

LABORATORY PLANNING (LP)

Academic Year: 2026-27 (ODD)

Date: 10/08/2026

Institute Name: K. K. Wagh Polytechnic, Nashik

MSBTE Code: 0078

Program and Code: Information Technology (IF)

Course Code & Abbr.: 315326 (DAN)

Course Name: DATA ANALYTICS

Name of Faculty: Ms. M. S. Karande

Class: TYIF-CRAY

Semester: 5TH

Scheme: K

Course Index: 506 **Learning Hrs.:**40

• Teaching-Learning & Assessment Scheme:

Course Code	Course Title	Abbr	Course Category	Learning Scheme						Credits	Paper Duration	Assessment Scheme										Total Marks
				Actual Contact Hrs./Week			SLH	NLH	Theory				Based on LL & TSL Practical				Based on SL					
				CL	TL	LL			FA-TH			SA-TH	Total		FA-PR		SA-PR		SLA			
													Max	Max	Max	Min	Max	Min	Max	Min	Max	
315326	DATA ANALYTICS	DAN	DSE	4	-	2	-	6	2	3	30	70	100	40	25	10	25 #	20	-	-	150	

Abbreviations: CL- Class Room Learning, TL- Tutorial Learning, LL-Laboratory Learning, SLH-Self Learning Hours, NLH-Notional Learning Hours, FA - Formative Assessment, SA -Summative assessment, IKS – Indian Knowledge System, SLA - Self Learning Assessment

Legends: @ Internal Assessment, # External Assessment, *# On Line Examination, @\$ Internal Online Examination

• COURSE LEVEL LEARNING OUTCOMES (COS)

Students will be able to achieve & demonstrate the following COs on completion of course based learning

- CO1 - Elaborate the fundamental concepts of Data Analytics.
- CO2 - Apply appropriate statistical techniques to analyze and interpret complex Datasets.
- CO3 - Analyze numerical data by creating pivot table.
- CO4 - Represent data in terms of various types of charts.
- CO5 - Visualize the data using a Python library.

• COs, Practical Laboratory Learning Outcome (LLOs) and Mapping:

Pr. No	CO	LLO	Name of Experiments/Assignment/ Sheet/ Job/ Project Activity	Planned Date A/B/C		Actual date of Performance	Remark
				From	To		
1	CO-1	LLO 1.1	*a. Calculate mean, median, and mode for a given dataset using Excel functions (AVERAGE, MEDIAN, MODE). *b. Calculate range, interquartile range (IQR), variance, and standard deviation using Excel functions (STDEV, VAR). *c. Calculate the correlation coefficient between two variables using the CORREL function	A-21/08/2026 B-19/08/2026 C-19/08/2026	A-28/08/2026 B-02/09/2026 C-02/09/2026	A- B- C-	

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Pr. No	CO	LLO	Name of Experiments/Assignment/ Sheet/ Job/ Project Activity	Planned Date A/B/C		Actual date of Performance	Remark
				From	To		
2	CO-2	LLO 2.1 LLO 2.2 LLO 2.3 LLO 2.4 LLO 2.5	*a. Construct a box plot using the Insert Chart feature to identify the median, quartiles, and outliers of a dataset. *b. Perform a simple linear regression analysis *c. Conduct a t-test to compare means between two groups *d. Calculate confidence intervals *e. Conduct a Chi-square test	A-09/10/2026 B-07/10/2026 C-07/10/2026	A-16/10/2026 B-14/10/2026 C-14/10/2026	A- B- C-	
3	CO-3	LLO 3.1 LLO 3.2	*Create a Data Table a. Import a sample dataset (e.g., sales data) into Excel. b. converts the dataset into an Excel Table using the "Format as Table" feature and apply appropriate styles. c. Create a dashboard sheet that summarizes key metrics (e.g., total sales, average sales per region) using tables. *Data Cleaning a. Identify and remove duplicates from a dataset. b. Use functions like TRIM, UPPER, LOWER, and PROPER to clean text data. c. Find and replace values using the Find & Replace feature.	A-28/08/2026 B-02/09/2026 C-02/09/2026	A-04/09/2026 B-09/09/2026 C-09/09/2026	A- B- C-	
4	CO-4	LLO 4.1 LLO 4.2	Create a Pivot Table a. A basic pivot table from a dataset b. Specify and filter data in a pivot table c. Add a calculated field to a pivot table d. Group data within a pivot table. Refresh pivot table data after making changes to the source data.	A-04/09/2026 B-09/09/2026 C-09/09/2026	A-11/09/2026 B-16/09/2026 C-16/09/2026	A- B- C-	

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Pr. No	COs	LLO	Name of Experiments/Assignment/Sheet/ Job/ Project Activity	Planned Date A/B/C		Actual date of Performance	Remark
				From	To		
4	CO-3	LLO 4.1 LLO 4.2	Filter and sort a PivotTable a. Apply a Filter to the PivotTable b. Sort Data in the Pivot Table. c. Add slicers to the PivotTable for interactive filtering.			A- B- C-	
5	CO-3	LLO 5.1	Create a Pivot Chart a. A basic pivot chart from a dataset b. A dynamic pivot chart that updates based on user selection c. Group date items in a pivot table to summarize data by month or year d. Group product categories in a pivot table	A-11/09/2026 B-16/09/2026 C-16/09/2026	A-18/09/2026 B-23/09/2026 C-23/09/2026	A- B- C-	
6	CO-4	LLO 6.1	*Create a Simple Chart a. A simple bar chart to visualize data sets b. A chart using non-adjacent cells to visualize data from different ranges. *Create a Chart Using the Chart Wizard a. Select the chart you created and experiment with the Chart Tools options b. Modifying Charts c. Moving an Embedded Chart d. Sizing an Embedded Chart	A-18/09/2026 B-23/09/2026 C-23/09/2026	A-25/09/2026 B-30/09/2026 C-30/09/2026	A- B- C-	
7	CO-4	LLO 7.1	*Change the Chart Type a. Create a basic bar chart using a dataset and change its type to a different chart b. Experiment with different data display options, such as adding data labels, changing the axis format, and adjusting the gridlines c. Experiment with position and style of the legend	A-18/09/2026 B-23/09/2026 C-23/09/2026	A-25/09/2026 B-30/09/2026 C-30/09/2026	A- B- C-	

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Pr. No	COs	LLO	Name of Experiments/Assignment/Sheet/ Job/ Project Activity	Planned Date A/B/C		Actual date of Performance	Remark
				From	To		
8	CO-4	LLO 8.1	a. Create a pie chart from a dataset b. Move the pie chart to a new worksheet for better visibility c. Emphasize a specific category by exploding a slice of the pie chart d. Customize the appearance of the pie chart for better presentation	A-25/09/2026 B-30/09/2026 C-30/09/2026	A-09/10/2026 B-07/10/2026 C-07/10/2026	A- B- C-	
9	CO-5	LLO 9.1	* Create different types of plots Write a Python script to save the plot in different formats: PNG, PDF, and SVG	A-25/09/2026 B-30/09/2026 C-30/09/2026	A-09/10/2026 B-07/10/2026 C-07/10/2026	A- B- C-	
10	CO-1	LLO 10.1	Application of data analytics across various industries through case study	A-14/08/2026 B-12/08/2026 C-12/08/2026	A-21/08/2026 B-19/08/2026 C-19/08/2026	A- B- C-	

ASSESSMENT METHODOLOGIES/TOOLS**A. Formative assessment (Assessment for Learning) (FA-TH)**

- Continuous assessment based on process and product related performance indicators.60% weightage is to process.
- Each practical will be assessed considering 1) 60% weightage to process 2) 40% weightage to product.
- A continuous assessment based on term work

B. Summative Assessment (Assessment of Learning) (SA-TH)

- End semester examination, Lab performance, Viva voce

Ms. M. S. Karande
(Name & Signature of Staff)

Ms. M. S. Karande
(Name & Signature of HOD)