माधव प्रौद्योगिकी एवं विज्ञान संस्थान, ग्वालियर (म.प्र.), भारत
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ACTIVITY REPORT
Date: 29-05-2025

Title of activity:	In-house Training Module on "Data Science"
Duration of activity:	23 April, 2025 to 29 April, 2025
Number of participants:	29
Organized by:	**Centre for Artificial Intelligence**
Brief Description of the activity:	The training module was conducted with an intent to equip the internal faculty members of other departments with the concepts and tools of Data Sciences. The contents delivered during the training module are described briefly as: • Day-1 session1: The module started with an introduction to the concepts of data science, its scope, applications etc., delivered by Dr. Bhagat Singh Raghuwanshi. • Day-1 session2: During the second session of day one module, the concepts of Python programming were discussed with hands-on practice problems. The sessions for this day were delivered by Dr. Bhagat Singh Raghuwanshi & Dr. Abhishek Bhatt. • Day-2 session1: The sessions for this day were delivered by Dr. Bhagat Singh Raghuwanshi, during which he discussed some important libraries of Python which help to implement the concepts of data sciences. The libraries discussed were numpy for numerical computations and pandas for data manipulations. All the sessions were accompanied by hands-on practice problems. • Day-2 session2: Dr. Abhishek Bhatt discussed the working and uses of matplotlib library for the visualization of data and results. • Day-3 session1: Dr. Bhagat Singh Raghuwanshi described various descriptive statistical methods used in data science and implemented the same using python programming. The day ended with the discussion regarding pre-processing of data. All the sessions were interactive and accompanied with hands-on practice on the related tools. • Day-3 session2: Dr. Bhagat Singh Raghuwanshi started the day with the recapitulation of previously discussed concepts, then he discussed the concepts and methods of normalization of data, standardization of data. • Day-4 session1: Dr. Abhishek Bhatt described the implementation of some significant machine learning techniques which included: linear regression, logistic regressions, classification. This day was specifically dedicated for any doubt clarification and further discussion regarding the concepts already covered during the module, in Online mode. • Day-4 session2: Dr. Bhagat Singh Raghuwanshi described the implementation of some significant techniques such as missing Value Analysis, Outlier Detection Analysis. • Day-5 session1: Dr. Bhagat Singh Raghuwanshi described the implementation of some significant techniques such as Unsupervised Learning:Clustering. • Day-5 session2: Final Assessment During all the sessions of the training module a thorough hands-on practice was

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	carried out using Google Colab, Spider, Jupyter, Anaconda etc., to clearly explain and implement the concepts of data science. Daily quizzes were conducted with a final assessment at the end of the training module.
Name of the Trainers:	● Dr. .Bhagat Singh Raghuwanshi ● Dr. Abhishek Bhatt
Objectives of the activity:	● To provide the fundamental knowledge of Data Science. ● To present the basic representation and exploratory data analysis used in Data Science. ● To understand the working of techniques used in Data Science.
Outcomes of the activity:	After completing the activity, the participants were able to: ● define different Data Science techniques. ● illustrate various tools used for Data Science techniques. ● apply data visualization techniques to solve real world problems. ● build exploratory data analysis for Data Science methods. ● apply Data Science techniques for solving real world problems. ● evaluate the performance of algorithms in data science.
Mode of activity:	M105 PL1 Lab 1st Floor

Dr. Bhagat Singh Raghuwanshi   **Dr. Abhishek Bhatt**

Dr. Rajni Ranjan Singh
Head, Centre for Artificial
Intelligence

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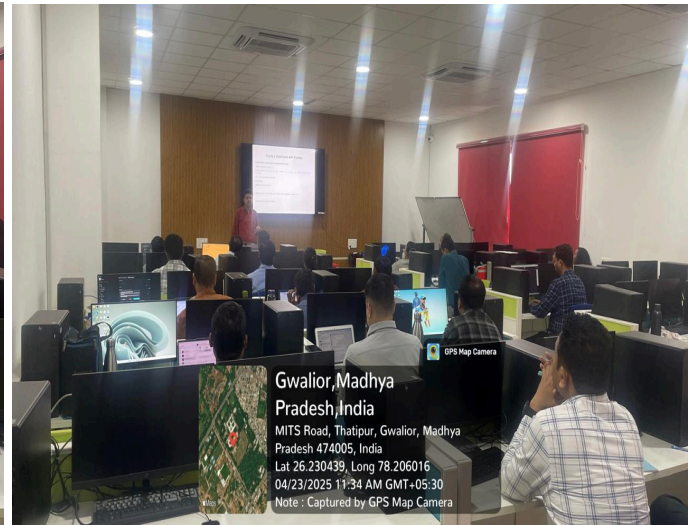
Some Glimpses of the Activity:

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Event Schedule:

Day	Time	Course Contents	Trainer Name	Mode of Delivery
Day 1 (23/04/2025)	**11:00 am to 12:00 noon**	**SESSION 1:**What is data science,need for data science, benefits and uses, facets of data, data science process.	Dr. Bhagat Singh Raghuwanshi	Lecture cum discussion mode
	02:00 pm to 04:00 pm	**SESSION 2:**Introduction of basics python tool, Setting working Directory, Types of data: Numeric, Categorical, Graphical, High Dimensional Data, Classification of Digital Data: Structured, Semi-Structured and Unstructured.	Dr. Bhagat Singh Raghuwanshi Dr. Abhishek Bhatt	Hands on/ Experimentation based mode
Day 2 (24/04/2025)	**11:00 AM to 1:00 PM**	**SESSION 1:** Data Acquisition and Data wrangling: Accessing Database, CSV etc.. Data Cleaning.	Dr. Bhagat Singh Raghuwanshi	Lecture cum discussion mode with hands-on
	02:00 pm to 03:45 pm	**SESSION 2:**Descriptive Statistics: Measures of Center and Spread, Estimation Distribution	Dr. Abhishek Bhatt	Hands on/ Experimentation based mode
Day 3 (25/04/2025)	**11:00 am to 12:00 noon**	**SESSION 1:**Data Transformation using Pandas and Sklearn, Data Visualization,	Dr. Abhishek Bhatt	Lecture cum discussion mode with hands-on
	02:00 pm to 03:45 pm	**SESSION 2:**Inferential Statistics: Sampling Distributions	Dr. Bhagat Singh Raghuwanshi Dr. Abhishek Bhatt	Hands on/ Experimentation based mode
Day 4 (28/04/2025)	**11:00 AM to 1:00 PM**	**SESSION 1:** Missing Value Analysis, Outlier Detection Analysis.	Dr. Bhagat Singh Raghuwanshi	Lecture cum discussion mode with hands-on
	02:00 pm to 03:45 pm	**SESSION 2:** Supervised Learning: Regression, classification.	Dr. Abhishek Bhatt	Hands on/ Experimentation based mode
Day 5 (29/04/2025)	**11:00 am to 12:00 noon**	**SESSION 1:**Unsupervised Learning:Clustering.	Dr. Abhishek Bhatt	Lecture cum discussion mode with hands-on
	12:15 PM to 01:15 PM	**SESSION 2:** Final Assessment	Dr. Bhagat Singh Raghuwanshi Dr. Abhishek Bhatt	Hands on/ Experimentation based mode
*Also a quiz will be conducted at the end of each day.				

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Event Attendance:

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Centre for Artificial Intelligence
Attendance list
Peer to peer training Attendance of faculty member
Peer-Learning Workshop on Data science

Sr. No	Name of Faculty	Dept. Name	23/04/2025 Session 1	23/04/2025 Session 2	24/04/2025 Session 1	24/04/2025 Session 2	25/04/2025 Session 1	25/04/2025 Session 2	28/04/2025 Session 1	28/04/2025 Session 2	29/04/2025 Session 1	29/04/2025 Session 2
1	Dr. Muktesh Gupta	Centre for Artificial										
2	Dr. Neelam Sharma	Centre for Artificial	✓	✓	✓	✓	✓	✓	✓	✓	✓	
3	Dr. Mausam Chouh	Centre for Artificial										
4	Dr. Nand Kishore J	Centre for Artificial										
5	Dr. Anurag Singh T	Centre for Artificial	Anurag	Anurag	Anurag	Anurag	Anurag	Anurag	Anurag	Anurag	Anurag	Anurag
6	Dr. Satyam Omar	Centre for Artificial	Satyam	Satyam	Satyam	Satyam	Satyam	Satyam	Satyam	Satyam	Satyam	Satyam
7	Dr. Rupam Srivasta	Centre for Internet of	Rupam	Rupam	Rupam	Rupam	Rupam	Rupam	Rupam	Rupam	Rupam	Rupam
8	Dr. Abhishek Narw	Centre for Internet of	A	A	A	A	A	A				
9	Dr. Rohit Ralli	Civil Engineerin										
10	Dr. Mohit Kumar	Civil Engineerin	mohit	mohit	mohit	mohit	mohit	mohit	mohit	mohit	mohit	mohit
11	Dr. Raghvendra Sa	Civil Engineerin	Raghav	Raghav	Raghav	Raghav	Raghav	Raghav	Raghav	Raghav	Raghav	Raghav
12	Dr. Mali Shivashan	Civil Engineerin										
13	Dr. Reema Bera	Civil Engineerin	Reema	Reema	Reema	Reema	Reema	Reema	Reema	Reema	Reema	
14	Dr. Gulshan Soni	Computer Science &										
15	Dr. Kirti Raj Bhatel	Computer Science &	Kirti	Kirti	Kirti	Kirti	Kirti	Kirti	Kirti	Kirti	Kirti	Kirti
16	Dr. Manojeet Roy	Computer Science &										
17	Dr. Saurabh Agarw	Computer Science &										
18	Dr. Ashish Tomar	Computer Science &										
19	Dr. Shresth Gupta	Electronic s &										
20	Dr. Praween Kuma	Electronic s &										
21	Dr. Yogesh Kumar	Electronic s &	Absent	Absent	Absent	Absent						
22	Dr. Shailendra Sing	Electronic s										
23	Dr. Kumar Gaurav	Electronic s	Gaurav	Gaurav	Gaurav	Gaurav	Gaurav	Gaurav	Gaurav	Gaurav	Gaurav	
24	Dr. Nidhi Humneka	Mathemati cs and	Nidhi	Nidhi	Nidhi	Nidhi	Nidhi	Nidhi	Nidhi	Nidhi	Nidhi	Nidhi
25	Dr. Anand Pawar	Mathemati cs and	A	A	A	A	A	A	A	A	A	A
26	Dr. Kuldeep Kumar	Mathemati cs and										
27	Dr. Khushboo Puni	Applied Science	A	A	A	A	A		A			
28	Dr. Akansha Soni	Department of	A	A	A	A	A		A			
29	Dr. Sumit Dhariw	Centre for Artificial	A	A	A	A	A		A			
30	Dr. Muktesh Gupta	CAI										

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Result of Daily Quizzes, Final Assessment & Grades Obtained:

S. No.	Name of the Faculty	Branch	Quiz-1 Marks/ 10	Quiz-2 Marks/ 10	Quiz-3 Marks/ 10	Quiz-4 Marks/ 10	Attendance Marks/10	Final Assessment Marks/50	Total Marks (Out of 100)	Grade Obtained
1	Dr. Muktesh Gupta	Centre for Artificial Intelligence	9	10	9	9	5	42	82	A
2	Dr. Neelam Sharma	Centre for Artificial Intelligence	10	8	10	8	8	44	88	A
3	Dr. Mausam Chouksey	Centre for Artificial Intelligence	8	3	7	9	10	47	94	A+
4	Dr. Nand Kishore Joshi	Centre for Artificial Intelligence	7	10	9	10	10	47	94	A+
5	Dr. Anurag Singh Tomar	Centre for Artificial Intelligence	8	8	10	10	10	48	96	A+
6	Dr. Satyam Omar	Centre for Artificial Intelligence	10	8	7	10	10	45	90	A+
7	Dr. Rupam Srivastava	Centre for Internet of Things	8	10	10	9	9	47	96	A+
8	Dr. Abhishek Narwaria	Centre for Internet of Things	0	8	10	10	7	39	78	A
9	Dr. Rohit Ralli	Civil Engineering	8	8	9	9	10	47	96	A+
10	Dr. Mohit Kumar	Civil Engineering	7	8	9	8	10	47	96	A+
11	Dr. Raghvendra Sahu	Civil Engineering	8	10	9	9	10	40	80	A
12	Dr. Mali Shivashankar	Civil Engineering	8	8	9	8	10	47	96	A+
13	Dr. Reema Bera	Civil Engineering	10	10	9	9	10	47	96	A+
14	Dr. Gulshan Soni	Computer Science & Bussiness System	8	8	10	9	10	43	86	A
15	Dr. Kirti Raj Bhatele	Computer Science & Engineering	9	5	9	8	3	47	96	A+
16	Dr. Manojeet Roy	Computer Science & Engineering	8	8	9	9	8	42	84	A
17	Dr. Saurabh Agarwal	Computer Science & Engineering	10	8	8	9	10	46	92	A+

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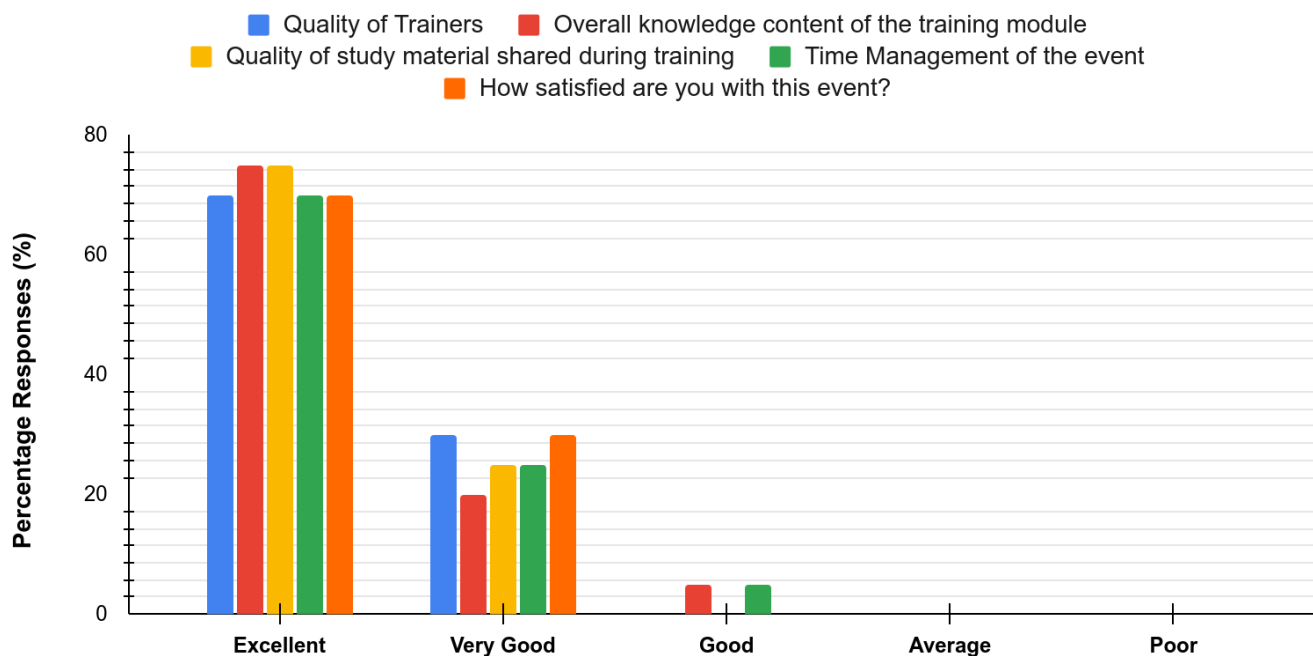**NAAC ACCREDITED WITH A++ GRADE**

18	Dr. Ashish Tomar	Computer Science & Engineering	9	10	9	9	10	47	**95**	**A+**
19	Dr. Shresth Gupta	Electronics & Telecommunication Engineering	10	8	10	8	8	44	**90**	**A+**
20	Dr. Praween Kumar Nishad	Electronics & Telecommunication Engineering	8	3	7	9	10	47	**84**	**A+**
21	Dr. Yogesh Kumar	Electronics & Telecommunication Engineering	7	10	9	10	10	47	**94**	**A**
22	Dr. Shailendra Singh	Electronics Engineering	8	8	8	9	10	43	**90**	**A+**
23	Dr. Kumar Gaurav	Electronics Engineering	8	8	7	9	8	40	**80**	**A**
24	Dr. Nidhi Humnekar	Mathematics and Computing	8	10	10	9	9	47	**93**	**A+**
25	Dr. Anand Pawar	Mathematics and Computing	7	8	8	9	8	40	**80**	**A**
26	Dr. Kuldeep Kumar Tiwari	Mathematics and Computing	8	8	9	9	9	43	**86**	**A**

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Event Feedback Analysis:

Additional comments/suggestions by the participants:

- Very interactive sessions.

- Overall nicely covered all topics. Thanks for the wonderful training program.

- All sessions were very informative. Thanks to all trainers.

- good

- Knowledgeable

- It was informative.

- Civil Engineering faculties were not equipped with the prerequisites of the Module.

- Good

- Excellent teaching and hands on by the expert faculties.

- None

- Overall it was a good learning experience

- Overall the Data science Peer training was very good.

- NA

- Excellent/