



SANDIP
UNIVERSITY

SCHOOL OF COMMERCE AND MANAGEMENT SCIENCES
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Course: Data Analysis using Python										Course Code: PBA211		
Teaching Scheme (Hrs/Week)		Continuous Internal Assessment (CIA)								End Semester Examination		Total
L	T	P	C	CIA-1	CIA-2A	CIA-2B	CIA-3	T/P	Theory	T/P		
4	1	0	4	10	10	10	10	10	50	00	100	
Max. Time, End Semester Exam (Theory) -3Hrs.												

Course Objectives

- 1 To learn and understand Python programming basics and paradigm.
- 2 To learn and understand python looping, control statements and string manipulations.
- 3 To learn and understand NumPy and Array.
- 4 To learn and understand gathering and manipulating data with Pandas
- 5 To learn and understand data visualization with using Matplotlib

Course Content			
Unit No.	Module No.	Content	Hours
1.		Introduction to Python: Variables Numeric Data Types: Int & Float Sequential Types: Str & List Definite Loops: For loops If-Elif-Else Statements Data Types: Tuples Build Mortgage Calculator with Python	12
2		Advanced Python: Creating Custom Functions Indefinite Loops: while loops Data Types, Dictionary and Set Slicing Data Types Reading txt files with Python Analyze data from text and CSV file	12
3		Numerical Python & Pandas: NumPy Array Broadcasting and U-Functions Introduction to Pandas Series, DataFrame, Panel Manipulate live data from website	12

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		BOS Chairman (SOCMS)	Dean (SOCMS) Asso.Dean Registrar/ Curriculum Development

4	Data Manipulation 5 ways to create a DataFrame Slicing and Filtering DataFrame Lambda Run If and Else scenarios Gather and Manipulate Data with Pandas Analyze business data from csv files	12
5	Data Extraction & Analysis: Get live data from APIs Plot data with Matplotlib Merge and Concat Data Groupby in Pandas What if logic in Finance with Pandas	12
		Total No. of Hrs 60

Course Outcome	
Students should able to	
CO1	Define and demonstrate the use of built-in data structures “lists” and “dictionary”.
CO2	Design and implement a program to solve a real world problem.
CO3	Make database connectivity in python programming language.
CO4	Design and implement data analysis with Pandas
CO5	Design and implement data visualization

Recommended Resources	
Text Books	1. Hands-On Data Structures and Algorithms with Python — By Dr. Basant Agarwal. 2. Michael Urban and Joel Murach, Python Programming, Shrell/Murach, 2016. 3. Mark Lutz, Programming Python, O'Reilly, 4th Edition, 2010
Reference Books	1. Wes McKinney, Python For Data Analysis 2. Chris Albon Machine Learning with Python Cookbook 3. David Beazley & Brian K.Jones, Python CookBook 4. Daniel Nelson ,Data Visualization in Python 5. Introduction to Machine Learning with Python: A Guide for Data Scientists — By Andreas C. Müller and Sarah Guido

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