An Autonomous Institute
Affiliated to VTU, Belagavi
Approved by AICTE, New Delhi
Recognized by UGC under 2(f) & 12 (B)

B.E, I Semester, Computer Science and Engineering

Semester: I			
AI Skill Lab			
Course Code:	MVJ26SKL111	**CIE Marks:**	100
L: T:P:S	0:0:2:0	**SEE Marks:**	0
Credits:	1	**Total:**	100
Hours:	2 Hours Practical	**SEE Duration:**	0

Course Objectives:

This course will give ability to:

- Introduce the concepts, capabilities, and applications of LLMs and Generative AI across multiple modalities.
- Develop the ability to design clear, structured, and effective prompts for obtaining task-specific AI-generated outputs.
- Develop practical skills in applying prompt engineering techniques to academic, professional, data analysis, and multimodal tasks.
- Develop the ability to decompose complex tasks, and construct effective prompt-based workflows using AI tools.
- Develop critical evaluation skills for assessing the accuracy, reliability, bias, and limitations of AI-generated outputs.
- Promote ethical, responsible, and secure use of Generative AI with awareness of privacy, copyright, plagiarism, misinformation, and human oversight.

Sr. No	Experiments
1	Identify LLMs and Generative AI tools across text, image, audio, video, code, presentation, research, and document analysis, and understand their capabilities and applications.
2	Analyze the difference between clear and unclear prompts and examine how clarity, specificity, context, and instructions influence the quality and relevance of AI-generated responses. Analyse based on the given context .
3	Identify the key components of effective prompts—role, domain, context, and constraints and analyze their impact on AI-generated responses.
4	Apply prompting techniques such as zero-shot, one-shot, few-shot, and role-based prompting, and compare their effectiveness for different tasks.
5	Apply prompt engineering techniques to academic and professional tasks such as summarization, information extraction, translation, email drafting, and grammar checking of reports.
6.	Apply prompting techniques for debugging and optimization of code for a computational problem.
7.	Explore prompting techniques for multimodal AI systems using text, images, and documents as inputs for generation, analysis, summarization, and information extraction.

8.	Apply structured prompting techniques to analyze datasets, identify patterns and trends, extract insights and generate appropriate visualizations.
9.	Decompose complex tasks into smaller and manageable subtasks and develop a sequence of interconnected prompts to generate structured and comprehensive AI-assisted solutions.
10.	Evaluate AI-generated outputs based on accuracy, relevance, completeness, consistency, bias, and reliability, and verify generated information and references using trustworthy sources.
11.	Develop awareness of the ethical and responsible use of Generative AI, with emphasis on privacy, copyright, plagiarism, bias, misinformation, hallucinations, data security, and human oversight.
12.	Apply prompt engineering and Generative AI techniques to develop an AI-assisted solution for a selected academic or real-world problem.

Course Outcomes:

The student will be able to:

CO1: Identify and use LLMs and Generative AI tools across text, image, audio, video, and document-based applications.

CO2: Design and apply effective prompting techniques, including zero-shot, few-shot, role-based, and structured prompting, for diverse tasks.

CO3: Apply prompt engineering techniques for content creation, code debugging, multimodal processing, and data analysis.

CO4: Evaluate and verify AI-generated outputs for accuracy, relevance, reliability, bias, and consistency using trustworthy sources.

CO5: Develop AI-assisted solutions to academic or real-world problems while adhering to ethical, responsible, and secure Generative AI practices.

CO-PO Mapping:

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2
CO1	2	1	1		2								
CO2	2	1	1		2								
CO3	2	2	2	1	2								2
CO4	2	2	2	1	2								2
CO5	2	2	2	2	2			2					2

High-3: Medium-2: Low-1 :