



Shri Vile Parle Kelavani Mandal's
DWARKADAS J. SANGHVI COLLEGE OF ENGINEERING
(Autonomous College Affiliated to the University of Mumbai)
NAAC Accredited with 'A' Grade (CGPA : 3.18)



Shri Vile Parle Kelavani Mandal's
Dwarkadas J. Sanghvi College of Engineering
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Scheme and detailed Syllabus (DJS23)
Third Year B.Tech
in
Artificial Intelligence (AI) and Data Science
Honors Degree Program
in
Business Intelligence
(Semester V)

To be Prepared by: - Board of Studies in Artificial Intelligence (AI) and Data Science

To be Recommended by: - Academic Council of Dwarkadas J. Sanghvi College of Engineering

To be Approved by: - Governing Body of Dwarkadas J. Sanghvi College of Engineering

with effect from the Academic Year: 2026-2027

Scheme for Second Year Undergraduate Program in Artificial Intelligence (AI) and Data Science - Honors in Business Intelligence: SEM V (Autonomous)

Academic Year 2026-2027

Sr. no.	Course Code	Course	Teaching Scheme				Semester End Examination (SEE) - A						Continuous Assessment (CA) - B						Aggregate (A+B)	Credits Earned		
			Theory (Hrs)	Practical (Hrs)	Tutorial (Hrs)	Credits	Duration (Hrs)	Theory	Oral	Pract	Oral & Pract	SEE Total (A)	Term Test 1 (TT1)	Term Test 2 (TT2)	Term Test 3 (TT3)	Term Test Total (TT1 + TT2 + TT3)	CA Total (B)					
SEM V																						
3	DIS23SH2301	Strategic Business Intelligence and Decision Engineering	3	--	--	3	2	60	--	--	--	--	60	15	15	10	40	--	40	100	3	4
	DIS23SH2301L	Strategic Business Intelligence and Decision Engineering Laboratory	--	2	--	1	--	--	--	--	--	--	--	--	--	--	--	25	25	25	1	
Total			3	2	--	4	2	60	--	--	--	--	60	15	15	10	40	25	65	125	4	4

Prepared by

Checked by

Head of the Department

Principal

**Program: B.Tech in Artificial Intelligence (AI) and Data Science
Honors in Business Intelligence**

S.Y. B.Tech Semester: V

Course: Strategic Business Intelligence and Decision Engineering (DJS23SH2301)

Course: Strategic Business Intelligence and Decision Engineering Laboratory (DJS23SH2301L)

Pre-requisite:

Foundation of Business Intelligence and Analytics, Python, Advanced BI and analytics

Course Objectives: The Objectives of course are:

1. To understand strategic applications of Business Intelligence in enterprise decision-making.
2. To develop analytical and decision engineering frameworks for business problem-solving.
3. To design KPI-driven strategic dashboards and executive reporting systems.
4. To apply Business Intelligence techniques across organizational functions and industries.
5. To understand intelligent analytics, cloud BI, and enterprise decision support systems.

Course Outcomes: On successful completion of this course, student should be able to

1. Understand strategic Business Intelligence frameworks and enterprise decision systems.
2. Design analytical models and decision engineering workflows for business applications.
3. Apply scenario analysis, optimization, and KPI engineering for strategic planning.
4. Develop executive dashboards and enterprise performance monitoring systems.
5. Evaluate intelligent and cloud-based Business Intelligence platforms.
6. Build integrated strategic BI solutions considering governance, ethics, and business impact.

Strategic Business Intelligence and Decision Engineering (DJS23SH2301)		
Unit	Description	Duration
1	Strategic Business Intelligence Foundations Evolution of Strategic Business Intelligence, Strategic role of BI in organizations, Strategic vs Operational Decision-Making, Data-Driven Organizations and Decision Culture, Competitive Advantage through BI, Enterprise Information Systems Overview, Business Intelligence Maturity Models, Strategic Analytics Frameworks, Real-world strategic BI case studies	06
2	Decision Engineering and Business Modeling Introduction to Decision Engineering, Structured, Semi-Structured, and Unstructured Decisions, Decision-Making Models and Frameworks, Decision Trees and Business Rules, What-if Analysis and Scenario Planning. Goal Seeking and Sensitivity Analysis, Risk Analysis and Business Uncertainty, Multi-Criteria Decision Making (MCDM), Business Optimization Concepts, Simulation-based Decision Models	08
3	Enterprise Performance Management and Strategic Dashboards Enterprise Performance Management (EPM), Strategic KPIs and Metrics, Balanced Scorecard Framework, Financial, Operational, and Customer Performance Indicators, Executive Information Systems (EIS), Dashboard Design Principles for Executives, Real-time Performance Monitoring, Alert Systems and Exception Reporting , Data Storytelling and Executive Reporting, Dashboard implementation using Power BI/Tableau	07
4	Functional Business Intelligence Applications Finance Analytics: Revenue and profitability analysis, Budget and variance analysis, Fraud and risk monitoring dashboards Marketing Analytics: Campaign performance analytics, Customer segmentation and retention analytics, Customer lifetime value analysis Operations and Supply Chain Analytics: Inventory and logistics analytics, Vendor and procurement analytics, Process efficiency monitoring	07

	HR Analytics: Workforce performance analytics, Attrition and recruitment analytics, Employee engagement dashboards	
5	Intelligent and Cloud-based Business Intelligence: Cloud Business Intelligence Platforms, Self-Service BI, Power BI Service and Tableau Online concepts, Mobile and Embedded Analytics, Conversational BI and Natural Language Query, Automated Insights and Smart Analytics, Real-time and Streaming Analytics, Introduction to AI-enabled Business Intelligence, Emerging Trends in Enterprise Analytics.	07
6	BI Governance, Enterprise Strategy and Case Studies Data Governance and Data Quality, BI Security and Access Control, Ethical Issues in Business Intelligence, Privacy and Responsible Analytics, Enterprise BI Implementation Lifecycle, Agile BI Development, Challenges in BI Adoption, ROI and Business Value Measurement, Industry Case Studies: Banking, Retail, Healthcare, Manufacturing, E-commerce, Mini-capstone project planning	07
	Total	42

List of Experiments:

1. Design strategic KPI dashboards for enterprise performance monitoring.
2. Perform what-if analysis and scenario planning using BI tools.
3. Create Balanced Scorecard dashboards for organizational strategy evaluation.
4. Develop financial analytics dashboards for revenue and profitability analysis.
5. Build marketing analytics dashboards for customer segmentation and campaign analysis.
6. Implement supply chain and operations monitoring dashboards.
7. Develop HR analytics dashboards for workforce analysis.
8. Publish and share cloud-based dashboards using Power BI Service/Tableau Online.
9. Create conversational BI reports using natural language query features.
10. Mini Project: Develop an end-to-end strategic BI solution for an enterprise use case.

Minimum eight experiments from the above suggested list or any other experiment based on syllabus will be included, which would help the learner to apply the concept learnt.

Books Recommended:

Textbooks:

Reference Books:

1. Ramesh Sharda, Dursun Delen, and Efraim Turban, "Business Intelligence, Analytics, and Data Science: A Managerial Perspective" Fourth Edition.
2. Daniel J. Power, Ciara Heavin "Decision Support, Analytics, and Business Intelligence", Third Edition
3. Pierstefano Tucci, "Power BI Succinctly" by Syncfusion, Inc, 2017

Web Links:

1. <https://www.oreilly.com/start-trial/?next=%2Flibrary%2Fview%2Factionable-intelligence-a%2F9781118920657%2Ftitle.xhtml&type=individual>
2. <file:///D:/Sudhir/8.%20A.Y.%202025-26%20EVEN%20SEM/BI-Sem-VI/Books/Power%20BI%20Succinctly.pdf>
3. https://www.classcentral.com/course/swayam-business-intelligence-with-powerbi-from-data-to-strategic-decisions-456170?utm_source=chatgpt.com

4. https://www.mygreatlearning.com/academy/learn-for-free/courses/business-intelligence-for-beginners?utm_source=chatgpt.com

Evaluation Scheme:

Semester End Examination (A):

Theory:

- i. Question paper based on the entire syllabus total comprising of 60 marks.
- ii. Total duration allotted for writing the paper is 2 hrs.

Continuous Assessment (B):

Theory:

- i. Term Test 1 (based on 40 % syllabus) of 15 marks for the duration of 45 min.
- ii. Term Test 2 (on next 40 % syllabus) of 15 marks for the duration of 45 min.
- iii. Assignment / course project / group discussion / presentation / quiz/ any other for 10 marks

Laboratory: (Term work)

1. Term Work shall consist of at least 8 practical's based on the above list.
2. The distribution of marks for term work shall be as follows:
 - i. Laboratory work :15 Marks.
 - ii. Mini Project: 10 Marks

The final certification and acceptance of term work will be subject to satisfactory performance of laboratory work and upon fulfilling minimum passing criteria in the term work.

Prepared by

Checked by

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Head of the Department

Principal