and to grow.

Siddhi Kanekar From Pune

Best training institution. Mam has explained all the topics very clearly.
Thank you so much mam for being part of your institution.

Aghil Dev From Orisa

I happy to be a student of rose mam, as she was always present to help. My classes were good and helped me in understanding the concept. Thanks rose mam

Gaurav Chauhan

Position: GIS Analyst

Company:

Carifer Technologies Private Limited
Chennai

Salary: 13 LPA

Harisha

Position: GIS Analyst

Company:

GVS Technosoft Pvt. Ltd
Salary: 10 LPA

Ankit Hemnani

Position: Software Engineer .Net

Company:

Celtic System Pvt.Ltd
Salary: 7.5 LPA

Harish Vijayakumar

Position: Project-Assosiate

Company:

Cognizant Technology Solutions India
Private Limited
Salary: 12 LPA

KIRAN B

Qualification: MBA

Position: Business Head

Experience: 18 Years

His extensive experience in Operations Management, Client Acquisition, HR & Recruitment, and working with startups, he has demonstrated a track record of success across multiple industries and geographies. Starting from an executive level, he progressed to management positions, where he implemented process improvements to enhance efficiency, increase revenue, and drive growth. His vast network of colleges and training centers has significantly contributed to the development of robust recruitment and training pipelines. Moreover, he has successfully engaged with diverse clients.

NIKHIL S D

Qualification: BE Civil

Position: CAD Trainer (Civil)

Experience: 10 Years

Programing Skills: C,C++

2D And 3D Skills: AutoCad, 3D Max, Staad pro, Solid Works, Revit, Google Sketchup and ArcGIS CityEngine

Highly experienced CAD Civil Trainer with a demonstrated track record of success in delivering comprehensive training and instruction, specifically tailored for civil engineering applications. Committed to empowering learners with the necessary skills and knowledge to excel in their civil design and drafting projects.

RAMESH J

Qualification: BE Mech

Position: CAD CAM Trainer (Mech)

Experience: 6 Years

Programing Skills: C,C++,Python

2D And 3D Skills: AutoCad, Catia, Pro-e, Solid Edge, MatLab, Ansys, Solid Works,

Results-oriented CAD Mech Trainer with a decade of experience delivering exceptional training and instruction in 2D and 3D modeling software for mechanical engineering applications. Committed to equipping learners with the skills and knowledge needed to excel in mechanical design, simulation, and manufacturing.

ROSELEN S B

Qualification: MCA

Position: Programmer And Corporate Trainer

Experience: 12 Years

Programing Skills: Java, Python, AI, Machine Learning, Php, SQL, Full Stack

GIS Skill: Arcpy, ArcGIS JS API, ArcGIS Python API, PostGIS, Web AppBuilder, WebGIS

Highly experienced programming mentor with a strong background in various programming languages. With over 12 years of training experience, has successfully mentored more than 3000 students, dedicated to helping aspiring programmers and professionals acquire the necessary skills and knowledge to excel in their programming careers.

KAVITA H

Qualification: MSc.IT

Position: Programing Trainer

Experience: 10 Years

Programing Skills: C, C++, Java, MSSQL, MYSQL Server, C# and good knowledge in Servlets, JSP, EJB Worked on J2EE 1.4 Application Server

Kavita is a seasoned programming mentor and trainer with a decade of experience specializing in Java Servlets and MySQL. She has a strong passion for teaching and guiding individuals in mastering these technologies. kavita's in-depth knowledge and practical experience in Java Servlets and MySQL make her an ideal mentor for aspiring programmers looking to excel in web development

ANKIT H

Qualification: MSc.Geoinformatics

Position: GIS Trainer

Experience: 6 Years

GIS Skills: Arc GIS, Arc GIS Pro, QGIS, IGIS, Fusion X, Auto CAD, MS Office, Google Earth, Bhuvan Portal, Geo-Server, Arcgis online, Microstation

Programing Skills: HTML, CSS, Java script, ArcGIS API for Java script, .Net, Python
Ankit is a highly skilled GIS trainer. Has experience in ArcGIS, QGIS, PostGIS, remote sensing, and network analysis. His expertise lies in the field of spatial data analysis and geospatial technologies. He is passionate about sharing his knowledge and helping individuals develop proficiency in GIS applications for various industries.

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