

Vishnu Waman Thakur Charitable Trust's  
Bhaskar Waman Thakur College of Science,  
Yashvant Keshav Patil College of Commerce,  
Vidhya Dayanand Patil College of Arts,  
(VIVA College)



**Data Science  
(Basic Module)  
(CC-DS)**



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**DEPARTMENT OF IT-CS-DS IS  
CONDUCTING A CERTIFICATE COURSE  
DATA SCIENCE (BASIC MODULE)**

- THE COURSE WILL BE OF 30 HOURS.
- IT CONSISTS OF ASSIGNMENTS AND CLASS TESTS ALSO.
- IT WILL BE CONDUCTED IN HYBRID MODE,
- LAST WEEK OF APRIL.

**COURSE IS FREE  
OF COST.**

**CERTIFICATES WILL BE ISSUED TO ENROLLED  
STUDENTS.  
ENROL NOW!!!  
SCAN QR FOR THE ENROLLMENT LINK**





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### Certificate Course

(Department of I.T. C.S. & D.S.)

### Data Science (Basic Module)

#### Learning Outcomes

After Successful completion of this course, students would be able to

- Working with data collection structures.
- Ability to work with data analysis using Python.
- Ability to solve real-world data analysis problems.
- Understand fundamentals of visualization.
- Ability to create dashboards using Power BI.

Unit	Topics	No. of Lectures
I	<b>Introduction:</b> What is Data Science?, Historical Background of Data Science, Basic Components of Data Science, How Data Science Work?, Main processes of Data Science, Data Science tools, Applications of Data Science, Real life usage of Data Science Systems, Top industries players of Data Science, Career in Data Science, Challenges faced by Data Science, Helpful Information about Data Science.	10
II	<b>Data Analysis</b>  Introduction of Data Analysis: Overview of Data Analysis, Advantages, Disadvantages, Types of Data Analysis.  Python: Introduction to Python, Libraries, basic commands, Introduction to Jupyter Notebook, Descriptive Statistics in Python, Pandas and Matplotlib.	10



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	EDA(Exploratory data analysis):Data Cleaning, Imputation, Techniques, Data analysis and visualization(scatter diagram, correlation of analysis ,transformation, Data Analysis vs Data Analytic ,Qualitative Analysis vs Quantitative Analysis	
<b>III</b>	<p><b>Data Visualization</b></p> <p>What is Data Visualization? and its fundamentals, Importance of Data Visualization in Data Science, Benefits of Data Visualization, Different Types of Data Visualization-distribution plot, box plot, violin plot, line plot, bar plot, scatter plot, histogram, pie chart, area plot, Data Visualization Process</p> <p>Tools and Software for Data Visualization using Power BI (what is Power BI and its uses) and Matplotlib using Python, Data Visualization Techniques in Data Science</p> <p>Advantages and Disadvantages of Data Visualization, Examples of Data Visualization in Data Science, Data Visualization Best Practices, Essential Skills for Data Visualization.</p>	<b>10</b>
<p><b>References:</b></p> <ol style="list-style-type: none"> <li>1. Introduction to Data Science, Practical Approach with R and Python, B. Uma Maheswari and R. Sujatha</li> <li>2. Data Visualization: Ultimate Guide to Data Mining and Visualization, Alex Campbell.</li> </ol>		