A Brief Report on "Scientific Plotting in Python", A Three-Weeks Professional Development Program (PDP)
Organized by Department of Civil Engineering, Integral University, Lucknow

Scientific visuals can be essential for analyzing data, communicating experimental results and even for making surprising discoveries. Visualizations can reveal patterns, trends and connections in data that are difficult or impossible to find any other way. Plotting the data allows us to see the underlying structure of the data that wouldn't be otherwise possible. Plotting data has been one of the most important things in the scientific community in presentation, journals, conferences etc.

In order to enhance the skill of extraordinary plotting, Department of Civil Engineering organized a three weeks **Professional Development Program** on "**Scientific Plotting in Python**" from **12th April, 2023** to **9th May, 2023**. The PDP began with the inaugural session on April 12th, 2023. Prof. Syed Aqeel Ahmad, Head, Department of Civil Engineering, Integral University, Lucknow, welcomed all the Resource Persons, Faculties, Research scholars & Students. Further, he discussed the need for scientific plotting in the field of research. He also motivated all the participants to proactively participate in PDP modules, assignments and quizzes.

The last day of the PDP witnessed Valedictory Session by Dr. Neha Mumtaz, Associate Professor, Department of Civil Engineering, Integral University, Lucknow. She presented a brief report on all the sessions covered during the PDP and thanked all the Speakers & participants for making this PDP a successful program with positive outcomes. In the end, a few participants shared their experiences of attending PDP sessions and gave their valuable feedback. The entire PDP was well coordinated by the coordinator Mr. Tabish Izhar, Assistant Professor, Department of Civil Engineering.

Total 36 participants were registered for the program and 21 participants successfully completed all the activities. All the successful participants were awarded certificates of participation. Week wise session have been summarized below:
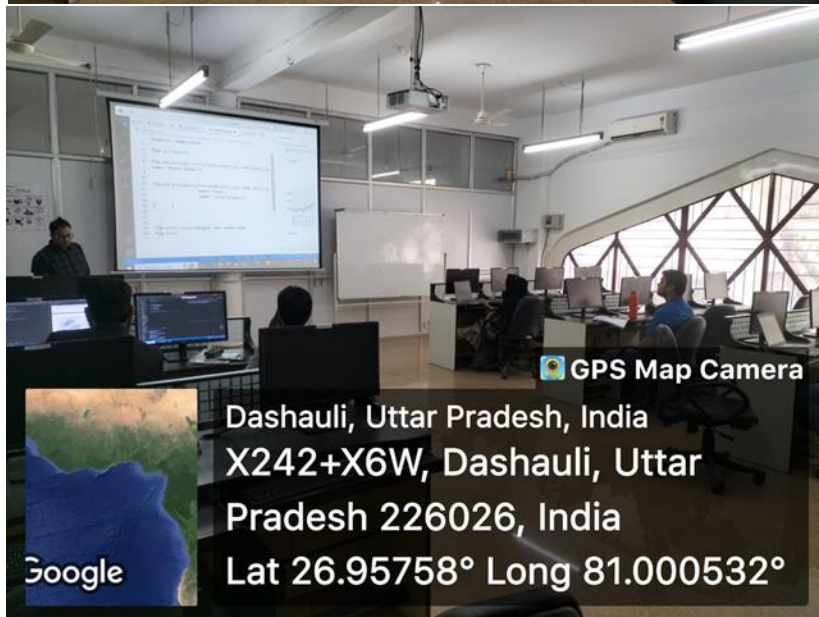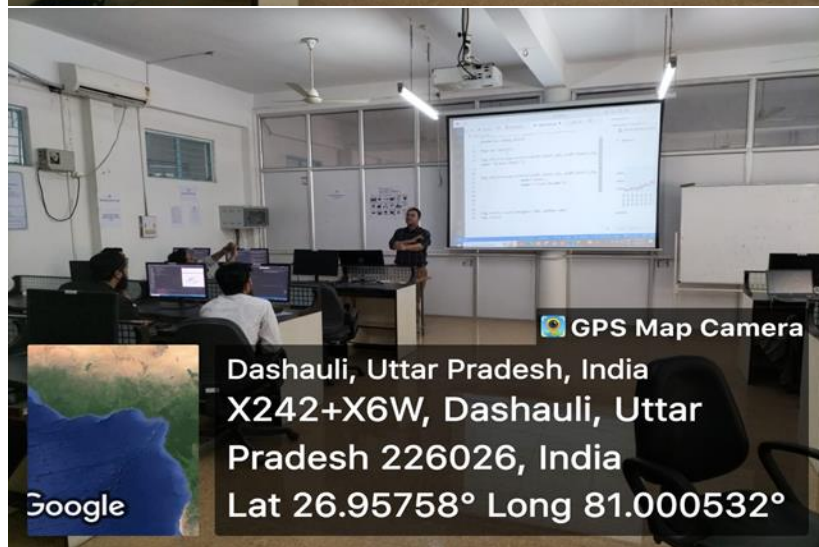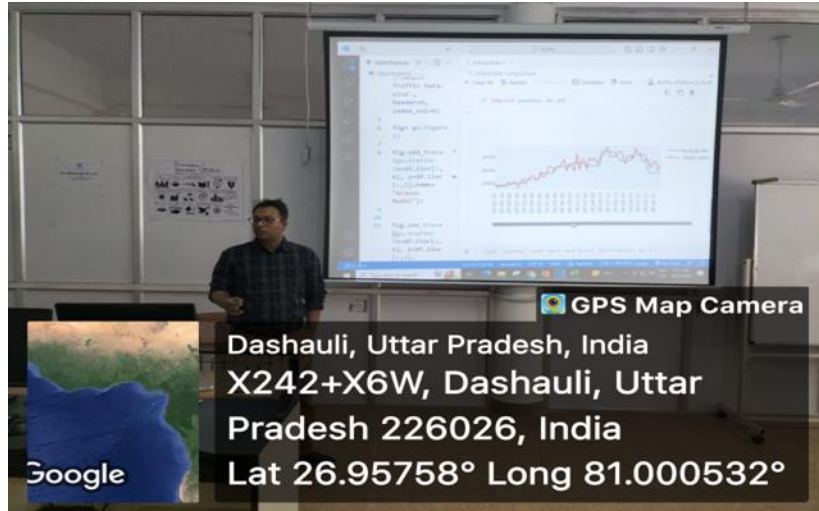
Module 1: Introduction to Python (12-11-2023 to 20-04-2023) - Introduction to the Course, Installation of IDE and Python, Introduction to Python syntaxes and basic approach towards programming. Introduction to engineering logics and how it's implemented in python. Quiz & Assignment - Module 1

Module 2: Introduction to NumPy and Pandas Library (26-04-2023 to 30-04-2023) - Installation of NumPy and Pandas Library, Introduction to NumPy and Pandas Library, Performing different operation in NumPy and Pandas Library. Quiz & Assignment - Module 2

Module 3: Hand on Practice with Plotly Library (01-05-2023 to 09-05-2023) - Installation of Plotly, Introduction of Various types of plots in Plotly, Types of data set required for the plotting of different graphs. Hand on practice with 2D and 3D interactive plotting, Introduction to animation in plotting Quiz & Assignment - Module 3

<u>Resource Persons:</u>

1) Dr. Syed Aqeel Ahmad, Prof. & Head, Department of Civil Engineering
2) Dr. Neha Mumtaz, Associate Professor, Department of Civil Engineering
3) Mr. Tabish Izhar, Assistant Professor, Department of Civil Engineering

PDP- "Scientific Plotting in Python at a Glance