



**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

Jindal Global Business School
Course Outline

Course Title	Data Science with AI
Core or Elective	Elective
Program and Batch	BBA-2024, BBA-BA-2024, BBA-FB-2024, BBA-FM-2024
Semester & Academic Year	Fall 2026
Credits	3
Discipline/Area	Information Systems & Analytics
Name of the Faculty Member/Course Instructor	Dr. Apeksha Hooda Dr. Srinivas Jangirala
Contact Details of the Faculty Member	ahooda@jgu.edu.in sjangirala@jgu.edu.in
Contact Details of Support Staff	igbs-co@jgu.edu.in
Faculty Member's Open Office Day/s & Time	TBA

Introduction to the Course

In a world increasingly shaped by data and artificial intelligence, *Data Science with AI* offers participants a hands-on, business-oriented introduction to data-driven decision-making powered by conversational AI. This course combines foundational principles of statistics and data analysis with the capabilities of ChatGPT to help participants explore, visualize, and model real-world business data. Designed for undergraduate learners, the course requires a basic understanding of statistics and comfort with data interpretation. Through interactive sessions, case-based learning, and prompt engineering exercises, participants will learn how to clean data, generate insights, build predictive models, and craft compelling data narratives using ChatGPT. By the end of the course, participants will be able to critically evaluate AI-assisted outputs, solve business problems using data science tools, and develop end-to-end solutions with greater confidence and creativity. This course also lays a strong foundation for further studies in business analytics, machine learning, or AI product design. The course is designed for *continuous assessment*.

Prerequisites: Knowledge of basic statistics, and data analytics are must for this course. Prior experience with Python (Jupyter Notebook or Google Colab) is preferred.

Course Learning Objectives

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

1. CLO1 - Understand the fundamentals of data science and how conversational AI can support data-driven decision-making
2. CLO2 - Apply ChatGPT to perform key data science tasks such as data cleaning, analysis, visualization, and modelling
3. CLO3 - Critically evaluate outputs generated by ChatGPT and refine prompts to enhance analytical outcomes
4. CLO4 - Develop practical, business-oriented solutions using ChatGPT as a collaborative tool for data analysis and storytelling

Programme Competency Goals

BBA Programme Competency Goals (PCGs)		BBA Programme Learning Objectives (PLOs)
		Students will be able to
1	Responsible Global Citizenship: Ability to understand the interplay between local and global issues and to act with sensitivity towards ethical and social issues	1. Understand local business issues
		2. Understand global business issues
		3. Demonstrate sensitivity towards ethical issues
		4. Demonstrate sensitivity towards social issues
2	Effective communication: Ability to effectively exchange ideas and information	5. Present their ideas with clarity
		6. Write in a coherent manner
		7. Use technology for communication
3	Critical Thinking: Ability to identify, analyse business problems and propose effective solutions	8. Identify main issues of business problems
		9. Examine information from different sources
		10. Draw inferences from analysis
4	Teamwork: Ability to work and contribute effectively in group -settings	11. Understand the factors to work effectively in groups
		12. 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 – PLO4, PLO5, PLO8 –	PCG 1 – PCG3	A1

PLO10		
PLO1 – PLO2, PLO7, PLO8, PLO 10	PCG 1 – PCG3	A2
PLO3, PLO5 – PLO7, PLO8, PLO10, PLO11 – PLO12	PCG 1 – PCG4	A3
PLO1 – PLO4, PLO5 – PLO6, PLO8 – PLO10	PCG 1 – PCG3	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	Throughout this course	PLO1 – PLO4, PLO5
A2 Quiz	30%	Individual	15 th Session	PLO7, PLO8, PLO 10
A3 Group Project	30%	Group	In the last week of the course	PLO6, PLO11 – PLO12
A4 End term Assessment	30%	Individual	Last Teaching Week	PLO8 – PLO10

Description of Assessments:

A1- Active and constructive contribution to classroom discussion is evaluated through this component. The contribution can be verbal or through in-class activities.

A2 Quiz - The UMS based - quiz weighs 30% of total score. Participants must attempt the quiz in-class.

A3 Group Project- A final in-depth analysis of the project topic to be submitted as word file and to be presented in class at the end of the course. This component carries 30% weightage. The groups will work on a dataset of choice and fully analyse its components using ChatGPT and share the insights post-analyses. Group size will be decided in the class.

File type: Word

Font: Time New Roman

Font size: 12, single spaced

Length: As applicable

The word file should contain:

1. Title
2. Group member with JGU ID
3. Content Page
4. Introduction

5. Problem Statement
6. Analyses
7. Insights/Recommendations
8. References
9. Include page numbers

File type: PPT
 Length: 10 slides (Max.)

1. Title
2. Group member with JGU ID
3. Content Page
4. Introduction
5. Problem Statement
6. Analyses
7. Insights/Recommendations
8. Include slide numbers

Maintain PPT non-text heavy, to-the-point and brief representations of the answers. All members of the group should present.

Rubrics for Project Assessments

Criteria	Weight	Excellent (4)	Good (3)	Basic (2)	Poor (1)
Problem Definition & Business Relevance	5	Clear, well-defined problem with strong business relevance and justification	Problem defined with reasonable clarity	Problem somewhat unclear or weakly justified	Problem vague or irrelevant
Data Handling & Preparation	5	Data well-structured, cleaned, justified; strong understanding shown	Minor issues in cleaning or explanation	Limited cleaning or unclear handling	Poor or incorrect data handling
Use of AI (ChatGPT) & Prompting Quality	5	Advanced prompting; iterative refinement; clear evidence of critical use of AI	Good use of prompts with some refinement	Basic prompts used without depth	Over-reliance or blind use of AI
Analysis & Model Application	5	Appropriate methods applied; strong interpretation	Methods applied correctly with moderate	Limited or partially correct analysis	Incorrect or missing analysis

		of outputs	interpretation		
Insights & Recommendations	5	Deep, actionable, data-driven insights clearly linked to analysis	Relevant insights but limited depth	Generic insights with weak linkage	No meaningful insights
Presentation & Communication (Report + PPT + Viva)	5	Clear, structured, professional; all members contribute effectively	Well-presented with minor gaps	Basic presentation; uneven participation	Poor structure and communication

A4 End term assessment- The UMS based end term assessment will be of 30 marks of 1.5 hours duration.

Teaching Method

The course follows a highly interactive and application-driven pedagogy that blends lectures, live demonstrations, hands-on labs, and case-based discussions. Participants will actively engage with ChatGPT (free version) in real-time to explore data science concepts, build analytical workflows, and practice prompt engineering. Emphasis is placed on experiential learning through mini-projects, group activities, and reflection exercises. The approach is designed to foster curiosity, collaboration, and confidence in applying AI tools to real-world business problems.

Textbook / Other Readings

Textbook:

Provost, Foster, Fawcett, Tom. (2013). *Data Science for Business: What You Need to Know about Data Mining and Data-Analytic Thinking*. Sebastopol, California: O'Reilly.

Session Plan

Session Details	Topics	PLOs Covered
Session 1	Introduction to Data Science and ChatGPT	PLO1 – PLO2
Objective of the session	Introduce participants to the role of AI in data science, with a focus on ChatGPT.	
Subtopics to be covered	Course overview, Introduction to ChatGPT, Role of LLMs in analytics. Create ChatGPT Account with University ID.	
Readings	NA	
Case Title & Number	Competing on Analytics - HBS	
Pedagogy	Lecture, Demonstration, Prompt Walkthrough	
Session 2	Data Science Workflow & Prompt Engineering	PLO1 – PLO4
Objective of the session	Explore data science workflow and identify stages where ChatGPT can add value.	
Subtopics to be covered	CRISP-DM process, Prompt engineering fundamentals	

Readings	CRISP-DM documentation, OpenAI Prompt Engineering Guide (Latest version)	
Case Title & Number	NA	
Pedagogy	Lecture, Demonstration, Prompt-based coding	
Session 3	Data Collection with ChatGPT	PLO1 – PLO4
Objective of the session	Learn how to generate, access, and simulate datasets using ChatGPT.	
Subtopics to be covered	Data simulation, identifying data sources, role of prompts in data gathering. Mini activity: Generate a dataset for a fictional e-commerce store.	
Readings	OpenAI Cookbook – data simulation examples	
Case Title & Number	NA	
Pedagogy	Lecture, Demonstration, Prompt-based coding	
Session 4	Data Cleaning and Preprocessing	PLO1 – PLO4
Objective of the session	Understand how ChatGPT can support basic data cleaning and preprocessing.	
Subtopics to be covered	Handling missing values, renaming columns, type conversion	
Readings	NA	
Case Title & Number	Palmer Penguins Dataset	
Pedagogy	Lecture, Demonstration, Prompt-based coding	
Session 5	Exploratory Data Analysis – Part 1	PLO5 – PLO7
Objective of the session	Perform basic descriptive analysis and pattern recognition using ChatGPT.	
Subtopics to be covered	Summary statistics, distributions	
Readings	NA	
Case Title & Number	NA	
Pedagogy	Lecture, Demonstration, Prompt-based coding	
Session 6	Exploratory Data Analysis – Part 2	PLO5 – PLO7
Objective of the session	Visualize relationships and trends in data using ChatGPT-generated code.	
Subtopics to be covered	Correlation plots, trend analysis, visual insights	
Readings	NA	
Case Title & Number	NA	
Pedagogy	Lecture, Demonstration, Prompt-based coding	
Session 7	Guest Lecture 1	PLO1 – PLO10
Objective of the session	Generative AI in Industry	
Subtopics to be covered	Guest Lecture: ML in product management Mr Ankur Hooda, HR Head, Deloitte	
Readings	NA	

Case Title & Number	NA	
Pedagogy	Lecture, Demonstration, Prompt-based coding	
Session 8	Prompting Do's and Don'ts: Best Practices with ChatGPT	PLO5 – PLO10
Objective of the session	Equip participants with practical skills to craft clear, ethical, and effective prompts for business analytics	
Subtopics to be covered	Prompt clarity, specificity, and structure	
Readings	NA	
Case Title & Number	NA	
Pedagogy	Lecture, Demonstration, Prompt-based coding	
Session 9	Introduction to Supervised Learning	PLO5 – PLO7
Objective of the session	Introduce basic classification models	
Subtopics to be covered	Classification vs. regression, prompts	
Readings	NA	
Case Title & Number	Participants can use dataset of choice from Kaggle	
Pedagogy	Lecture, Demonstration, Prompt-based coding	
Session 10	Model Evaluation and Interpretation	PLO5 – PLO10
Objective of the session	Evaluate model performance and interpret outputs using ChatGPT prompts	
Subtopics to be covered	Confusion matrix, feature importance, explainability	
Readings	NA	
Case Title & Number	NA	
Pedagogy	Lecture, Demonstration, Prompt-based coding	
Session 11	Regression Modelling with ChatGPT	PLO5 – PLO7
Objective of the session	Apply linear regression to business problems using ChatGPT	
Subtopics to be covered	Regression setup, residuals, R-squared	
Readings	NA	
Case Title & Number	Gapminder	
Pedagogy	Lecture, Demonstration, Prompt-based coding	
Session 12	Model Selection and Tuning	PLO5 – PLO7
Objective of the session	Compare models and apply prompt-based tuning techniques	
Subtopics to be covered	Cross-validation, model tuning	
Readings	NA	
Case Title & Number	NA	
Pedagogy	Lecture, Demonstration, Prompt building contest	
Session 13	Clustering and Segmentation	PLO5 – PLO7

Objective of the session	Use ChatGPT to perform unsupervised learning tasks like clustering	
Subtopics to be covered	K-means, segment profiling	
Readings	NA	
Case Title & Number	https://archive.ics.uci.edu/dataset/837/product+classification+and+clustering	
Pedagogy	Lecture, Demonstration, Prompt-based coding	
Session 14		
Objective of the session	Topic Modelling	PLO5 – PLO7
Subtopics to be covered	Understand text preprocessing and generate models with ChatGPT	
Readings	Text cleaning, tokenization, TF-IDF, Apply LDA	
Case Title & Number	NA	
Pedagogy	Custom textual dataset	
	Lecture, Demonstration, Prompt-based coding	
Session 15		
Objective of the session	Quiz	PLO7, PLO8, PLO 10
Subtopics to be covered	Mid-semester quiz	
Readings	Evaluation of topics covered till session 14	
Case Title & Number	NA	
Pedagogy	NA	
Session 16		
Objective of the session	Business Storytelling with ChatGPT	PLO1 – PLO10
Subtopics to be covered	Structure and present insights as data stories using ChatGPT	
Readings	Narrative framing, storytelling prompts	
Case Title & Number	https://www.mckinsey.com/industries/technology-media-and-telecommunications/our-insights/the-data-driven-future-of-storytelling-mits-deb-roy-on-the-message-and-the-medium	
Pedagogy	NA	
	Lecture, Demonstration, Prompt-based coding	
Session 17		
Objective of the session	Survey Design with ChatGPT	PLO5 – PLO8
Subtopics to be covered	Learn to design effective and structured surveys for business research using ChatGPT	
Readings	Generating structured questions (Likert scales, open-ended, MCQs)	
Case Title & Number	Questionnaire Design Tip Sheet - Harvard University	
Pedagogy	Designing a Customer Feedback Survey for a Food Delivery App (Simulated)	
	Lecture, Demonstration, Prompt-based coding	

Session 18	Analysis of Survey with ChatGPT	PLO8 – PLO10
Objective of the session	Use ChatGPT to analyze and interpret data from surveys	
Subtopics to be covered	Descriptive analysis of survey responses	
Readings	NA	
Case Title & Number	NA	
Pedagogy	Lecture, Demonstration, Prompt-based coding	
Session 19	Guest Lecture 2	PLO1 – PLO10
Objective of the session	Generative AI in Industry	
Subtopics to be covered	Guest Lecture: Data Science in industry Mr Sachin Mohan, Group Manager, Aon Hewitt	
Readings	NA	
Case Title & Number	NA	
Pedagogy	Lecture, Demonstration, Prompt-based coding	
Session 20	Experimental Design with ChatGPT	PLO1 – PLO10
Objective of the session	Understand the structure of business experiments and use ChatGPT to plan and document them	
Subtopics to be covered	Using ChatGPT to simulate hypotheses and test plans	
Readings	NA	
Case Title & Number	NA	
Pedagogy	Lecture, Demonstration, Prompt-based coding	
Session 21	Analysis of Experimental Data with ChatGPT	PLO1 – PLO10
Objective of the session	Use ChatGPT to analyze and interpret data from experiments	
Subtopics to be covered	Interpreting experiment results (mean difference, t-test)	
Readings	NA	
Case Title & Number	NA	
Pedagogy	Lecture, Demonstration, Prompt-based coding	
Session 22	Comparing Generative AI Tools	PLO1 – PLO10
Objective of the session	Enable participants to critically compare ChatGPT with other generative AI models in terms of features, capabilities, and applications	
Subtopics to be covered	Overview of leading tools: ChatGPT (OpenAI), Gemini (Google), Claude (Anthropic), Copilot (Microsoft)	
Readings	NA	
Case Title & Number	NA	
Pedagogy	Lecture, Demonstration, Prompt-based coding	

Session 23	Prompt-Based Image Generation with ChatGPT	PLO8 – PLO10
Objective of the session	Learn how to generate visuals using text prompts via ChatGPT and integrated tools like DALL·E	
Subtopics to be covered	Fundamentals of prompt design for images (scene, style, perspective)	
Readings	NA	
Case Title & Number	NA	
Pedagogy	Group activity: Design a visual ad/poster using DALL·E via ChatGPT	
Session 24	Design a movie recommender system	PLO8 – PLO10
Objective of the session	A recommender system prompt-generate with ChatGPT	
Subtopics to be covered	Exercise covering learning from previous sessions	
Readings	NA	
Case Title & Number	NA	
Pedagogy	Lecture, Demonstration, Prompt-based coding	
Session 25	Ethics and Responsible AI Final project report and PPT submission	PLO1 – PLO4
Objective of the session	Reflect on ethical issues related to AI and prompts	
Subtopics to be covered	Bias, prompt misuse, fairness	
Readings	NA	
Case Title & Number	NA	
Pedagogy	Lecture, Demonstration, Prompt-based coding	
Session 26	Advanced applications & Revision	PLO1 – PLO10
Objective of the session	Discuss advanced application of generative AI in industry	
Subtopics to be covered	Industry specific examples	
Readings	Revisions prior to end-term	
Case Title & Number	NA	
Pedagogy	Lecture, Demonstration, Prompt-based coding	
Session 27	Final Project Presentation	PLO3, PLO5 – PLO7, PLO8, PLO10, PLO11 – PLO12
Objective of the session	Presentations of final project	
Subtopics to be covered	Presentation and Brief project report	
Readings	NA	
Case Title & Number	NA	
Pedagogy	Lecture, presentation, hands-on & discussion	

Session 28	End Term Assignment	PLO1 – PLO4, PLO5 – PLO6, PLO8 – PLO10
Objective of the session	Final assignment of the continuous assessment	
Subtopics to be covered	NA	
Readings	NA	
Case Title & Number	NA	
Pedagogy	NA	
Session 29	Reading & Revision Period	PLO1 – PLO12
Objective of the session	Course Revision	
Subtopics to be covered	NA	
Readings	NA	
Case Title & Number	NA	
Pedagogy	NA	
Session 30	Reading & Revision Period	PLO1 – PLO12
Objective of the session	Course Revision	
Subtopics to be covered	NA	
Readings	NA	
Case Title & Number	NA	
Pedagogy	NA	

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 well-being. 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