



Vishnu Waman Thakur Charitable Trust's

VIVA Institute of Technology

Approved by AICTE, New Delhi, DTE, Government of Maharashtra, Affiliated to University of Mumbai
At- Shirgaon, Post-Virar (E.), Tal-Vasai, Dist-Palghar – 401 305.

Tel.: 777 000 2544 • Website : www.viva-technology.org

E-mail: contact@viva-technology.org / principalvit@vivacollege.org

Department of Electronics and Telecommunication Engineering

Course Name:	Bridge Course on Tools For Data Science
Name of the Faculty:	Mrs. Jyoti Deore
Designation:	Assistant Professor
Organization/Institution:	Viva Institute of Technology
Duration:	04 th July 2025 to 16 th October 2025
Time:	30 hours
Number of Students:	22

Course Objectives:

1. To introduce students to commonly used software tools for performing data science tasks.
2. To develop familiarity with platforms used for data collection, storage, analysis and visualization.
3. To train students in collaborative development using version control tools.
4. To provide hands-on experience of using cloud based data science tools.
5. To help students understand the applications of these tools in solving real-world analytics problems.

Course Outcomes:

After successful completion of the course, the students are able to:

1. Use various data science development tools such as Jupyter Notebook and Google Colab.
2. Perform version control and collaborative coding using Git and GitHub.
3. Store, manage and retrieve data using SQL based database tools.
4. Prepare and visualize data using tools like Power BI / Tableau.
5. Deploy simple models on cloud based platforms for demonstration.



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Programme Summary:

Duration: 30 Hours

Venue: VIVA Institute of Technology, Shirgaon.

Electronics & Telecommunication Engineering Department of VIVA Institute of Technology organized a 30 hours Bridge course on **Tools for Data Science** during 04th July 2025 to 16th October 2025 conducted by Mrs. Jyoti Deore.

Students explored end-to-end flow starting from data acquisition, data storage, data processing, visualization and reporting. Tools like Jupyter Notebook and Google Colab were used to execute python based data analysis. GitHub was used for storing and sharing code. SQL based operations were performed on sample datasets to understand storage and retrieval. Students also practiced building dashboards using Power BI for visual analytics. Cloud tools like Google Cloud console and Streamlit were also demonstrated for deployment idea. This course helped students to understand that data science is not only programming but involves combination of multiple tools and platforms. Students also gave feedback that these tools will help them in preparing mini projects, final year projects, research work and industrial internships.

The event was a success with very positive feedback from the participants. The speech by the Principal Dr. Arun Kumar was an inspiring one that covered the importance and future scope of tools for data science and how mastering the right tools and technologies will open huge opportunities for students. The Principal being an encouraging one who said that for such events where in student development is involved, he will always be supportive. In the speech given by Mrs. Archana Ingle, H.O.D of EXTC, students gained an idea of how this workshop can be utilized to take creative projects in the field of engineering.

Topics covered in course:

Sr.no	Contents	Hrs.
1	Introduction to Data Science tools ecosystem	01
2	Basics of Anaconda Navigator & virtual environments	02
3	Using Jupyter Notebook for analytics coding	02
4	Using Google Colab for cloud based coding	01
5	Introduction to Git and GitHub for version control	02
6	Data import/export tools for CSV, Excel, JSON	02
7	Using MS Excel for basic data filtering & preprocessing	02
8	Data storage using SQL database tools (MySQL / SQLite)	02
9	Data storage using SQL database tools (MySQL / SQLite)	02
10	Using Pandas and Numpy for data operations	03
11	Connecting Python with databases (SQL connector / pymongo)	02
12	Data visualization using Power BI / Tableau	03
13	Using API tool (Postman) for collecting data from web	02
14	Working with cloud based tools for data analysis (Google cloud demo)	02
15	Demo on deployment using Streamlit	02



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CO-PO MAPPING:

Course Outcome	Program Outcome												CO Target level
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	
CO1	3	2	2	2	3	-	-	-	-	-	-	-	2.4
CO2	3	3	2	2	3	-	-	-	-	-	-	-	2.6
CO3	3	3	2	2	2	-	-	-	-	-	-	-	2.4
CO4	3	2	3	2	3	-	-	-	-	-	-	-	2.6
CO5	3	2	2	2	3	-	-	-	-	-	-	-	2.4

Student Certificate format:

 Vishnu Waman Thakur Charitable Trust's VIVA Institute of Technology Approved by AICTE, New Delhi, DTE, Govt. of Maharashtra and Affiliated to the University of Mumbai Shirgaon, Virar(E.), Dist: Palghar-401305, Maharashtra NAAC "B++" GRADE	
Certificate of Appreciation This is to certify that GAWADE SANKET SAMBHAJI Student of Electronics and Telecommunication Engineering department has successfully completed bridge course on "Tools for Data Science" conducted during 4th July 2025 to 16th October, 2025 at VIVA Institute of Technology, Shirgaon. His / Her contribution is highly appreciated.	
 _____ (Mrs. Archana Ingle) HEAD OF DEPARTMENT	 _____ (Dr. Arun Kumar) Principal