



**JINDAL GLOBAL  
BUSINESS SCHOOL**  
INDIA'S FIRST MULTI-DISCIPLINARY GLOBAL BUSINESS SCHOOL



**O.P. Jindal Global University**  
*A Private University Promoting Public Service*  
**NAAC Accreditation - 'A' Grade**

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Jindal Global Business School  
*Course Outline*

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Course Title	Data Insights: SQL and Visualization
Core or Elective	Elective
Program and Batch	MBA-2025, IBM-2022, IBM-2023
Semester & Academic Year	Fall 2026
Credits	1.5
Discipline/Area	Information Systems & Analytisc
Name of the Faculty Member/Course Instructor	Prof. Syed Abdullah Ashraf
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Faculty Member's Open Office Day/s & Time	TBA

### **Introduction to the Course**

This course introduces students to the fundamentals of data management, analysis, and visualization for business decision-making. It focuses on developing practical skills in querying structured data using SQL and transforming raw data into meaningful insights through interactive dashboards in **Microsoft Power BI**.

Students will learn how to extract, clean, and model data using SQL and Power Query, and apply analytical techniques using DAX to create key performance indicators (KPIs). The course emphasizes real-world business applications across domains such as marketing, finance, operations, and human resources.

Through hands-on exercises and a capstone project, students will gain the ability to design compelling visualizations, communicate insights effectively, and support data-driven decision-making in organizations.

### **Course Learning Objectives**

**At the end of the course, students should be able to**

1. CLO1- Analyze structured datasets using SQL to extract meaningful patterns and insights relevant to business decision-making.
2. CLO2- Evaluate and transform raw data from multiple sources using Power Query to ensure accuracy, consistency, and analytical readiness.

3. CLO3- Design and develop interactive dashboards and data visualizations using Power BI to effectively communicate insights and support strategic decisions.

**Programme Competency Goals**

MBA Programme Competency Goals (PCGs)		MBA Programme Learning Objectives (PLOs)
		Students will be able to
1	<b>Technological Agility:</b> Ability to adopt relevant technologies for better business decision making.	1. Understand relevant business technologies
		2. Understand future technologies in business domain
2	<b>Responsible Global Citizenship:</b> Ability to understand the interplay between local and global issues and to act with sensitivity towards ethical and social issues	3. Understand the interplay between local and global business issues
		4. Demonstrate sensitivity towards ethical issues
		5. Demonstrate sensitivity towards social issues
		6. Address societal issues
3	<b>Effective communication:</b> Ability to effectively exchange ideas and information	7. Present their ideas with clarity
		8. Prepare an organized and logical business document
		9. Use technology for effective communication
4	<b>Critical Thinking:</b> Ability to identify, analyze business problems and propose effective solutions	10. Identify main issues of business problems
		11. Examine information from different sources
		12. Draw inferences from analysis
		13. Evaluate alternatives
		14. Summarize and conclude
5	<b>Leadership:</b> Ability to take initiative, inspire and collaborate with others	15. Take initiative
		16. Contribute effectively in groups

## PLO-PCG Assessments Mapping Matrix

Program Learning Objectives (PLOs)	Program Competency Goals (PCGs)	Course Assessment Item
This course helps you to develop the following Program Learning Outcomes:	This course helps you to develop the following Program Competency Goals:	This learning outcome will be assessed in the following items
PLO1, PLO2, PLO15	PCG1, PCG5	A1
PLO9 - PLO14	PCG3, PCG4	A2
PLO1, PLO7-PLO16	PCG1, PCG3, PCG4, PCG5	A3, A4

### Evaluation Schema

The course grade will be determined based on:

Assessment Task	Weightage (Percentage)	Nature (Individual/Group)	Week of Assessment	PLOs to be Assessed
A1 Class Participation	10%	Individual	Continuous	PLO1, PLO2, PLO15
A2 Quiz	30%	Individual	3 <sup>rd</sup> Week, 5 <sup>th</sup> Week	PLO9 - PLO14
A3 Assignment	30%	Group	4 <sup>th</sup> Week	PLO1, PLO7-PLO16
A4 Endterm Examination-Project	30%	Group	6 <sup>th</sup> Week	PLO1, PLO7-PLO16

### Description of Assessments:

**A1 Class Participation** - for contributing to the discussion related to topic being covered in the class.

**A2 Quiz**- There will be two (2) in-class on UMS quizzes of 15 marks each. They will be MCQ based.

**A3 Assignment** - There will be a 30 marks group in-class group assignment. The groups will be of 5-6 members.

**A4 Project** - Students will work as a group and prepare a project as part of external/end-term examination. The will be judged as per the provide rubrics.

### Rubrics for Assessments

#### A2 Quiz (30%)

Score Range	Performance Description
15 – 20	Demonstrates excellent conceptual understanding of SQL (joins, aggregations, subqueries), data handling, and Power BI visualization principles; answers are consistently accurate
10 – 14	Shows good understanding of SQL and visualization concepts; most answers are correct with a few minor errors
7 – 9	Displays basic understanding of SQL queries and visualization concepts; several incorrect responses indicate gaps in key areas
0 – 6	Shows poor understanding of SQL and Power BI fundamentals; many incorrect answers reflecting major conceptual gaps

**A3 Assignment (30%)**

Criteria ↓ / Levels →	Excellent (100-90%)	Good (80%-70%)	Satisfactory (60%-50%)	Needs Improvement (40%-0%)
<b>SQL Query Design (25%)</b>	Efficient, complex queries (joins, subqueries, optimization)	Mostly correct, some advanced use	Basic queries, limited complexity	Errors in logic, limited execution
<b>Data Cleaning &amp; Preparation (15%)</b>	Fully cleaned, well-structured dataset	Minor issues, mostly clean	Some inconsistencies remain	Poor cleaning, many issues
<b>Power BI Visualization Design (25%)</b>	Highly interactive, insightful dashboards	Good visuals with some interactivity	Basic visuals, limited insights	Poor layout or unclear visuals
<b>Insights &amp; Analysis (20%)</b>	Deep, actionable insights clearly explained	Good insights with explanation	Basic interpretation	Weak or unclear insights
<b>Presentation &amp; Documentation (15%)</b>	Clear, professional, well-structured	Mostly clear, minor gaps	Adequate explanation	Poor clarity or structure

**A4 Project (30%)**

Criteria ↓ / Levels →	Excellent (100-90%)	Good (80%-70%)	Satisfactory (60%-50%)	Needs Improvement (40%-0%)
SQL Query Design (12.5%)	Complex, optimized queries using joins, CTEs, subqueries; accurate and efficient results	Mostly correct queries with some advanced usage; minor inefficiencies	Basic queries with limited joins/logic; partially correct results	Incorrect or incomplete queries; major logical errors
Data Preparation & Cleaning (7.5%)	Dataset is clean, consistent; proper handling of nulls, data types, and transformations	Minor issues in cleaning; dataset mostly usable	Some inconsistencies; incomplete cleaning steps	Poor data preparation; major issues affecting analysis
Power BI	Highly interactive	Good visuals with	Basic visuals;	Poor or unclear

Visualization Design (12.5%)	dashboard; appropriate visuals, filters, strong user experience	some interactivity; minor design issues	limited interactivity; average design	visuals; misleading charts; no interactivity
Insights & Business Analysis (10%)	Deep insights with clear trends, patterns, and actionable recommendations	Relevant insights with reasonable explanations	Limited insights; mostly descriptive with little interpretation	No meaningful insights or incorrect conclusions
Presentation & Documentation (10%)	Well-structured, professional; clear explanation of SQL logic and dashboard	Clear presentation with minor gaps in structure or explanation	Somewhat unclear; missing explanations in parts	Disorganized; difficult to follow; lacks proper documentation
Viva – SQL & Power BI Concepts (50%)	Demonstrates deep understanding of SQL logic, data modeling, and visualization choices; confidently justifies decisions	Good understanding with minor conceptual gaps	Basic understanding; limited ability to justify approach	Limited or incorrect understanding of core concepts

### Teaching Method

The course will have a judicious mix of lectures, storytelling, experiential exercises, and cases. Here the onus of learning will be with the student, and the instructor will be a facilitator. Instead of learning ‘what to do’, the cases will also be used as examples of real-world phenomena where issues arise, and good and bad practices are seen. The key to learning this way is to see many examples and situations and learn inductive as well as deductive ways from students’ and managers' different experiences.

### Textbook / Other Readings

#### Textbook:

1. TB1: MySQL Cookbook By Paul DuBois Publisher: O'Reilly
2. TB2: Introducing Microsoft Power BI by Alberto Ferrari and Marco Russo

### Session Plan

Session Details	Topics	PLOs Covered
<b>Session 1</b>	Data Insights	PLO1, PLO2
Objective of the session	Introduction to Data & Analytics	
Subtopics to be covered	Role of data, analytics lifecycle, BI overview	
Readings	NA	
Case Title & Number	NA	
Pedagogy	Lecture and Hands-on	
<b>Session 2</b>	Record Selection Techniques	PLO7-11
Objective of the session	SQL Basics	

Subtopics to be covered	SELECT, WHERE, ORDER BY	
Readings	TB1: Chapter 3	
Case Title & Number	NA	
Pedagogy	Lecture and Hands-on	
<b>Session 3</b>		
Objective of the session	Sorting Query Results	PLO7-11
Subtopics to be covered	SQL Aggregation	
Readings	GROUP BY, HAVING, aggregates	
Case Title & Number	TB1: Chapter 6 and Chapter 7	
Pedagogy	NA	
	Lecture and Hands-on	
<b>Session 4</b>		
Objective of the session	Using Multiple Tables-1	PLO7-11
Subtopics to be covered	SQL Joins	
Readings	INNER, LEFT, RIGHT joins	
Case Title & Number	TB1: Chapter 12	
Pedagogy	NA	
	Lecture and Hands-on	
<b>Session 5</b>		
Objective of the session	Using Multiple Tables-2	PLO7-11
Subtopics to be covered	SQL Joins	
Readings	INNER, LEFT, RIGHT joins	
Case Title & Number	TB1: Chapter 12	
Pedagogy	NA	
	Lecture and Hands-on	
<b>Session 6</b>		
Objective of the session	Intro to Visualization	PLO7-12
Subtopics to be covered	Intro to Power BI + Data Loading	
Readings	Interface, data sources, loading data	
Case Title & Number	TB2: Chapter 1	
Pedagogy	NA	
	Lecture and Hands-on	
<b>Session 7</b>		
Objective of the session	Extract Transform and Load	PLO7-12
Subtopics to be covered	Power Query	
Readings	Power Query Editor, transformations, merge/append, data cleaning	
Case Title & Number	TB2: Chapter 7	
Pedagogy	NA	
	Lecture and Hands-on	
<b>Session 8</b>		
Objective of the session	Relationship between Tables	PLO7-14
	Data Modeling in Power BI	

Subtopics to be covered	Relationships, star schema	
Readings	TB2: Chapter 4	
Case Title & Number	NA	
Pedagogy	Lecture and Hands-on	
<b>Session 9</b>		
Objective of the session	Visualization	PLO7-14
Subtopics to be covered	Basic Visualizations	
Readings	Charts, tables, slicers	
Case Title & Number	TB2: Chapter 7	
Pedagogy	NA	
<b>Session 10</b>		
Objective of the session	Advanced Visualizations	PLO7-14
Subtopics to be covered	Advanced Visualizations	
Readings	Drill-downs, tree maps, waterfall	
Case Title & Number	Chapter 1, Chapter 2, and Chapter 7	
Pedagogy	NA	
<b>Session 11</b>		
Objective of the session	Data Analysis Expressions	PLO7-14
Subtopics to be covered	DAX Fundamentals	
Readings	Measures, calculated columns	
Case Title & Number	TB2: Chapter 7	
Pedagogy	NA	
<b>Session 12</b>		
Objective of the session	Dashboarding	PLO7-14
Subtopics to be covered	Dashboard Design	
Readings	UX, storytelling, best practices	
Case Title & Number	Chapter 1, Chapter 2, and Chapter 7	
Pedagogy	NA	
<b>Session 13</b>		
Objective of the session	GL-1	PLO1-PLO2
Subtopics to be covered	Industry Interaction	
Readings	Interaction with the industry expert	
Case Title & Number	NA	
Pedagogy	NA	
<b>Session 14</b>		
Objective of the session	Reading & Revision Week/ Examination Week*	
Subtopics to be covered	NA	

Readings	NA	
Case Title & Number	NA	
Pedagogy	NA	
<b>Session 15</b>		
	Reading & Revision Week/ Examination Week*	
Objective of the session	NA	
Subtopics to be covered	NA	
Readings	NA	
Case Title & Number	NA	
Pedagogy	NA	

\*Elective Endterm Examinations may take place in the last week of classes.

## Disability Support

JGU endeavours to make all its courses accessible to students. The Disability Support Committee (DSC) has identified conditions that could hinder a student's overall wellbeing. These include physical and mobility-related difficulties, visual impairment, hearing impairment, mental health conditions, and intellectual/learning difficulties, e.g., dyslexia and dyscalculia. Students with any known disability needing academic and other support are required to register with the Disability Support Committee (DSC) by following the procedure specified at <https://jgu.edu.in/disability-support-committee/>

Students who need support may register any time during the semester up until a month before the end semester exam begins. Those students who wish to continue receiving support from the previous semester, must re-register within the first month of a semester. Last-minute registrations and support might not be possible as sufficient time is required to make the arrangements for support.

The DSC maintains strict confidentiality about the identity of the student and the nature of their disability and the same is requested from faculty members and staff as well. The DSC takes a strong stance against in-class and out-of-class references made about a student's disability without their consent and disrespectful comments referring to a student's disability.

All general queries are to be addressed to [disabilitysupportcommittee@jgu.edu.in](mailto:disabilitysupportcommittee@jgu.edu.in)

***Disclaimer: This course outline including assessments, mode, nature and weightage of assessments, sessions, sequence of sessions and/or readings may be revised during the semester if such need arises.***