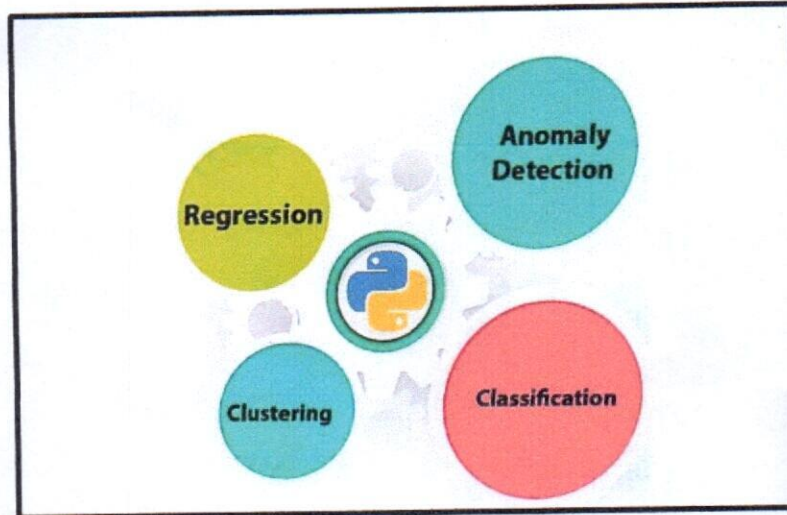


ANNEXURE 'H'

IFTM UNIVERSITY

School of Computer Science & Applications

Module for Basic Concept of Machine Learning using Python



Machine Learning with Python course focuses on giving students a serious head-start and practical approach on building deployable machine learning models by offering an in-depth understanding of the major types of machine learning algorithms, comprising of supervised, unsupervised, and reinforcement learning using the most widely used programming language. The purpose of machine learning is to discover patterns in your data and then make predictions based on often complex patterns to answer business questions, detect and analyze trends and help solve problems. Machine learning in business and other fields is effectively a method of data analysis that works by automating the process of building data models.

This course will take you from the basics of Python to exploring many different types of data. This course also will learn how to prepare data for analysis, perform simple statistical analyses, create meaningful data visualizations, predict future trends from data.

Module Objectives: This module intends to:

- ✓ Appreciate the breadth & depth of Machine Learning applications and use cases in real-world scenarios;
- ✓ Import and wrangle data using Python libraries and divide them into training and test datasets;
- ✓ Data preprocessing techniques, Univariate and Multivariate analysis, Missing values and outlier treatment etc;
- ✓ Interpret Unsupervised learning and learn to use clustering algorithms;
- ✓ Basics of Neural Networks, Perceptron;
- ✓ Build real-world solutions;

Sanjeev D. D. D.

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Focusing on the above-mentioned objectives, a teacher's ability to improve language skills can promote a positive development in students, by focusing on their competence, their tolerance to mistakes and their ability to set goals. So, the module has been designed by breaking down big tasks into easy steps and emphasizing the importance of mistakes in achieving success which can help students to avoid being overwhelmed by work or fearing failure.

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[Module Facilitator]

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Module Structure

Program Schedule: Basic Concept of Machine Learning using Python

S.NO.	OBJECTIVES	COURSE CONTENT	HOURS
1	Introduction to Machine Learning	1.1 What is Machine Learning, Basic Terminologies of Machine Learning, 1.2 Applications of ML, Difference between Data Mining and Predictive 1.3 Analysis, Tools and Techniques of Machine Learning.	7
2	Types of Machine Learning	2.1 Supervised Learning. 2.2 Unsupervised Learning. 2.3 Reinforcement Learning. 2.4 Machine Learning Lifecycle.	5
3	Python with Machine Learning	3.1 Basics of Python for Machine Learning 3.2 Python Libraries of Machine Learning 3.3 Dataset 3.4 Apply Algorithms on datasets 3.5 Result Analysis from dataset 3.6 Future Scope of Machine Learning.	6
4	Importing Datasets	4.1 Understanding the Domain 4.2 Understanding the Dataset 4.3. Python package for data science 4.4 Importing and Exporting Data in Python 4.5 Basic Insights from Datasets	6
5	Cleaning and Preparing the Data	5.1 Identify and Handle Missing Values 5.2 Data Formatting 5.3 Data Normalization Sets 5.4 Binning 5.5 Indicator variables	6
8	Review & Feedback		1

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