



R21 Regulations

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY ANANTAPUR
 (Established by Govt. of A.P., ACT No.30 of 2008)
 ANANTHAPURAMU – 515 002 (A.P) INDIA

MASTER OF COMPUTER APPLICATIONS

Course Code	EXPLORATORY DATA ANALYTICS WITH PYTHON	L	T	P	C
21F00269		1	0	2	2
Semester		II			
Course Objectives:					
<ul style="list-style-type: none"> This course is designed to teach students how to analyse different types of data using Python. Students will learn how to prepare data for analysis, perform simple statistical analysis, create meaningful data visualizations and predict future trends from data. 					
Course Outcomes (CO): Student will be able to					
<ul style="list-style-type: none"> Understanding basics of python for performing data analysis Understanding the data, performing preprocessing, processing and data visualization to get insights from data. Use different python packages for mathematical, scientific applications and for web data analysis. Develop the model for data analysis and evaluate the model performance. 					
UNIT - I		Lecture Hrs:			
Python Fundamentals for Data Analysis- Python data structures, Control statements, Functions, Object Oriented programming concepts using classes, objects and methods, Exception handling, Implementation of user-defined Modules and Package, File handling in python.					
UNIT - II		Lecture Hrs:			
Introduction to Data Understanding and Preprocessing Knowledge domains of Data Analysis, Understanding structured and unstructured data, Data Analysis process, Dataset generation, Importing Dataset: Importing and Exporting Data, Basic Insights from Datasets, Cleaning and Preparing the Data: Identify and Handle Missing Values.					
UNIT - III		Lecture Hrs:			
Data Processing and Visualization Data Formatting, Exploratory Data Analysis, Filtering and hierarchical indexing using Pandas. Data Visualization: Basic Visualization Tools, Specialized Visualization Tools, Seaborn Creating and Plotting Maps					
UNIT - IV		Lecture Hrs:			
Mathematical and Scientific applications for Data Analysis Numpy and Scipy Package, Understanding and creating N-dimensional arrays, Basic indexing and slicing, Boolean indexing, Fancy indexing, Universal functions, Data processing using arrays, File input and output with arrays.					
UNIT - V		Lecture Hrs:			
Analysing Web Data wrangling, Web scrapping, Combing and merging data sets, Reshaping and pivoting, Data transformation, String Manipulation, case study for web scrapping					
Text Books:					
1. David Ascher and Mark Lutz, Learning Python, Publisher O'Reilly Media. 2. ReemaThareja, "Python Programming using Problem Solving approach", Oxford University press 3. Wes Mckinney "Python for Data Analysis", First edition, Publisher O'Reilly Media.					
Reference Books					
1. Allen Downey ,Jeffrey Elkner ,Chris Meyers,: Learning with Python, Dreamtech Press 2. David Taieb , "Data Analysis with Python: A Modern Approach " 1st Edition, Packt Publishing					