



Jansons Institute of Technology

Karumathampatti, Coimbatore – 641 659
Approved by AICTE and Affiliated to Anna University
An ISO 9001:2015 certified institution

Industry Readiness Course / Value Added Course
Syllabus

Department of Computer Science and Engineering DATA ANALYTICS USING PYTHON 2017 - 2018 (Even)

Course Objectives:

- To understand the basics of python.
- To implement python in data science.
- To plot graphical representations using python.

Course Outcomes:

- The student can do basic python program.
- The student learns to source python in data science.
- The student executes plots the graphs using python.

Syllabus:

Module I: Core Python

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Python Essentials (Core) – Overview of Python data types & Data objects / structures (Strings, Tuples, Lists, Dictionaries) – List and Dictionary Comprehensions – Variable & Value labels.

Date & Time Values – Basic operations – mathematical – String – date – reading and writing data – Simple plotting – Control flow & conditional statements. Hands on session.

Module II: Data Science with Python

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Introduction to data Science with python – What is Data Science? – Common terms in Analytics – Types of problems and business objectives in various industries – Overview of analytics tools & their popularity. List of steps in Analytics projects – Identify the most appropriate solution design for the given problem statement – Why Python for data science? Scientific distributions used in python for data science, numpy, scify, Pandas, cikitlearn, statmodels, nltk.

Accessing / Importing and Exporting data using python modules – Importing data from various sources (csv, txt, excel, access, etc) – Database Input (Connecting to database). Viewing data objects – Subsetting, methods – Exporting data to various formats – Important python modules: pandas. Hands on session.

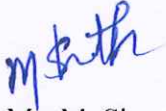
Module III: Data Analysis using Graphs

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Data Analysis – Visualization using Python – Introduction to exploratory data analysis – Descriptive statistics, Frequency Tables and summarization – Univariate analysis (Distribution of data & Graphical Analysis) – Bivariate analysis (Cross Tabs, Distributions & relationships, Graphical Analysis).

Creating Graphs (Bar / Pie / Line / Histogram / Boxplot / Scatter / Density / etc) – Important packages for exploratory analysis(NumPy Arrays, Matplotlib, seaborn, pandas and spicy statsetc). Hands on session.

Approved By



Mr. M. Sharrath
Assistant Professor / CSE

IRC / VAC Coordinator

Approved By



Mrs. A. Rathika,
Head /CSE

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