माधव प्रौद्योगिकी एवं विज्ञान संस्थान, ग्वालियर
MADHAV INSTITUTE OF TECHNOLOGY & SCIENCE, GWALIOR
Deemed to be University
(Declared under Distinct Category by Ministry of Education, Government of India)
NAAC ACCREDITED WITH A++ Grade
Gola Ka Mandir, Gwalior (M.P.)- 474005, INDIA
Ph.:+91-751-2409300, E-mail: director@mitsgwalior.in, Website: www.mitsgwalior.in

Date: 21st November 2025

ACTIVITY REPORT

Title of Workshop:	"PYTHON ESSENTIAL FOR ENGINEERING APPLICATIONS"
Duration of activity:	21-22 NOVEMBER 2025
Number of participants:	CSE (53), CSD (44), **Total: 97**
Brief Description of the activity:	The Department organized a two-day Python Programming Workshop to enhance the programming skills of students and to introduce them to the practical applications of Python in modern computing. The workshop was conducted in three sessions spread across two days, and each session focused on gradually building the students' understanding of Python through theory, demonstrations, and hands-on practice. In the first half, the workshop began with the introductory session where students were familiarized with the fundamentals of Python programming. The resource person explained the importance of Python in various fields such as data science, artificial intelligence, automation, and application development. Participants were guided through the installation process, the use of an IDE, and the basic structure of Python programs. Concepts such as variables, data types, operators, and simple input-output statements were demonstrated, which helped students gain confidence in writing their first Python code.. In the second half, session focused on essential programming concepts including conditional statements, loops, and functions. Demonstrations were provided to explain how to design programs

	using decision-making structures and repetitive tasks. The trainer also guided students on writing user-defined functions and modular programs. Practical examples and small coding exercises were given to ensure that students could implement the concepts independently. The final session covered slightly advanced Python topics such as lists, tuples, dictionaries, and file handling. Students practiced solving real-time problems using Python scripts. The trainer also introduced basic error handling and best programming practices. The session concluded with a hands-on activity where participants wrote and executed small projects, boosting their confidence in coding. Overall, the workshop aimed to strengthen both the academic writing skills and value-based understanding of students, ensuring their holistic development in the first year of engineering. The contents delivered during the workshop by experts are described briefly as: • First half: The first day commenced with an introductory session that laid the foundation for understanding the Python programming language. The resource person began by explaining why Python has become one of the most preferred languages globally. Its simplicity, readability, and versatility across fields such as artificial intelligence, machine learning, data analysis, automation, web development, and scientific computing were discussed in detail. The trainer also introduced students to the Python environment, explaining how a Python interpreter works, how to install Python, and how to use an IDE effectively. Basic syntactical rules were covered, along with the structure of a Python program. Students were taught fundamental concepts such as variables, identifiers, keywords, constants, data types, operators, indentation rules, and basic input-output functions. The explanations were accompanied by practical examples, enabling students to write simple programs immediately. This foundational session ensured that every participant—regardless of previous experience—could follow the upcoming sessions confidently. • Second half: The second session on Day 1 progressed into core programming constructs that form the essential building blocks of Python programming. The trainer introduced the

	concept of decision-making using conditional statements such as if, elif, and else. Real-life examples were used to illustrate how computers make logical decisions based on defined conditions. Following this, the concept of loops was explained in depth. Students were introduced to the working principles of the for loop and while loop, along with range functions. The trainer explained how loops help automate repetitive tasks, reduce effort, and make programs more efficient. The session also provided a detailed explanation of functions—how they are defined, how parameters and return values work, the difference between built-in and user-defined functions, and why modular programming is important for large projects. The resource person demonstrated several programs step-by-step, and students practiced them simultaneously. By the end of this session, participants gained a clear understanding of how to design structured, logical, and reusable programs. • Third Half : The second day of the workshop featured the third and final session, which focused on advanced concepts and practical implementation. The trainer introduced students to Python's built-in data structures: lists, tuples, sets, and dictionaries. Each data structure was explained thoroughly, covering its characteristics, uses, advantages, and common operations. Students learned how to store collections of data, modify them, and retrieve information through indexing, slicing, and looping techniques. This was followed by a detailed explanation of file handling operations, where students learned how Python interacts with external files for reading, writing, and appending data. Topics such as file modes, handling text files, closing files, and managing file paths were also covered carefully.
Name of the Coordinators:	• Dr. Rahul Dubey • Dr. Dheeraj Kumar Dixit
Name of the Speaker:	• Dr. Rahul Dubey

Objectives of the activity:	• To provide students with a strong foundation in Python programming, including basic syntax, data types, control structures, and functions. • To enhance logical thinking and problem-solving skills through hands-on practice, coding demonstrations, and real-time program execution. • To introduce students to practical applications of Python, including data structures, file handling, and basic error management, enabling them to confidently apply Python in academic and project work.
Outcomes of the activity:	After completing the workshop, the students were able to: • Students developed a strong foundational understanding of Python programming concepts, including syntax, data types, control structures, functions, and basic program logic. They gained the ability to read, interpret, and write simple to intermediate-level Python programs with clarity and confidence. • Participants significantly improved their logical thinking, analytical skills, and problem-solving abilities through continuous hands-on coding practice. They learned to design solutions, debug errors, implement algorithms, and apply programming concepts effectively in real-time scenarios. • Students gained practical exposure to Python's applications in real-world contexts, such as working with data structures, file handling, and understanding Python's role in fields like data science, automation, and software development. This prepared them to apply Python confidently in academic assignments, technical projects, and future learning pursuits.
Mode of the activity:	Offline in **SH-7**(Main Academic Block) , 1st floor.

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Workshop Schedule: Indian Constitution and Traditional Knowledge

Date	Session Contents	
21ST November 2025 (Friday)	2:00 PM – 2:30 PM	Students Registration, Inauguration, and Welcome
	2:30 PM – 2:45 PM	Student Address by Dr. R. S. Jadon (Dean) and Dr. Manish Dixit (HOD, CSE)
	2:45 PM – 5:15PM	Session-1
Date	Session Contents	
22nd November 2025 (Saturday)	11:30 AM - 1:00 Noon	Session 1.
	1:00 Noon - 2:00 PM	Lunch Break
	2:10 PM - 5:00 PM	Session 2

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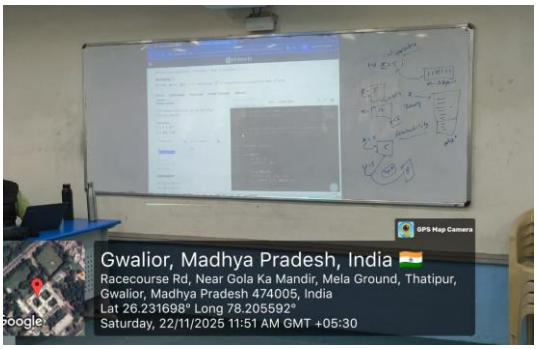
Some Glimpses of the Activity:



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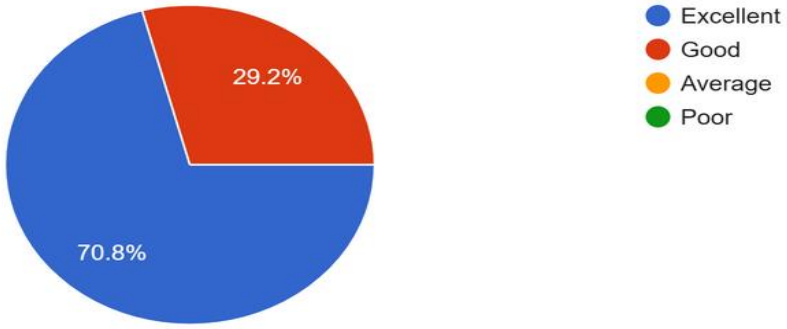
Feedback

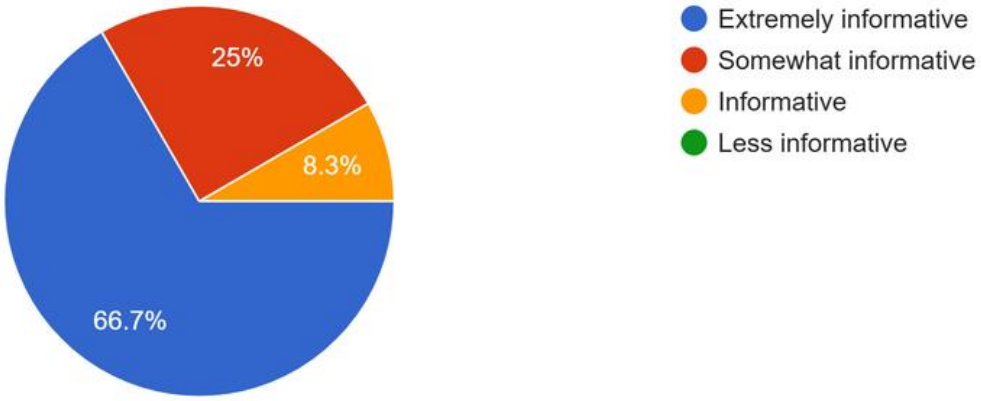
How would you rate the overall workshop experience?

24 responses



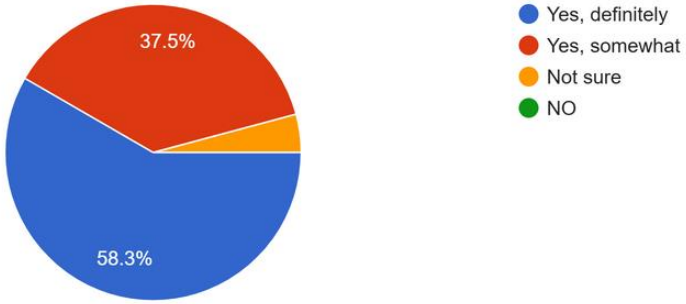
How informative did you find this session?

24 responses



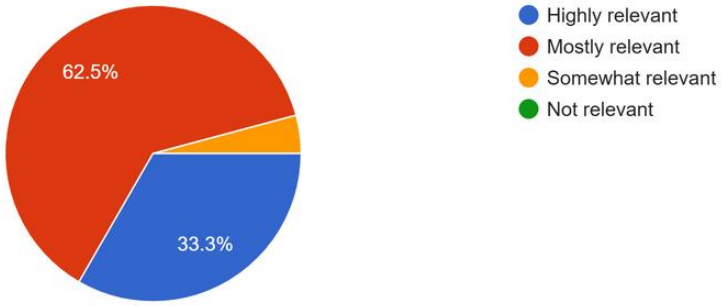
Do you feel more confident in writing Python code after the workshop?

24 responses



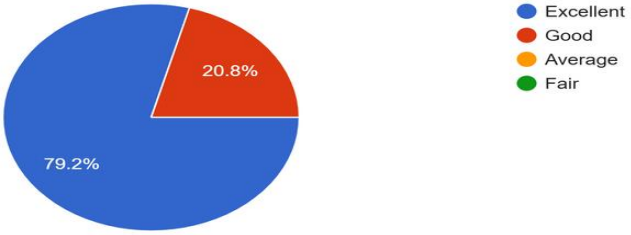
Was the workshop content relevant to your learning needs?

24 responses



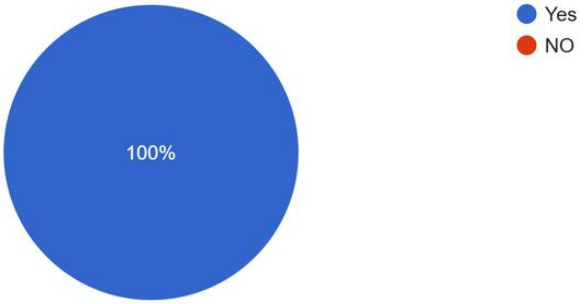
How would you rate the performance of the instructor?

24 responses



Are you interested in attending future advance Python workshops?

24 responses



Overall Feedback / Suggestions:

What improvement would you suggest for future workshop?

24 responses

- Good
- Industrial problem solving
- Nothing,it's excellent.
- It was a wonderful workshop, would love to attend future workshops
- It was good
- -
- none
- In workshop many students creat many disturbance
- None

In workshop many students creat many disturbance

None

Having quiz inbetween the topics

Problem solving for every concept

Just, let everyone know about it and apart from cse and it other branches also should able to attend. Overall workshop is amazing and very helpful 😊 😊

Nothing all well

It was a great workshop learned some of new concepts and improved the overall way of seeing how actually python works

Teaching pace was slow and all topics could not be covered

Overall the workshop is very good and effective

Maybe a different batch for newbie and who had worked on it before

There should be more time required to cover some more topics and questions for better understanding.

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A structured approach and a well defined roadmap could've been more helpful.

Excellent

Nothing to say!!

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Attendance

Madhav Institute of Technology and Science

Python Essentials for Engineering Applications

Department of Computer Science and Engineering

Faculty: Dr. Rahul Dubey & Dr. Dheeraj Dixit

Sno	Name	Roll No.	21/11/2025 Session 1	21/11/2025 Session 2	22/11/2025 Session 1	22/11/2025 Session 2
1	Pranek Singh	BTAI23O1100				
2	SHIVANSH SAHU	BTAI25O1131				
3	Mayank Singh	BTAM25O1043				
4	Khushi Patel	BTCD24O1071				
5	Adya Acharya	BTCD25O1008				
6	Aman Rajput	BTCD25O1013	Aman			
7	Amit singh	BTCD25O1015				
8	Anay Shivhare	BTCD25O1017				
9	Anav Choudary	BTCD25O1029				
10	Bharat Mehta	BTCD25O1035				
11	Chitranshi sahu	BTCD25O1040				
12	Daksh soni	BTCD25O1042				
13	Devansh Sahu	BTCD25O1043				
14	Hariom kushwah	BTCD25O1052				
15	Harshvardhan Rawat	BTCD25O1058				
16	Jayshri Khadgawat	BTCD25O1061				
17	Kartik sodhi	BTCD25O1065				
18	KASHISH GURJAR	BTCD25O1068				
19	Khushboo Chourasiya	BTCD25O1070				
20	Khushi Patel	BTCD25O1071				
21	Krishna Sharma	BTCD25O1072				
22	Lavi Barya	BTCD25O1076				
23	Manya Verma	BTCD25O1079				
24	Monlly acharya	BTCD25O1084				
25	Pawan verma	BTCD25O1092				
26	Prashant Agrawal	BTCD25O1100				
27	Ridhima Sahu	BTCD25O1108				
28	Rishabh Patel	BTCD25O1109				
29	Satvik Shrivastava	BTCD25O1121				
30	Saurabh Jain	BTCD25O1122				
31	Shreyansh	BTCD25O1130				
32	Srijan Keshri	BTCD25O1134				
33	Sumit Kumar Ahirwar	BTCD25O1138				
34	Vaishnavi Shivhare	BTCD25O1147				
35	Yash Panse	BTCD25O1154				
36	Deependra Singh Solanki	BTCE25O1043				

S.No.	Name	Roll No.	21/11/2025 Session 1	21/11/2025 Session 2	22/11/2025 Session 1	22/11/2025 Session 2
79	Aliza khan	Btet25a1011	[signature]	[signature]	[signature]	[signature]
80	Raghunandan sharma	BTET25O1105				
81	Ayush Rajawat	BTIO25O1039	[signature]			
82	Kunal Gupta	BTIO25O1074	Kunal			
83	Lakshya Rathore	BTMC25O1065				
84	Shiv Pratap Singh	BTMC25O1127	Shiv	Shiv	Shiv	Shiv
85	Manshi Gupta	BTCD2501077	Manshi	Manshi	Manshi	Manshi
86	Gaurav Arya	BTCD2501046	Gaurav	Gaurav	Gaurav	Gaurav
87.	Aarush Saxena	BTCS2501001	Aarush	Aarush	Aarush	Aarush
88.	Ritik Singhal	BTCD2501114	Singhal			
89.	Rahul Singh	BTCD2501105	Rahul			
90.	Prince Sandilya	BTCD2501103	Prince		Prince	
91.	Meet Bisen	BTCD2501082	Meet		Meet	
92.	Anuj yadav	BTCD2501024	Anuj	Anuj	Anuj	Anuj
93.	Satish Patel	BTCD2501120	Satish			
94	Eshanya Bhaiji	BTCS2501058	Eshanya	Eshanya	Eshanya	Eshanya
95	Anuj Jain	BTCD2501022	Anuj	Anuj	Anuj	Anuj
96	Hetal Singhai	BTIT2501061	Hetal	Hetal	Hetal	Hetal
97.	Saumya Singh Kushwah	BTAI2501141	Saumya	Saumya	Saumya	Saumya