



Department of Computer BAKLIWAL FOUNDATION

College of Arts, Commerce & Science, Vashi

[Affiliated to KKS University & Approved by Govt. of Maharashtra & AICTE, Delhi]



CERTIFICATE COURSE - II

Course Name: DataSmart: Advanced Techniques in Data Analysis

Offered by: Department of BCA

Conducted by: DataNova Solutions

Duration: 30 Hours

Modes: Hybrid (Offline/Online)

Course Introduction:

Welcome to DataSmart: Advanced Techniques in Data Analysis [Advance], a 30-hour value-added course designed to empower Second Year (SY) and Third Year (TY) BCA students with cutting-edge analytical skills and real-world data expertise.

Building on foundational concepts, this advanced-level program dives deeper into the powerful tools, techniques, and strategies used by data professionals across industries. Students will explore sophisticated methods of data manipulation, predictive modeling, and visualization, gaining hands-on experience with industry-standard platforms and programming environments.

Whether you're preparing for a career in data science, business intelligence, or software development, this course equips you with the analytical mindset and technical proficiency to thrive in a data-centric world.



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What You'll Master:

-  Advanced data wrangling and transformation techniques
-  Exploratory Data Analysis (EDA) using Python or R
-  Predictive analytics and basic machine learning models
-  Data visualization with tools like Power BI, Tableau, or Matplotlib
-  Real-world datasets and project-based learning

Why This Course Matters:

-  Bridges the gap between academic learning and industry expectations
-  Enhances your portfolio with practical, project-based experience
-  Prepares you for internships, placements, and higher studies in data science
-  Cultivates critical thinking and data-driven decision-making skills

Course Objectives:

-  Deepen understanding of data wrangling, aggregation, and transformation
-  Introduce students to applied statistics and feature engineering
-  Build fluency in working with large datasets and real-world case studies
-  Lay the groundwork for machine learning by emphasizing analytical thinking



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Course Components:

- ✚ Theory: 10 Hours
- ✚ Hands-on Practical Session: 18 Hours
- ✚ Assessment & Project work: 2 Hours

Syllabus:

Sr No.	Module Name	Hours
Module 1	Advanced Data Wrangling	6
Module 2	Feature Engineering	4
Module 3	Data Visualization – Pro Level	4
Module 4	Applied Statistical Analysis	4
Module 5	Introduction to Predictive Analytics	6
Module 6	Capstone Project	6

Course outcomes:

- ✚ Perform advanced data cleaning, transformation, and reshaping
- ✚ Apply statistical tests to validate hypotheses
- ✚ Visualize insights interactively and professionally
- ✚ Build simple predictive models using regression techniques
- ✚ Complete a comprehensive data analysis project end-to-end

Course outcomes:

- ✚ Gain practical skills in data analysis and visualization.
- ✚ Enhance career prospects in data-driven industries.
- ✚ Learn from industry experts at DataNova Solutions.



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Assessment

Component	Weight
Weekly Lab Assignments	30%
Mini Case Study Analysis	10%
Capstone Project	40%
Quiz / Final Test	20%

Certificate of Excellence for students scoring above **75%**

Certificate of Completion for students scoring **60%–74%**