National Institute of Electronics & Information Technology Gorakhpur – Extension Centre Lucknow
(Under Ministry of Electronics and Information Technology, Govt. of India)
http://www.nielit.gov.in/gorakhpur/

NIELIT

Digital India
Power To Empower

Certificate Course in Machine Learning using Python

Machine Learning using Python
90 Hours Online Course

6 Weeks / 90 Hrs. (3 Hrs. per day)
Timing: - 11:00 AM to 02:00 PM

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.

Eligibility

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

Prerequisite

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

Course Fees

Rs. 3800/- incl. GST & all other charges.

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.

Methodology

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

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.

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Course Content

Day	Topic	Day	Topic	Day	Topic
Day #01	• Introduction to Machine Learning • Applications of Machine Learning • Types of Machine Learning	Day #02	• Python Installation with various IDEs • Simple Python Program • Python Data Types • Lists, Tuples, Dictionary in Python	Day #03	• Python Control Structure • Conditional Statements • Loops in Python
Day #04	• Python Functions • Defining a function • Calling a Function • Lambda and Map Function	Day #05	• Object Oriented Programming Concepts • Creating Classes in Python • Constructor • Inheritance in Python Classes	Day #06	• Python Modules • Python Packages • NumPy in Python
Day #07	• Pandas in Python	Day #08	• Exercises and Practice Problems in Python	Day #09	• Exercises and Practice Problems in Python
Day #10	• Types of Problems in Machine Learning • Regression, Classification • Clustering	Day #11	• Pre-processing of data for Machine Learning • Handling Null Values • Data Summarization	Day #12	• Regression Problem • Solving First Machine Learning Problem • Training and Testing Data • Applying ML Algorithm: Linear Regression • Using SkLearn Module
Day #13	• Applying ML Algorithm: Decision Tree Regression, Random Forest Regression • Performance Evaluation of ML Model • Deployment of Machine Learning Model	Day #14	• Classification Problem • Solving Classification Problem: Loan Prediction Problem (Mini Project 1) • Handling Null Values and Categorical Data	Day #15	• Applying ML Algorithm: Logistic Regression, Support Vector Machine, Decision Tree Classifier, K-Neighbor Classifier, Gaussian Naïve Bayes (continued from previous day)
Day #16	• Deployment of Classification Model • Performance Evaluation of Classification Model • Confusion Matrix	Day #17	• Working on Images in Python	Day #18	• Image Classification Problem (Mini project 2) • Making ML Model • Evaluating Model • Deployment of Model
Day #19	• Text Classification • Count Vectorizer	Day #20	• Solving Text Classification Problem: Spam Detection (Mini Project 3) • Making Model	Day #21	• Solving Text Classification Problem (continued from previous day) • Model Evaluation • Confusion Matrix
Day #22	• Accessing Twitter Data in Python for Sentiment analysis etc.	Day #23	• Mathematics behind Regression Algorithms	Day #24	• Mathematics Behind Classification Algorithm • Purity Matrix
Day #25	• Data Exploration and Visualization using matplotlib and seaborn modules	Day #26	• Clustering Problem • Making Clustering Model from Customer data (Mini Project 4) • Applying K-Means Clustering Algorithm • Elbow Method	Day #27	• Feature Importance • Correlation Matrix
Day #28	• Ensemble Learning	Day #29	• Questions & Answer Session	Day #30	• Final Test

Course Coordinator

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