

PYTHON FOR DATA SCIENCE

COURSE CODE: MOOCCSE-A08

DURATION: 7 Weeks.

Course Prerequisites:

Beginner Level Python

Course Outcomes:

1. Working ON Python Environment (Jupyter Notebook)
2. Python operation for data analysis
3. Libraries like Numpy and Pandas
4. Data Handling
5. Data Manipulation

Course Description:

Data science can be defined as a blend of mathematics, business acumen, tools, algorithms and machine learning techniques, all of which help us in finding out the hidden insights or patterns from raw data which can be of major use in the formation of big business decisions. In this course we are going to learn data handling and manipulation methods with the help of Python.

COURSE DETAILS

MODULE 1: (Introduction Part)

TOPIC 1: (Introductory part)

Lecture 1.1: (Introduction)

Lecture 1.2: (Introduction to Jupyter Notebook)

TOPIC 2: (List and Set)

Lecture 2.1: (Revising List)

Lecture 2.2: (List and Sets)

Lecture 2.3: (More on Sets)

TOPIC 3: (Dictionaries and Tuples)

Lecture 3.1: (Intro to Dictionaries)

Lecture 3.2: (More on Dictionaries)

Lecture 3.3: (Intro to Tuples)

Lecture 3.4: (More on Tuples)

MODULE 2: (Functions and Recursion)

TOPIC 1: (Understanding Function)

Lecture 1.1: (Intro to Functions)

Lecture 1.2: (Examples using functions)

Lecture 1.3: (Type of function argument)

TOPIC 2: (Recursion)

Lecture 2.1: (Recursion in Python)

Lecture 2.2: (More examples on recursion)

Lecture 2.3: (Sorting Recursively)

MODULE 3: (While and for loops)

TOPIC 1: (Lambda Function)

Lecture 1.1: (Introduction to Lambda Functions)

Lecture 1.2: (Lambda Functions part 2)

TOPIC 2: (Datetime Module)

Lecture 2.1: (Introduction to Datetime Module)

Lecture 2.2: (Datetime Module Part 2)

TOPIC 3: (Handling TXT File)

Lecture 3.1: (R/W on txt Files)

Lecture 3.2: (Text File Handling)

MODULE 4: (Numpy and CSV files)

TOPIC 1: (All about Numpy)

Lecture 1.1: (Intro to Numpy)

Lecture 1.2: (Numpy part 1)

Lecture 1.3: (Numpy part 2)

TOPIC 2: (Handling CSV files)

Lecture 2.1: (Reading CSV files)

Lecture 2.2: (Why Pandas?)

MODULE 5: (Pandas Series and DataFrames)

TOPIC 1: (Introduction to Pandas)

Lecture 1.1: (pandas part 1)

Lecture 1.2: (pandas part 2)

TOPIC 2: (Dataframe and Series)

Lecture 2.1: (Dataframe and Series)

TOPIC 3: (Data Viewing)

Lecture 3.1: (Data Viewing Part 1)

Lecture 3.2: (Data Viewing Part 2)

MODULE 6: (Data Handling and Manipulation)

TOPIC 1: (Missing Data Management)

Lecture 1.1: (Handling Missing Data)

TOPIC 2: (Statistical Operations)

Lecture 2.1: (Descriptive Stats using pandas)

TOPIC 3: (Data Merge and Group)

Lecture 3.1: (Data Merging)

Lecture 3.2: (Data Grouping)

Lecture 3.3: (Stack in pandas)

MODULE 7: (Data Handling and Manipulation)

TOPIC 1: (Pivot Table)

Lecture 1.1: (Pivot Table and Cut function)

TOPIC 2: (Date Time in Pandas)

Lecture 2.1: (DateTime part 1)

Lecture 2.2: (DateTime part 2)

TOPIC 3: (Categoricals and Different file types)

Lecture 3.1: (Categoricals in Pandas)

Lecture 3.2: (Reading and Writing different types of Files)