Semester: 2				
Programme: Data Science, Multidisciplinary Course for the Humanities Students				
Course: Gen AI and Data Stories				
Paper code: M1DS250211P				**Credits: 3**
Hours/week: 3				
Category: Core/MDC/SEC/VAC: Multidisciplinary Course				
Theory / Practical / Composite: Practical				
No of Module: 1				
Course Outcome:				
1. **Remember** the fundamental definitions of Artificial Intelligence, the core capabilities and limitations of Large Language Models (LLMs), and the primary tools used for text, image, audio, and video generation.				
2. **Understand** the conceptual framework of data storytelling, including the role of data in the humanities, basic descriptive statistics, and the design principles used for creating data-driven narratives.				
3. **Apply** diverse prompt engineering strategies—such as zero-shot, few-shot, and role-based prompting—to generate, transform, and refine multimodal content across different AI formats.				
4. **Analyze** structured and unstructured datasets by performing cleaning and transformation tasks to develop clear, insightful visualizations and interactive dashboards using tools like Power BI and Excel.				
5. **Evaluate** the ethical implications, biases, and limitations of AI-generated responses through real-world case studies to ensure the responsible use of AI in academic and professional settings.				
6. **Create** comprehensive, integrated data stories by synthesizing AI-generated content with interactive data visualizations in a capstone mini-project to communicate complex insights effectively.				
Prerequisites: ***Basic knowledge about any prior course***				
SYLLABUS				
UNIT	**CONTENT**	**HOURS or NUMBER OF CLASSES**	**CO Mapping**	**COGNITIVE LEVEL**
1.	**Introduction to AI Concepts** Importance of data in the context of humanities. Basics of Artificial Intelligence and Applications. Generative AI Fundamentals - Large Language Models: Overview and key features, Capabilities and limitations of current GenAI systems, Overview of text, image, audio, and video generation tools.	3	CO1	K1
2.	**Prompt Engineering Techniques**	13	CO3	K3

	Understanding prompts, Prompt Design Strategies (Zero-shot prompting, One-shot prompting, Few-shot prompting, Instruction-based prompting, Question-answer formatting, Role-based prompting, Persona-driven prompting), Reasoning and Thought Process Prompts, Content generation transformation techniques-content rewriting, Tone control, style adaptation, structured output, Multimodal prompts (text-to-image, text-to-audio/video, image-to-caption).			
3.	**Data Storytelling and Visualization** Structured vs. unstructured data, Basics of descriptive statistics for storytelling. Importing and transforming data, Cleaning and shaping data, Creating basic visualizations using filters, slicers, and dashboards, Design principles for dashboards, Data-driven narratives.	20	CO2, CO4	K2, K4
4.	**Capstone Mini-Project:** Combine AI-generated text and a Power BI dashboard to present insights from datasets.	4	CO6	K6
5.	**Ethics, Bias & Responsible AI** **AI Ethics Foundations:** Ethical frameworks for AI usage, AI in humanities: opportunities and risks. **Bias and Limitations of AI:** Sources of bias, misinformation, hallucinations, Plagiarism and academic integrity. **Responsible Use and Policy:** Privacy, copyright, and intellectual property issues, Case studies	3	CO5	K5

Suggested readings

1. Rehmani, Altaf. (n.d.): *Generative AI for Everyone: Understanding the Essentials and Applications of this Breakthrough Technology*.
2. Choudhury, Ridip Dev and Pathak, Nabankur. (n.d.): *Generative AI for Everyday Life*. SWAYAM Course.
3. Dale, R. (2023). *Generative AI: What Everyone Needs to Know*. Oxford University Press.

4. Schwabish, Jonathan. (n.d.): *Data Visualization in Excel: A Guide for Beginners, Intermediates, and Wonks*. AK Peters Visualization Series.		
Evaluation	Through Continuous Internal Assessments	

Course outcomes (COs) and Cognitive Level Mapping

COs	CO Description	Cognitive levels
CO1	**Remember** the fundamental definitions of Artificial Intelligence, the core capabilities and limitations of Large Language Models (LLMs), and the primary tools used for text, image, audio, and video generation.	K1
CO2	**Understand** the conceptual framework of data storytelling, including the role of data in the humanities, basic descriptive statistics, and the design principles used for creating data-driven narratives.	K2
CO3	**Apply** diverse prompt engineering strategies—such as zero-shot, few-shot, and role-based prompting—to generate, transform, and refine multimodal content across different AI formats.	K3
CO4	**Analyze** structured and unstructured datasets by performing cleaning and transformation tasks to develop clear, insightful visualizations and interactive dashboards using tools like Power BI and Excel.	K4
CO5	**Evaluate** the ethical implications, biases, and limitations of AI-generated responses through real-world case studies to ensure the responsible use of AI in academic and professional settings.	K5
CO6	**Create** comprehensive, integrated data stories by synthesizing AI-generated content with interactive data visualizations in a capstone mini-project to communicate complex insights effectively.	K6