

PYTHON FOR DATA SCIENCE CERTIFICATION TRAINING COURSE

About IntelliPaat

IntelliPaat is a global online professional training provider. We are offering some of the most updated, industry-designed certification training programs in the domains of Big Data, Data Science & AI, Business Intelligence, Cloud, Blockchain, Database, Programming, Testing, SAP and 150 more technologies.

We help professionals make the right career decisions, choose the trainers with over a decade of industry experience, provide extensive hands-on projects, rigorously evaluate learner progress and offer industry-recognized certifications. We also assist corporate clients to upskill their workforce and keep them in sync with the changing technology and digital landscape.

About The Course

Data Science with Python course helps you learn the python programming required for Data Science. This python for Data Science training you will master the technique of how Python is deployed for Data Science, work with Pandas library for Data Science, data cleaning, data visualization, Machine Learning, advanced numeric analysis, etc. along with real-world projects and case studies.

 <p>Instructor Led Training</p> <p>39 Hrs of highly interactive instructor led training</p>	 <p>Self-Paced Training</p> <p>24 Hrs of Self-Paced sessions with Lifetime access</p>	 <p>Exercise and project work</p> <p>50 Hrs of real-time projects after every module</p>	 <p>Lifetime Access</p> <p>Lifetime access and free upgrade to latest version</p>
 <p>24x7 Support</p> <p>Lifetime 24*7 technical support and query resolution</p>	 <p>Get Certified</p> <p>Get global industry recognized certifications</p>	 <p>Job Assistance</p> <p>Job assistance through 80+ corporate tie-ups</p>	 <p>Flexi Scheduling</p> <p>Attend multiple batches for lifetime & stay updated.</p>

Why take this Course?

- ***Python's design and libraries provide 10 times productivity compared to C, C++ or Java***
- ***A Senior Python Developer in the United States can earn \$102,000 – indeed.com***

Python is one of the best programming languages that is used for the domain of Data Science. IntelliPaat is offering the definitive Python for Data Science training course for learning Python coding, running it on various systems like Windows, Linux and Mac thus making it one of the highly versatile languages for the domain of Data Analytics. Upon the completion of the training, you will be able to get the best jobs in the Data Science domain for top salaries.

Python For Data Science Course Content

1. Introduction to Data Science using Python
2. Python basic constructs
3. Maths for DS-Statistics & Probability
4. OOPs in Python
5. NumPy for mathematical computing
6. Scipy for scientific computing
7. Data manipulation
8. Data visualization with Matplotlib
9. Machine Learning using Python
10. Supervised learning
11. Unsupervised Learning
12. Python integration with Spark-(selfpaced)
13. Dimensionality Reduction
14. Time Series Forecasting

Introduction to Data Science using Python

- ❖ 1.1 What is Data Science, what does a data scientist do
- ❖ 1.2 Various examples of Data Science in the industries
- ❖ 1.3 How Python is deployed for Data Science applications
- ❖ 1.4 Various steps in Data Science process like data wrangling, data exploration and selecting the model.
- ❖ 1.5 Introduction to Python programming language
- ❖ 1.6 Important Python features, how is Python different from other programming languages
- ❖ 1.7 Python installation, Anaconda Python distribution for Windows, Linux and Mac
- ❖ 1.8 How to run a sample Python script, Python IDE working mechanism
- ❖ 1.9 Running some Python basic commands
- ❖ 1.10 Python variables, data types and keywords.

Hands-on Exercise – Installing Python Anaconda for the Windows, Linux and Mac

Python basic constructs

- ❖ 2.1 Introduction to a basic construct in Python
- ❖ 2.2 Understanding indentation like tabs and spaces
- ❖ 2.3 Python built-in data types
- ❖ 2.4 Basic operators in Python
- ❖ 2.5 Loop and control statements like break, if, for, continue, else, range() and more.

Hands-on Exercise –

- ❖ 1. Write your first Python program
- ❖ 2. Write a Python function (with and without parameters)
- ❖ 3. Use Lambda expression
- ❖ 4. Write a class
- ❖ 5. Create a member function and a variable
- ❖ 6. Create an object and write a for loop to print all odd numbers

Maths for DS-Statistics & Probability

- ❖ 3.1 Central Tendency
- ❖ 3.2 Variability
- ❖ 3.3 Hypothesis Testing
- ❖ 3.4 Anova
- ❖ 3.5 Correlation
- ❖ 3.6 Regression
- ❖ 3.7 Probability Definitions and Notation
- ❖ 3.8 Joint Probabilities
- ❖ 3.9 The Sum Rule, Conditional Probability, and the Product Rule
- ❖ 3.10 Baye's Theorem

Hands-on Exercise –

- ❖ 1. We will analyze both categorical data and quantitative data
- ❖ 2. Focusing on specific case studies to help solidify the week's statistical concepts

OOPs in Python

- ❖ 4.1 Understanding the OOP paradigm like encapsulation, inheritance, polymorphism and abstraction
- ❖ 4.2 What are access modifiers, instances, class members
- ❖ 4.3 Classes and objects
- ❖ 4.4 Function parameter and return type functions
- ❖ 4.5 Lambda expressions.

Hands-on Exercise –

- ❖ 1. Writing a Python program and incorporating the OOP concepts.

NumPy for mathematical computing

- ❖ 5.1 Introduction to mathematical computing in Python
- ❖ 5.2 What are arrays and matrices, array indexing, array math, Inspecting a numpy array, Numpy array manipulation

Hands-on Exercise –

- ❖ 1. How to import numpy module
- ❖ 2. Creating array using ND-array
- ❖ 3. Calculating standard deviation on array of numbers and calculating correlation between two variables..

Scipy for scientific computing

- ❖ 6.1 Introduction to scipy, building on top of numpy
- ❖ 6.2 What are the characteristics of scipy

- ❖ 6.3 Various subpackages for scipy like Signal, Integrate, Fftpack, Cluster, Optimize, Stats and more, Bayes Theorem with scipy.

Hands-on Exercise:

- ❖ 1. Importing of scipy
- ❖ 2. Applying the Bayes theorem on the given dataset..

Data manipulation

- ❖ 7.1 What is a data Manipulation. Using Pandas library
- ❖ 7.2 Numpy dependency of Pandas library
- ❖ 7.3 Series object in pandas
- ❖ 7.4 Dataframe in Pandas
- ❖ 7.5 Loading and handling data with Pandas
- ❖ 7.6 How to merge data objects
- ❖ 7.7 Concatenation and various types of joins on data objects, exploring dataset

Hands-on Exercise –

- ❖ 1. Doing data manipulation with Pandas by handling tabular datasets that includes variable types like float, integer, double and others.
- ❖ 2. Cleaning dataset, Manipulating dataset, Visualizing dataset

Data visualization with Matplotlib

- ❖ 8.1 Introduction to Matplotlib

- ❖ 8.2 Using Matplotlib for plotting graphs and charts like Scatter, Bar, Pie, Line, Histogram and more

- ❖ 8.3 Matplotlib API

Hands-on Exercise –

- ❖ 1. Deploying Matplotlib for creating pie, scatter, line and histogram.
- ❖ 2. Subplots and Pandas built-in data visualization.

Machine Learning using Python

- ❖ 9.1 Revision of topics in Python (Pandas, Matplotlib, numpy, scikit-Learn)
- ❖ 9.2 Introduction to machine learning
- ❖ 9.3 Need of Machine learning
- ❖ 9.4 Types of machine learning and workflow of Machine Learning
- ❖ 9.5 Uses Cases in Machine Learning, its various algorithms
- ❖ 9.6 What is supervised learning
- ❖ 9.7 What is Unsupervised Learning

Hands-on Exercise –

- ❖ 1. Demo on ML algorithms

Supervised learning

- ❖ 10.1 What is linear regression
- ❖ 10.2 Step by step calculation of Linear Regression
- ❖ 10.3 Linear regression in Python

- ❖ 10.4 Logistic Regression
- ❖ 10.5 What is classification
- ❖ 10.6 Decision Tree, Confusion Matrix, Random Forest, Naïve Bayes classifier (Self paced), Support Vector Machine(self paced), xgboost(self paced)

Hands-on Exercise – Using Python library Scikit-Learn for coming up with Random Forest algorithm to implement supervised learning.

Unsupervised Learning

- ❖ 11.1 Introduction to unsupervised learning
- ❖ 11.2 Use cases of unsupervised learning
- ❖ 11.3 What is clustering
- ❖ 11.4 Types of clustering(self-paced)-Exclusive clustering, Overlapping Clustering, Hierarchical Clustering(self-paced)
- ❖ 11.5 What is K-means clustering
- ❖ 11.6 Step by step calculation of k-means algorithm
- ❖ 11.7 Association Rule Mining(self-paced), Market Basket Analysis(self-paced), Measures in association rule mining(self-paced)-support, confidence, lift
- ❖ 11.8 Apriori Algorithm

Hands-on Exercise –

- ❖ 1. Setting up the Jupyter notebook environment
- ❖ 2. Loading of a dataset in Jupyter
- ❖ 3. Algorithms in Scikit-Learn package for performing Machine Learning techniques and training a model to search a grid.

- ❖ 4. Practice on k-means using Scikit
- ❖ 5. Practice on Apriori

Python integration with Spark- (selfpaced)

- ❖ 12.1 Introduction to pyspark
- ❖ 12.2 Who uses pyspark, need of spark with python
- ❖ 12.3 Pyspark installation
- ❖ 12.4 Pyspark fundamentals
- ❖ 12.5 Advantage over mapreduce, pyspark
- ❖ 12.6 Use-cases pyspark and demo.

Hands-on Exercise:

- ❖ 1. Demonstrating Loops and Conditional Statements
- ❖ 2. Tuple – related operations, properties, list, etc.
- ❖ 3. List – operations, related properties
- ❖ 4. Set – properties, associated operations, dictionary – operations, related properties..

Dimensionality Reduction

- ❖ 13.1 Introduction to Dimensionality
- ❖ 13.2 Why Dimensionality Reduction
- ❖ 13.3 PCA
- ❖ 13.4 Factor Analysis
- ❖ 13.5 LDA

Hands-on Exercise –

Practice Dimensionality reduction Techniques : PCA, Factor Analysis, t-SNE, Random Forest, Forward and Backward feature

Time Series Forecasting

- ❖ 14.1 White Noise
- ❖ 14.2 AR model
- ❖ 14.3 MA model
- ❖ 14.4 ARMA model
- ❖ 14.5 ARIMA model
- ❖ 14.6 Stationarity
- ❖ 14.7 ACF & PACF

Hands-on Exercise –

- ❖ 1. Create AR model
- ❖ 2. Create MA model
- ❖ 3. Create ARMA model

Project Works

Python For Data Science Projects

Project 1 : Analyzing the Trends of COVID-19 With Python

Topics : In this project, you will use Pandas to accumulate data from multiple data files, Plotly (visualization library) to create interactive visualizations, and Facebook's Prophet library to make time series models. You will also be visualizing the prediction by combining these technologies.

Project 2 : Analyzing the Naming Trends Using Python

Topics : In this project, you will use Python Programming and Algorithms to understand the applications of data manipulation, extract files with useful data only, and concepts of data visualization. You will be required to analyze baby names by sorting out the top 100 birth counts.

Project 3 : Performing Analysis on Customer Churn Dataset

Topics : Through this project, you will be analyzing employment reliability in the telecom industry. The project will require you to work on real-time analysis of data with multiple labels, data visualization for reliability factor, visual analysis of various columns to verify, and plotting charts to substantiate the findings in total.

Project 4 : Netflix-Recommendation System

Topics : Analysis of movies dataset and recommendation of movies with respect to ratings. You will be working with the combined data of movies and their ratings, performing data analysis on various labels in the data, finding the distribution of different ratings in the dataset, and training the SVD for the prediction of the model.

Project 4: Python Web Scraping for Data Science

Topics : In this project, you will learn web scraping using Python. You will work on BeautifulSoup, web scraping libraries, common data and page format on the web, the important kinds of objects, NavigableString, the searching tree deployment, navigation options, parser, search tree, searching by CSS class, list, function, and keyword argument.

Case Studies

Case Study 1 : OOPS in Python

Topics : Creating multiple methods using OOPS. You will work on methods like "check_balance" to check the remaining balance in an account, "withdraw" to withdraw from the bank, find the distribution of different ratings in the dataset, and override the "withdraw" to ensure that the minimum balance is maintained. You will also work with Parameterization and Classes..

Case Study 2 : Working With NumPy

Topics : In this case study, you will be working with the NumPy library to solve various problems in Python. You will create 2D arrays, initialize a NumPy array of 5*5 dimensions, and perform simple arithmetic operations on the two arrays. To carry out this case study successfully, you will have to be familiar with NumPy.

Case Study 3 : Visualizing and Analyzing the Customer Churn dataset using Python

Topics : This case study will require you to analyze data by building aesthetic graphs to make better sense of the data. You will be working with the ggplot2 package, bar plots and its applications, histogram graphs for data analysis, and box-plots and outliers in them.

Case Study 4 : Building Models With the Help of Machine Learning Algorithms

Topics : You will be designing tree-based models on the 'Heart' dataset, performing real-time data manipulation on the heart dataset, data-visualization for multiple columnar data, building a tree-based model on top of the database, and designing a probabilistic classification model on the database. You will have to be familiar with ML Algorithms.

Job Assistance Program

Intellipaat is offering job assistance to all the learners who have completed the training. You should get a minimum of 60% marks in the qualifying exam to avail job assistance. Intellipaat has exclusive tie-ups with over 80 MNCs for placements.



Successfully finish the training

Get your resume updated

Start receiving interview calls

Intellipaat Alumni Working in Top Companies



Dinesh Kumar 

Solutions Consultant -Virtualization & Cloud at Microland Limited

The Intellipaat Azure AZ-100 training is in line with the new Microsoft Azure certification and the entire training is completely practical-oriented



Sarala Pandae 

Cloud Architect at Amazon

I liked the way the trainer explained Azure concepts and simplified it to help us learn and grasp all the aspects of Azure administration. Thank you Intellipaat.



Sheelam Khan 

Senior Software Developer at Shopzilla

I could easily learn Azure thanks to insightful videos from Intellipaat. Any doubts that I had was promptly clarified by the support team. Keep it up Intellipaat.

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Our Clients



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Frequently Asked Questions

Q 1. What is the criterion for availing the IntelliPaat job assistance program?

Ans. All IntelliPaat learners who have successfully completed the training post April 2017 are directly eligible for the IntelliPaat job assistance program.

Q 2. Which are the companies that I can get placed in?

Ans. We have exclusive tie-ups with MNCs like Ericsson, Cisco, Cognizant, Sony, Mu Sigma, Saint-Gobain, Standard Chartered, TCS, Genpact, Hexaware, and more. So you have the opportunity to get placed in these top global companies.

Q 3. Do I need to have prior industry experience for getting an interview call?

Ans. There is no need to have any prior industry experience for getting an interview call. In fact, the successful completion of the IntelliPaat certification training is equivalent to six months of industry experience. This is definitely an added advantage when you are attending an interview.

Q 4. If I don't get a job in the first attempt, can I get another chance?

Ans. Definitely, yes. Your resume will be in our database and we will circulate it to our MNC partners until you get a job. So there is no upper limit to the number of job interviews you can attend.

Q 5. Does IntelliPaat guarantee a job through its job assistance program?

Ans. IntelliPaat does not guarantee any job through the job assistance program. However, we will definitely offer you full assistance by circulating your resume among our affiliate partners.