





SYLLABUS

Session	Course Contents	
Session 1	Module 1:	
	Introduction to Python Overview of Python and its popularity	
	Advantages of using Python	
	Module 2: Applications of Python	
Session 2	Real-world applications of Python.	
	AI/ML and data visualization	
	Software development	
	Module 3:	
	Python and its Features Introduction to Python's key features:	
Session 3	Object-oriented programming Interpreted language High-level	
	programming Dynamic semantics Built-in data structures Automatic	
	garbage collection	
	Module 4: Python Built-in Data Types and Operators Detailed	
Session 4	explanation of Python's built-in data types: Boolean Text Numeric	
	List, Tuple, Dictionary, Set, Bytes Overview of Python operators and	
	tokens	
	Module 5: Packages Overview Understanding Python packages and	
	modules Overview of essential packages:	
	NumPy	
Session 5	Pandas	
56551011 5	Scikit Learn	
	Matplotlib	
	Seaborn	
	Module 6: Installation Steps and Jupyter Notebook Introduction to	
Session 6	Python IDEs and their importance Overview of Python installation	
	steps Introduction to Anaconda distribution and its features	





Anaconda Navigator overview Introduction to Jupyter Notebook	
and its functionalities Essential shortcuts for using Jupyter	
Notebook effectively	

SCHEDULE

Session	Content	Time	Date
Session	Introduction to Python	3:00	27-04-2023
	 Welcome and Introduction Why Python? Setting Up Python Python Basics Variables and Data Types Basic Operations Strings 	pm- 5:00 pm	
	8.Loops 9.Functions 10.Hands-On Exercises		
S2	Advantages of Python	3:00 pm-	01-05-2023
	 Readability and Simplicity Extensive Standard Library flexibility and Versatility Rapid Development Community and Ecosystem Integration and Interoperability Hands-On Demonstration Case Studies 	5:00 pm	
S 3	Application of Python	3:00 pm- 5:00 pm	03-05-2023
S4	Real-world applications of Python	3:00 pm- 5:00 pm	05-05-2023
\$5	AI/ML and data visualization	3:00 pm- 5:00 pm	08-05-2023



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S6	Software development	3:00 pm- 5:00 pm	10-05-2023
S7	Python and its Features Introduction to Python's key features: Object-oriented programming	3:00 pm- 5:00 pm	15-05-2023
S8	Interpreted language. High-level programming.	3:00 pm- 5:00 pm	18-05-2023
S9	Dynamic semantics Built-in data structures Automatic garbage collection	3:00 pm- 5:00 pm	22-05-2023
S10	Python Built-in Data Types and OperatorsDetailed explanation of Python's built-in data types: BooleanText.Numeric List,Tuple,	3:00 pm- 5:00 pm	23-05-2023
S11	Dictionary, Set, Bytes Overview of Python operators and tokens	3:00 pm- 5:00 pm	24-05-2023
S12	Packages Overview Understanding Python	3:00 pm- 5:00	26-05-2023





	packages and modules	pm	
S13	Overview of essential	3:00	29-05-2023
	packages:	pm- 5:00	
	Numpy	pm	
	Pandas	-	
	Scikit Learn		
	Matplotlib		
S14	Installation Steps and	3:00	30-05-2023
	Jupyter Notebook	pm-	
	Introduction to	5:00	
	• Python IDEs and their	pm	
	importance		
	 Overview of Python installation steps 		
	installation steps		
S15	Introduction to	3:00	02-06-2023
	Anaconda distribution	pm-	
	and its features	5:00	
	 Anaconda Navigator overview 	pm	
	Introduction to		
	Jupyter Notebook and		
	its functionalitiesEssential shortcuts for		
	using Jupyter		
	Notebook effectively		





PROFILE OF THE RESOURCE PERSON

MS. ANURADHA YADAV, Data Analytics Trainer

EDUCATIONAL QUALIFICATION

B.Tech in INFORMATION TECHNOLOGY from PurvanchalUniversity.Working as Assistant Professor in MANGALMAY INSTITUTE OF ENGINEERING AND TECHNOLOGY

- ERP CO-Coordinator and IT CLUB Member.
- 6 month of Experience as Assistant professor in GNIOT.
- Working as a **placement coordinator** from IT Department.
- Active member of ALUMNI Coordinator.
- Assisting with various department activities.
- Attending faculty and departmental meetings and providing suggestions for improvement.
- Teaching and supervising undergraduate student.
- 2 Year of experience in Prasad institutions in Lucknow
- Attend International conference on "c#" organized by SHARK IN DELHI.
- <u>3</u> Month training experience on **ASP**.**NET** framework and database as **SQL** server.
- <u>2</u> Month learning course on **Python**
- Have good knowledge on writing SQL queries to pull the reports from the DB.
- Expertise in developing **courier Portal** web application using .**NET Framework**, **java script**, **HTML** and database using SQL server.
- Have been involved in the entire project life cycle starting from requirement gathering to implementation.
- Experienced interacting directly with customers on numerous occasions; to gather requirements, develop, debug and solve critical issues and introduce them to new product feature.





	Report
Name of Activity	Add ON Certificate ON Data Analysis and Interpretation through Python
Date	27 th April 2023 – 02 nd June 2023
Venue	Computer Lab, MIMT
Organized by	Management Department
Participation by	BBA I Year students (100)
Resource Person	Ms. AnuradhaYadav, Data Analytics Trainer.
Activity Convener	Ms. Shakti Shukla & Ms. SonaliChauhan(MIMT Faculty)
Objective	The objective of this activity is to make the students understand Your Data : Python allows you to explore and understand your data better. By using libraries like Pandas, you can clean messy data, handle missing values, and format it in a way that makes sense. Visualize Your Findings : Python offers libraries like Matplotlib and Seaborn to create cool graphs and plots. These visuals help you see trends and patterns in your data more easily. It's like turning boring numbers into colorful pictures! Answer Interesting Questions : With Python, you can dive into your data to find answers. Want to know which factors affect student grades the most? Or how different study habits impact exam scores? Python lets you ask these questions and find the answers in your data. Predictive Superpowers : Using Python's machine learning libraries like Scikit-learn, you can build models that predict future outcomes. Imagine predicting the next test score based on previous performance, or whether a student will pass a course based on their study habits. It's like having a crystal ball for your data! Tell a Story with Data : Python helps you craft a story with your data. You can create reports and presentations using Jupyter Notebooks or other tools. It's not just about crunching numbers; it's about sharing your discoveries in a way that others can understand and learn from. Get Job-Ready Skills : Learning data analysis with Python is a valuable skill for many careers. Whether you're interested in science, business, social sciences, or technology, being able to analyze data sets you apart. Plus, Python is widely used in the industry, so it's a great skill to have on your resume! Have Fun with Data : Lastly, Python makes data analysis fun! It's like solving puzzles or uncovering secrets in your data. You can explore topics you're curious about, like sports stats, social media trends, or even your own school performance. So, the objective of learning data analysis and interpretation through Python is not just about numbers and c
Content	Python is the most effective tool for managing and analyzing data of all kinds. Its increasing use in several management functional areas is generally recognized. This dynamic tool provides several options for not only making the task easier, but also for improving the sophistication of data reporting and analysis.
	This Certificate Course was the initiative taken under the aegis of IQAC, Mangalmay Institute of Management and Technology, for





undergraduate students.

The programme extended for a period of 16 days, covering two hours per day (theory and practical -1hour each)

Topics covered under the program are as follows:

Day 1

The resource person had an introductory session based on the overview of the python, where he discussed how such programs always give an edge to the students when it comes to working in the corporate world. Knowledge of python has become the essential part of every business and job.

Introduction to Python1. Welcome and Introduction 2. Why Python?

3. Setting Up Python4. Python Basics5.Variables and Data Types6.Basic

Operations 7. Strings 8. Loops 9. Functions 10. Hands-On Exercises

Day 2

Advantages of Python1.Readability and Simplicity 2.Extensive Standard Library 3.flexibility and Versatility 4. Rapid Development5. Community and Ecosystem6. Integration and Interoperability7. Hands-On Demonstration8. Case Studies.

Day 3 & 4.

- Application of Python.
- Real-World Application of Python

Day 5& 6.

- AI/ML and data visualization
- Software development

Day 7- Python and its Features

- Introduction to Python's key features:
- Object-oriented programming

Day 8 –

- Interpreted language.
- High-level programming

Day 9-

- Dynamic semantics Built-in data structures
- Automatic garbage collection





Day 10- Python Built-in Data Types and Operators

- Detailed explanation of Python's built-in data types:
- Boolean
- Text.
- Numeric List,
- Tuple,

Day 11-

- Dictionary,
- Set,
- Bytes Overview of Python operators and tokens

Day 12- Packages Overview

- Understanding Python
- packages and modules

Day 13- Overview of essential packages:

- Numpy
- Pandas
- Scikit Learn
- Matplotlib

Day 14-

Installation Steps and Jupyter Notebook

- Introduction to Python IDEs and their importance
- Overview of Python installation steps

Day 15-

 Introduction to Anaconda distribution and its features
Anaconda Navigator overview.
 Introduction to Jupyter Notebook and its functionalities

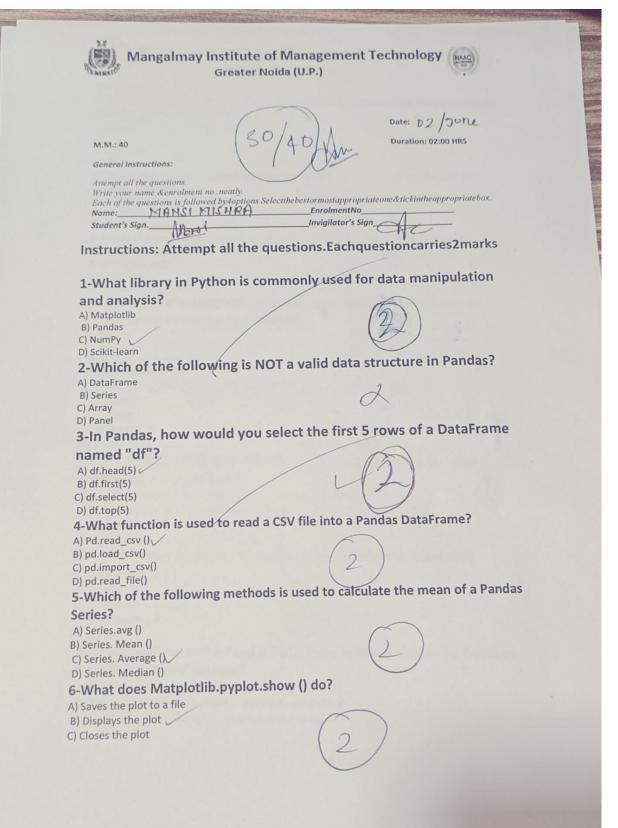
- Essential shortcuts for using Jupyter Notebook effectively
- Assessment At the end of the Data Analysis and Interpretation through Python



	
	program there was an assignment to assess the understanding level of the students. Students were assessed on the basis of the projects assigned to them. Projects assigned to the students: Western Inventory.txt
	07_01 Challenge.xlsx
Outcome of	After undergoing the aforementioned programme, students were able
Activity	to reap the following benefits:
	 Automatic computation to cells with formulas Instead of performing the computation manually, the Python can help students with their computational ease. Python can support decisions by coding conditional statements like IF, IF-ELSE statements inside the cell. Python supports numbers of columns and rows which can contain large amount of data and computations. Hence students will be able to analyse large amount of data through Data Analytics.
	At the end of Data Analysis and Interpretation through Python the program, students were able to understand the basic and advanced concepts of Python along with its practical applications. They were assessed on the basis of their theoretical and practical knowledge at the end of the session. Students received the certificates after the successful completion of their Data Analysis and Interpretation program through Python







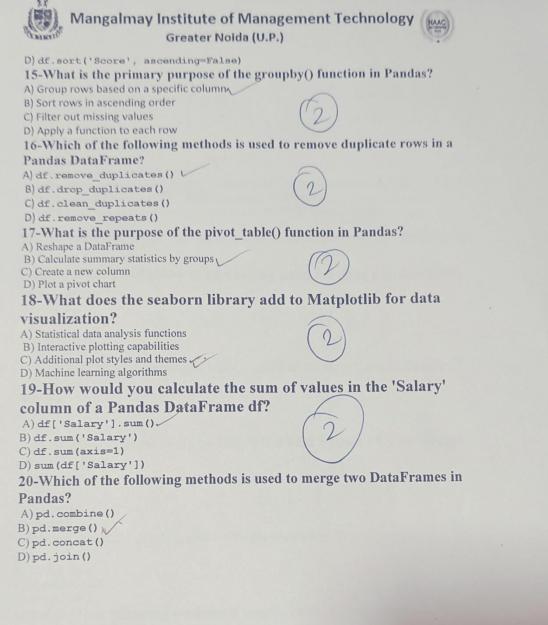


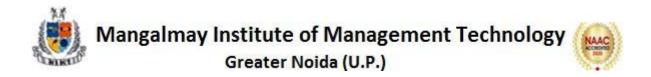


Mangalmay Institute of Management Technology Greater Noida (U.P.) D) Plots the data 7-Which library is best suited for creating interactive visualizations A) Pandas B) Seaborn C) Matplotlib D) Plotly 8-What function is used to merge two DataFrames in Pandas? B) pd.merge() C) pd.concat() D) pd.join() 9-How do you handle missing values in a Pandas DataFrame? A) df.handle_missing() B) df.remove_na() C) df.fillna() D) df.dropna() 10-Which of the following is a statistical measure of the linear relationship between two variables? A) p-value B) R-squared C) Standard deviation D) Mean absolute error 11.What function is used to plot a histogram in Matplotlib? A) plt.plot() B) plt.bar() C) plt.hist() D) plt.scatter() 12-In Pandas, what does the describe () function do when applied to a DataFrame? A) Returns the summary statistics of numerical columns B) Describes the structure of the DataFrame C) Counts the missing values in the DataFrame D) Plots a visual summary of the data 13-Which library provides the seaborn package for statistical data visualization? A) Pandas B) Matplotlib C) Scikit-learn D) NumPy 14-How would you sort a Pandas DataFrame in descending order based on values in the 'Score' column? A) df.sort('Score', ascending=True) B) df.sort_values('Score', ascending=False) C) df.order_by('Score', ascending=False)







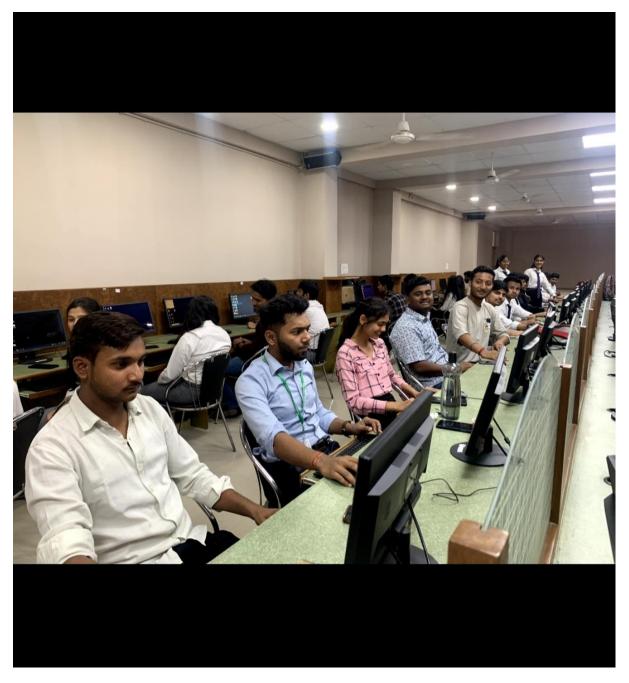


Glimpses of the Python Certification Program:

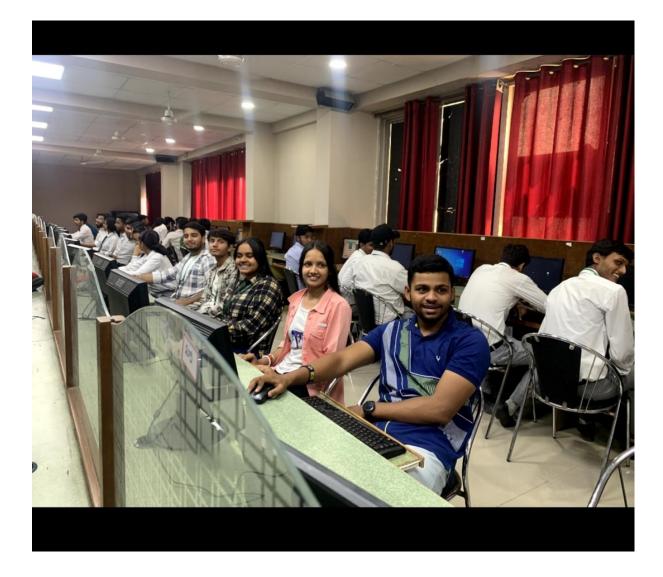
Introductory session of the Python program.











Students working on python in Computer Lab





