

PROGRAM	Master of Business Administration(Business Analytics)
SEMESTER	III
COURSE TITLE	Data Science using Python
COURSE CODE	04MB0367
COURSE CREDITS	2
COURSE DURATION	28

COURSE OUTCOMES:

- ❖ Apply different data analysis modules such as NumPy, Pandas for exploring and analyzing data
- ❖ Analyze data using various visual representations and descriptive measures
- ❖ Apply text analytics tools of Python for processing text data and carrying out sentiment analysis

COURSE CONTENTS:

Unit No	Unit / Sub Unit	Sessions
I	<p>Setting up Python Data Analysis Environment Installing Anaconda , Exploring Jupyter Notebooks , Spyder</p> <p>NumPy Narray-Creating Numpy arrays , types of data, the dtype option, intrinsic creation of an array, Operations on NumPy Arrays , arithmetic operators, the matrix product, increment and decrement operators, universal functions (ufunc), aggregate functions, indexing an array, Slicing arrays, iterating an array, shape manipulation, Array manipulation- splitting and joining arrays, Reading and writing array on data files.</p> <p>Pandas Introduction to Pandas data structures, Creating series, Creating DataFrames, Adding data , Saving DataFrames , Indexing methods , Slicing a DataFrame , Arithmetic methods with DataFrames, Reading and Writing Data, I/O API tools, CSV and Textual files, Reading Data in CSV or Text Files, Writing Data in CSV, Reading and Writing Data on MS-Excel Files</p>	10
II	<p>Descriptive Analytics using Python Loading a dataset into Pandas DataFrame, Displaying records of the DataFrame, Value Counts and Cross Tabulations, Sorting values by columns, Creating New Columns, Filtering Records Based on Conditions, Summary measures</p> <p>Exploration of data using visualization (Using Matplotlib library), Bar chart, Histogram, Distribution or Density Plot, Box Plot, scatter plot, pair plot, correlation and heat map</p>	8
III	<p>Text Analytics using Python Overview, Sentiment Classification, Loading a Dataset for Sentiment analysis, Exploring the dataset, Text Pre-processing, Bag of Words (BoW) Model, Creating Count Vectors for Sentiment, Displaying document vectors, Removing Low-frequency words, Removing Stop words, Distribution of words across different sentiments, Naïve Bayes model for sentiment classification, Finding model accuracy, Challenges of Text-analytics, Building the model using n-Grams</p>	10

EVALUATION:

The students will be evaluated on a continuous basis and broadly follow the scheme given below:

	Component	Weightage
A	Continuous Evaluation Component (Assignments / Presentations/ Quizzes / Class Participation/ etc.)	20% (C.E.C.)
B	Internal Assessment (MCQ)	30% (I.A.)
C	End-Semester Practical Examination	50% (External Assessment)

SUGGESTED READINGS:**Text Books:**

Sr. No	Author/s	Name of the Book	Publisher	Edition and Year
T-01	Fabio Nelli	Python Data Analytics : With Pandas, NumPy, and Matplotlib	APRESS	2 nd Edition, 2018
T-02	Manoranjan Pradhan, U Dinesh Kumar	Machine Learning using Python	Wiley Publications	1 st Edition, 2019

Reference Books:

Sr. No	Author/s	Name of the Book	Publisher	Edition and Year
R-01	Martin C. Brown	The Complete Reference Python	McGraw Hill	1st Edition, 2018.
R-02	Wes McKinney	Python for Data Analysis	O'Reilly Media, Inc.,	2nd Edition, 2017.
R-03	Nischay Kumar Hegde	Python Programming Fundamentals	Educreation	1st Edition, 2018.