

## Certificate Course in Machine Learning using Python

### Machine Learning using Python

6 Weeks / 90 Hrs. (3 Hrs. per day)

*90 Hours Online Course*

#### Objective

Machine Learning is broad and fast-growing sub-field of Artificial Intelligence. This course introduces students to the basic concepts and techniques of Machine Learning. The objective of this course is to develop the skills required for Machine Learning Technologies with use of Python to analyze data and solving ML problems like Regression, Classification, and Clustering using machine learning algorithms.

#### Prerequisite

BE / B.Tech. (Any Branch), 3-Year Diploma (Computer Science / Electronics/ IT), NIELIT O/A Level, Graduate in Science or Commerce or Statistics/Mathematics

- ✓ Candidate must have computer / laptop with Minimum 2 GB RAM
- ✓ Internet connection with good speed.

#### Certificate

Certificate will be provided to the participants, based on minimum 75% attendance and on performance (minimum 50% marks) in the online test, conducted at the end of the course.

#### How to Apply?

**Step-1:** Read the course structure & course requirements carefully.

**Step-2:** Visit the Registration portal and click on apply button.

**Step-3:** Create your login credentials and fill up all the details, see the preview and submit the form.

**Step-4:** Login with your credentials to verify the mobile number, email ID and then upload the documents, Lock the profile and Pay the Fees online, using ATM-Debit Card / Credit Card / Internet Banking / UPI etc.

#### Eligibility

#### Course Fees

Rs. 3950/- incl. GST & all other charges.

#### Methodology

- ✓ Instructor-led live classes.
- ✓ Instructor-led hands-on lab sessions.
- ✓ Content Access through e-Learning portal.
- ✓ Assessment and Certification

### Course Content

Day	Topic	Day	Topic	Day	Topic
<b>Day #01</b>	<ul style="list-style-type: none"> <li>Introduction to Machine Learning</li> <li>Applications of Machine Learning</li> <li>Types of Machine Learning</li> </ul>	<b>Day #02</b>	<ul style="list-style-type: none"> <li>Python Installation with various IDEs</li> <li>Simple Python Program</li> <li>Python Data Types</li> <li>Lists, Tuples, Dictionary in Python</li> </ul>	<b>Day #03</b>	<ul style="list-style-type: none"> <li>Python Control Structure</li> <li>Conditional Statements</li> <li>Loops in Python</li> </ul>
<b>Day #04</b>	<ul style="list-style-type: none"> <li>Python Functions</li> <li>Defining a function</li> <li>Calling a Function</li> <li>Lambda and Map Function</li> </ul>	<b>Day #05</b>	<ul style="list-style-type: none"> <li>Object Oriented Programming Concepts</li> <li>Creating Classes in Python</li> <li>Constructor</li> <li>Inheritance in Python Classes</li> </ul>	<b>Day #06</b>	<ul style="list-style-type: none"> <li>Python Modules</li> <li>Python Packages</li> <li>NumPy in Python</li> </ul>
<b>Day #07</b>	<ul style="list-style-type: none"> <li>Pandas in Python</li> </ul>	<b>Day #08</b>	<ul style="list-style-type: none"> <li>Exercises and Practice Problems in Python</li> </ul>	<b>Day #09</b>	<ul style="list-style-type: none"> <li>Exercises and Practice Problems in Python</li> </ul>
<b>Day #10</b>	<ul style="list-style-type: none"> <li>Types of Problems in Machine Learning</li> <li>Regression, Classification</li> <li>Clustering</li> </ul>	<b>Day #11</b>	<ul style="list-style-type: none"> <li>Pre-processing of data for Machine Learning</li> <li>Handling Null Values</li> <li>Data Summarization</li> </ul>	<b>Day #12</b>	<ul style="list-style-type: none"> <li>Regression Problem</li> <li>Solving First Machine Learning Problem</li> <li>Training and Testing Data</li> <li>Applying ML Algorithm: Linear Regression</li> <li>Using SkLearn Module</li> </ul>
<b>Day #13</b>	<ul style="list-style-type: none"> <li>Applying ML Algorithm: Decision Tree Regression, Random Forest Regression</li> <li>Performance Evaluation of ML Model</li> <li>Deployment of Machine Learning Model</li> </ul>	<b>Day #14</b>	<ul style="list-style-type: none"> <li>Classification Problem</li> <li>Solving Classification Problem: Loan Prediction Problem (Mini Project 1)</li> <li>Handling Null Values and Categorical Data</li> </ul>	<b>Day #15</b>	<ul style="list-style-type: none"> <li>Applying ML Algorithm: Logistic Regression, Support Vector Machine, Decision Tree Classifier, K-Neighbor Classifier, Gaussian Naïve Bayes (continued from previous day)</li> </ul>
<b>Day #16</b>	<ul style="list-style-type: none"> <li>Deployment of Classification Model</li> <li>Performance Evaluation of Classification Model</li> <li>Confusion Matrix</li> </ul>	<b>Day #17</b>	<ul style="list-style-type: none"> <li>Working on Images in Python</li> </ul>	<b>Day #18</b>	<ul style="list-style-type: none"> <li>Image Classification Problem (Mini project 2)</li> <li>Making ML Model</li> <li>Evaluating Model</li> <li>Deployment of Model</li> </ul>
<b>Day #19</b>	<ul style="list-style-type: none"> <li>Text Classification</li> <li>Count Vectorizer</li> </ul>	<b>Day #20</b>	<ul style="list-style-type: none"> <li>Solving Text Classification Problem: Spam Detection (Mini Project 3)</li> <li>Making Model</li> </ul>	<b>Day #21</b>	<ul style="list-style-type: none"> <li>Solving Text Classification Problem (continued from previous day)</li> <li>Model Evaluation</li> <li>Confusion Matrix</li> </ul>
<b>Day #22</b>	<ul style="list-style-type: none"> <li>Accessing Twitter Data in Python for Sentiment analysis etc.</li> </ul>	<b>Day #23</b>	<ul style="list-style-type: none"> <li>Mathematics behind Regression Algorithms</li> </ul>	<b>Day #24</b>	<ul style="list-style-type: none"> <li>Mathematics Behind Classification Algorithm</li> <li>Purity Matrix</li> </ul>
<b>Day #25</b>	<ul style="list-style-type: none"> <li>Data Exploration and Visualization using matplotlib and seaborn modules</li> </ul>	<b>Day #26</b>	<ul style="list-style-type: none"> <li>Clustering Problem</li> <li>Making Clustering Model from Customer data (Mini Project 4)</li> <li>Applying K-Means Clustering Algorithm</li> <li>Elbow Method</li> </ul>	<b>Day #27</b>	<ul style="list-style-type: none"> <li>Feature Importance</li> <li>Correlation Matrix</li> </ul>
<b>Day #28</b>	<ul style="list-style-type: none"> <li>Ensemble Learning</li> </ul>	<b>Day #29</b>	<ul style="list-style-type: none"> <li>Questions &amp; Answer Session</li> </ul>	<b>Day #30</b>	<ul style="list-style-type: none"> <li>Final Test</li> </ul>

### Course Coordinator

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