

**Department of Mathematics**

**Value-Added Course**

**VACMAFD22 - FUNDAMENTALS OF DATA ANALYTICS**

<b>Code</b>	<b>Title of The Paper</b>	<b>Hours</b>
VACMAFD22	Fundamentals of Data Analytics	30

**Course Learning Outcomes:**

To help the students rekindle their critical thinking and widen their knowledge of data analytics.

**Unit 1 - Working with Data (6 hours)**

Introduction - Working with Data - The OSEMN Framework - Obtaining Data - Scrubbing Data - Exploring Data - Modelling Data -Interpreting Data

**Unit 2 - Python for Data Analysis (6 hours)**

Introduction - Python for Data Analysis - Data and Data Formats - Myths of Programming

**Unit 3 - Variables and data Structures in Python (6 hours)**

Introduction to Python: Variables Part 1 - Introduction to Python: Variables Part 2  
Introduction to Python: Variables Part 3 - Introduction to Python: Data Structures

**Unit 4 - Conditional Statements and Functions in Python (6 hours)**

Introduction to Python: Conditional Statements – Iteration - A Simple Marketing Analysis with Example - Functions in Python - Built In Functions - Function Writing

**Unit 5 - Data Cleaning and Processing (6 hours)**

Introduction: Data Cleaning and Processing - Working with Data in Spread sheets - Number - Formats and Sorting in Google Sheets - Filtering Data with Google Sheets - Functions in Google Sheets - Data Visualization in Google Sheets

**Book for Study:**

Rudolf Mathar, Gholamreza Alirezaei, Emilio Balda, Arash Behboodi - Fundamentals of Data Analytics \_ With a View to Machine Learning-Springer International Publishing\_Springer (2020)

**Book for Reference:**

LjubomirPerkovic, “Introduction to computing using Python”, 2<sup>nd</sup> Edition, John Wiley & Sons, 2012.

**ASSESSMENT METHOD**

A Practical Examination of two hours duration for 50 marks will be conducted at the end of the course.