

Department of Computer Science (SF)

Value Added Course

23UCS4VA – PYTHON FOR DATA ANALYTICS

Course Objective

To introduce the concepts of python programming constructs

Course Outcomes (CO)

At the end of this course, students should be able to:

1. Apply the concept of Decision making statements, looping constructs , functions for solving basic programs
2. Analyze the concepts of Lists, tuples and error handling mechanisms
3. Evaluate a program incorporating all the python language constructs

Syllabus

Unit I

(5 Hours)

Introduction to Python and Data Analytics: Overview of Python as a programming language - Introduction to Data Analytics and its significance - Setting up Python environment (Anaconda, Jupyter Notebook)

Unit II

(3 Hours)

Python Basics for Data Analytics: Variables, Data Types, and Basic Operations – Lists, Tuples, and Dictionaries - Control Structures (if, else, loops)

Unit III

(2 Hours)

Data Manipulation with Pandas : Introduction to Pandas library for data manipulation - Loading and exploring data – Data indexing, slicing, and filtering

SET A

- Write a python program that displays the following information: Yourname, Full address Mobile number, College name, Course subjects.
- Write a python program to find the largest three integers using if-else and conditional operator
- Write a python program that asks the user to enter a series of positive numbers (The user should enter a negative number to signal the end of the series) and the program should display the numbers in order and their sum.

SET B

- Write a python program to find the product of two matrices [A]mxp and [B]pxr
- Write recursive functions for GCD of two integers.
- Write recursive functions for the factorial of positive integer.
- Write recursive functions for Fibonacci Sequence up to given number n.
- Write recursive functions to display prime number from 2 to n.
- Write a python program that writes a series of random numbers to a file from 1 to n and display.
- Write a python program to sort a given sequence: String, List and Tuple.

Text Books:

1. Wes McKinney, Python for Data Analysis: Data Wrangling with pandas, NumPy, and Jupyter, 3rd Edition, 2022
2. Jake VanderPlas, "Python for Data Science Handbook", O'Reilly Media, 1st Edition, 2016

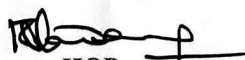
Reference Books:

1. Curtis Miller, "Hands-On Data Analysis with NumPy and Pandas", Packet Publishing, 2nd Edition, 2018

Website References:

1. <https://docs.python.org/3/>
2. <https://pandas.pydata.org/docs/whatsnew/index.html>
3. <https://www.geeksforgeeks.org/data-analysis-with-python/>


Course Co-ordinators


HOD


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Department of Computer Science (SF)

Value Added Course

23UCS2VA – CLOUD BASED OFFICE AUTOMATION

Course Objective

Provide students with a foundational understanding of cloud computing concepts, including cloud services, deployment models, and their significance in office automation.

Course Outcomes (CO)

At the end of this course, students should be able to:

1. Understand how to create a Google Workspace account
2. Get familiar with Google Workspace and its applications
3. Learn in-demand skills of Google Workspace
4. Knowledge about how to properly assign, manage and evaluate students through Google Hangouts

Syllabus

Unit I

(5 Hours)

Google Drive: Managing files - Creating and managing folders - Uploading folders from hard drive - Locating files - Changing display and settings - Sharing files and folders - Sharing notifications, Publish to web. **Google Hangouts Meet:** Scheduling a Hangout - Launching a Hangout - Presenting your screen in a Hangout - Managing sound, video and bandwidth - Managing meetings with Hangouts

Unit II

(3 Hours)

Working in Docs: Setting up pages - Inserting non-text elements - Changing text attributes - Formatting text blocks - Using content management tools - Inserting and editing tables - Collaborating and sharing in Docs - Download. **Working in Sheets:** Managing values, rows, cells, or columns - Formatting sheets and cells - Inserting non-text elements - Using functions - Managing and transforming data - Collaborating and sharing in Sheets - Importing and converting from other file types

Unit III

(2 Hours)

Working in Slides: Building a presentation - Working with text - Working with non-text elements - Arranging objects - Sharing a presentation. **Google Forms:** Create custom forms -

Create quizzes - Analyze responses - View Individual Responses - Certificate Generation using Certify'em

(20 Hours)

List of Exercises

- Calendar: Create and manage events
- Docs: Create and manage comments and action items, set preference suit your work style, and use the Google Docs Explore tool.
- Drive: Organize, protect, and share files.
- Gmail: Compose, send, and reply to messages.
- Meet & Chat : Manage video meetings and collaborate using instant messages
- Sheets: Create and edit spreadsheets directly in your browser—no other software is required.
- Sheets Advanced Topic: Apply themes and conditional formatting, and use advanced formulas and functions •
- Slides: Create and collaborate on professional presentations for proposals, sales, marketing, or training • Form: To create online forms and surveys with multiple question types.

Text Books:

1. Kasey Bell, "Google from A to Z: The Google Glossary for Teachers", Shake Up Learning LLC, 30 October 2020.
2. Carty Binn, "Mastering Google Workspace: A Step-By-Step Practical Guide to Using Google Workspace Apps Efficiently for Cloud Computing & Real-time Collaboration", Kindle Edition, 29 March 2022.

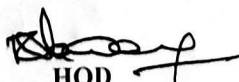
Reference Books:

1. Ilse Hartsell, "Google Workspace: Learn About the Most Popular Google Apps For Home And Small Business Users", Kindle Edition, 11 November 2022.

Website References:

1. <https://edu.gcfglobal.org/en/googledriveanddocs/#>
2. <https://support.google.com/drive/answer/2424384?hl=en&co=GENIE.Platform%3DDesktop>
3. <https://support.google.com/a/users/answer/9282664?hl=en>


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