Sri SAIRAM COLLEGE OF ENGINEERING
Anekal, Bengaluru

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Department of Artificial Intelligence and Machine Learning

20.09.2025

Submitted,

Sub: Report – Five days National Level online FDP on **"ADVANCING WITH AGENTIC AI & PROMPT ENGINEERING: NEXT-GEN CAPABILITIES FOR TEACHING & RESEARCH"** - Reg.,

The Department of Artificial Intelligence and Machine Learning, in collaboration with the AI Club of the AIML Department of our college, organized a **five-day National Level Online Faculty Development Program (FDP)** titled **"Advancing with Agentic AI & Prompt Engineering: Next-Gen Capabilities for Teaching & Research"**, held from 15th to 19th September 2025.

The program commenced with a warm welcome address by **Dr. C. Sivaprakash**, Head of the Department of AIML, followed by the presidential address delivered by **Dr. B. Shadaksharappa**, Principal of Sri Sairam College of Engineering, Anekal, Bengaluru. Both dignitaries highlighted the importance of up skilling faculty in emerging technologies and fostering a research-driven academic culture.

The FDP was inaugurated with an insightful session by **Dr. C. Gunasundari**, Assistant Professor, School of Computing, SRM Institute of Science and Technology, Tiruchirappalli. She delivered a comprehensive overview of Generative AI models, Prompt Engineering, and Agentic AI, emphasizing their growing relevance, wide-ranging applications, and transformative impact on education, industry, and research.

She also discussed how AI tools such as LLMs (Large Language Models) and Agentic Systems are revolutionizing the way knowledge is created, disseminated, and utilized. The session encouraged participants to explore the integration of these technologies into curriculum design, academic research, and classroom teaching to better prepare students for future technological landscapes.

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DAY 1 (15.09.2025)

Mrs. Shravanthi, Senior AI Specialist, Ford Motor Company, Bangalore delivered session about LLMs - Types, Limitations & RAG. She began by explaining the fundamentals of LLMs (Large Language Models), SLMs (Small Language Models), and MLMs (Masked Language Models), highlighting their architecture, training methodologies, and use cases. She emphasized the distinction between these models and their respective roles in different AI applications.

The session provided a comparative analysis of major AI models developed by industry leaders such as OpenAI (e.g., GPT series), Google (e.g., PaLM, Gemini), Anthropic (Claude series), and Meta (LLaMA series). Mrs. Shravanthi highlighted the strengths, unique capabilities, and limitations of each model, including aspects like contextual understanding, hallucination, scalability, and inference efficiency.

One of the key highlights of the session was her detailed explanation of the inherent limitations of LLMs, particularly their static knowledge cut-off, which affects their ability to retrieve real-time or domain-specific information. To address this, she introduced the concept of Retrieval-Augmented Generation (RAG)—a powerful technique that combines traditional language models with external data retrieval mechanisms to generate more accurate and contextually rich responses.

Ms. Shravanthi elaborated on the RAG architecture, detailing its components such as the retriever, encoder, and generator modules. She demonstrated how RAG pipelines enable LLMs to dynamically fetch relevant documents from a knowledge base and incorporate them into generated responses, significantly enhancing the model's performance and factual accuracy.

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DAY 2 (16.09.2025)

Day 2 session of the FDP was delivered by **Dr. S. Umarani**, Professor, Department of Computer Applications, SRM Institute of Science and Technology, Ramapuram Campus, Chennai. She provided a clear and concise introduction to the key concepts of Artificial Intelligence (AI), Machine Learning (ML), Deep Learning (DL), and Large Language Models (LLMs), explaining how each layer builds upon the other. She effectively highlighted the evolution from early NLP approaches to modern LLMs, emphasizing the advancements in language understanding and contextual generation. Dr. S. Umarani also introduced the concept of Prompt Engineering, explaining its significance in guiding LLM outputs. She elaborated on various prompting techniques such as zero-shot, one-shot, few-shot, and role-based prompting, along with best practices for crafting effective prompts. The session concluded with a discussion on the real-world applications of LLMs in various fields, ethical considerations, and an interactive Q&A session that reflected the participants' strong interest in the topic.

The session was continued by **Mr. Niranjan**, Technical Educator at Adore Technology Solutions, Chennai, who conducted an engaging hands-on session on Prompt Engineering. He practically demonstrated key prompting techniques, including role-based prompting, zero-shot prompting, one-shot prompting, and persona-based prompting. Through live examples, he highlighted how specific and well-structured prompts yield more accurate and contextually relevant responses from LLMs, whereas vague prompts often result in less meaningful outputs. He also showcased how these prompting strategies interact with LLMs in real-time, offering valuable insights into optimizing AI-generated responses for various applications.

DAY 3 (17.09.2025)

Day 3, Session 1 was conducted by resource persons **Dr. Paramesh**, a distinguished academician and accomplished data science professional, currently serving as Assistant Professor and Placement Vertical Head at RACE (REVA Academy for Corporate Excellence), REVA University, Bengaluru, led an engaging session on AI agents. He began with interactive icebreaker questions that energized participants and encouraged active involvement throughout the session. He explained the fundamental concepts of AI agents, detailing how they function and the essential components of AI agent architecture, including perception, reasoning, decision-making, and action modules, in a clear and accessible manner.

He introduced the concept of Agentic AI, describing it as a next-generation AI capable of autonomous decision-making, continuous learning from its environment, and goal-oriented behaviour. Furthermore, he discussed practical applications of Agentic AI in various domains such as robotics, autonomous vehicles, and intelligent assistants, emphasizing its potential to revolutionize both research and real-world problem solving. The session also covered challenges in designing effective AI agents, including ethical considerations and the need for robust control mechanisms.

Day 3, Session 2 was conducted by two resource persons, **Dr. Priyadharsini C** and **Ms. Sasikala L**, both Assistant Professors from Tiruchirappalli. Ms. Sasikala provided a detailed overview of Agentic AI frameworks, explaining their architecture and functionalities. She highlighted the transformative role of Agentic AI in education, showcasing how autonomous AI agents can personalize learning experiences, assist educators in curriculum development, and facilitate adaptive assessment methods to enhance student engagement and outcomes.

Dr. Priyadharsini then focused on the classification of Agentic AI in the context of research, explaining different categories based on autonomy, learning capabilities, and interaction modes. She introduced several open-source tools designed specifically to automate literature reviews, streamline data extraction, and support scientific discovery through intelligent analysis. Dr. Priyadharsini also discussed how Agentic AI accelerates research workflows by enabling automated hypothesis generation, experiment design, and data interpretation, thus empowering researchers to focus on higher-level critical thinking and innovation.

DAY 4 (18.09.2025)

Day 4, Session was given by **Dr. Paramesh**, a distinguished academician and accomplished data science professional currently serving as Assistant Professor and Placement Vertical Head at RACE (REVA Academy for Corporate Excellence), REVA University, Bengaluru, delivered an insightful session on Intelligent Automation. He began by clearly distinguishing intelligent automation from traditional automation, emphasizing how the integration of AI enables systems to perform complex tasks with decision-making capabilities, learning, and adaptability, rather than merely executing pre-defined rules.

Dr. Paramesh introduced the top five AI tools commonly used to build Agentic AI systems, highlighting their features, strengths, and practical applications in various industries. He also explained the key differences between single-agent systems and multi-agent systems, focusing on aspects such as collaboration, communication, and distributed problem-solving among agents.

To reinforce the theoretical concepts, he conducted a hands-on session using the n8n tool, an open-source workflow automation platform. Participants were guided through creating automated workflows integrating AI components, demonstrating how intelligent automation can streamline complex processes efficiently. The session offered practical insights into designing scalable agentic AI solutions and sparked enthusiastic discussions on potential use cases in academia and industry.

DAY 5 (19.09.2025)

Day 5, Session1 was conducted by **Dr. Karthiya Banu**, a passionate academician and industry leader with a Ph.D. in Computer Science from Sathyabama University, Chennai, delivered an engaging session on the role of Agentic AI in teaching and learning. She explained that unlike traditional AI tools, Agentic AI systems act as autonomous, goal-directed agents capable of making decisions and adapting their behavior to achieve specific educational objectives, rather than functioning as passive assistants.

She highlighted several key capabilities of Agentic AI in education, such as its ability to analyze student performance in real-time, identify individual learning gaps, suggest personalized learning activities, and dynamically adjust instruction based on the learner's progress.

Day 5, Session2 was conducted by **Dr. S. Umarani**, Professor in the Department of Computer Applications at SRM Institute of Science and Technology, Chennai, delivered an insightful session on the Importance of Prompt Engineering in Research and Academia. She emphasized how prompt engineering empowers researchers and academicians to effectively leverage AI tools, particularly large language models, in various stages of the research process. This includes automating literature reviews, generating research hypotheses, assisting with data analysis, and enabling the summarization of complex academic content. Dr. Umarani highlighted that with well-crafted prompts, AI can serve as a valuable intellectual partner, enhancing productivity, reducing manual effort, and supporting innovation in scholarly work.

The FDP concluded with a valedictory address by **Dr. C Sivaprakash**, HOD of AIML Department of Sairam Institutions. He appreciated the dedication of the organizing team and the enthusiastic participation of attendees. Dr. C Sivaprakash reflected on the FDP's impact in igniting interest in Agentic AI, Prompt Engineering and Generative AI among faculty and He encouraged participants to apply the acquired knowledge in both teaching and research.

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We Thank the Management, Principal, HOD of AIML department, for their support and motivation for conduction of this online FDP successfully

Your's Sincerely

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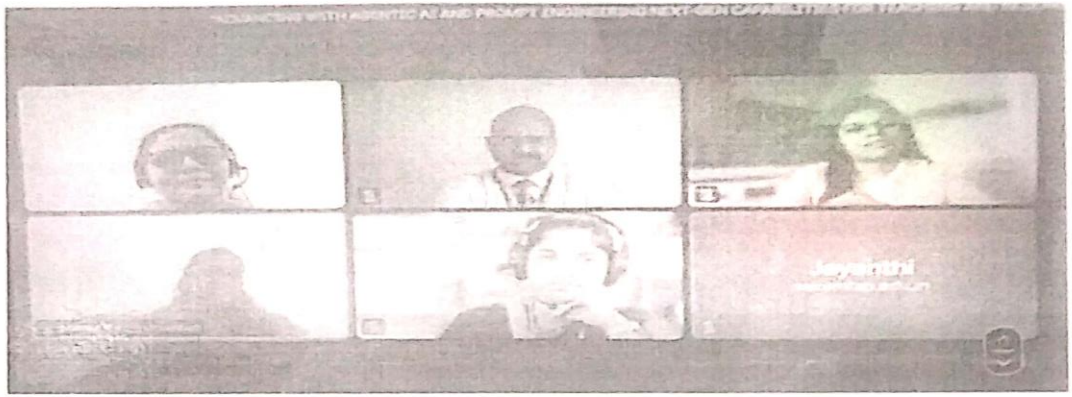
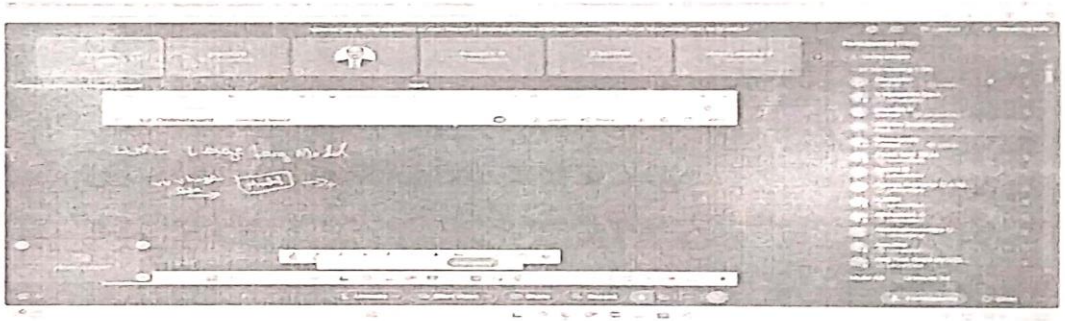
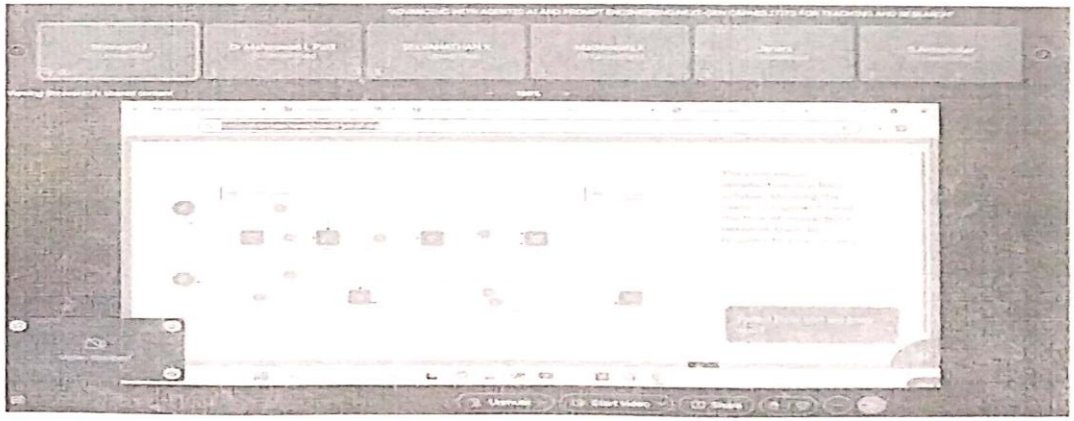
Glimpse of the Event – Day 1







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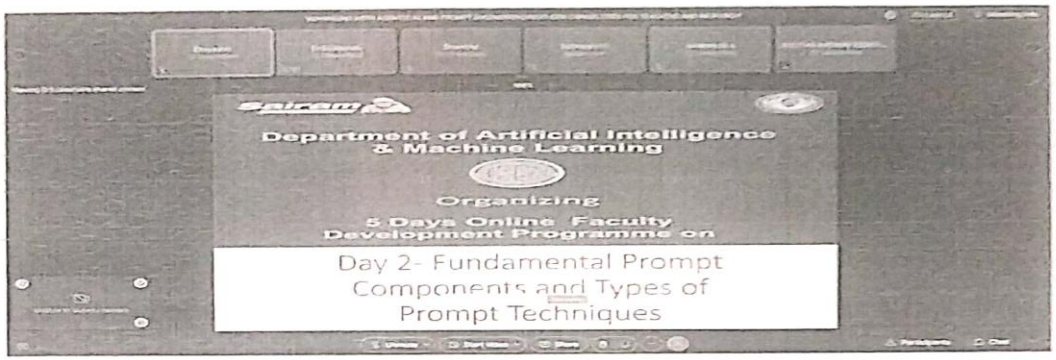
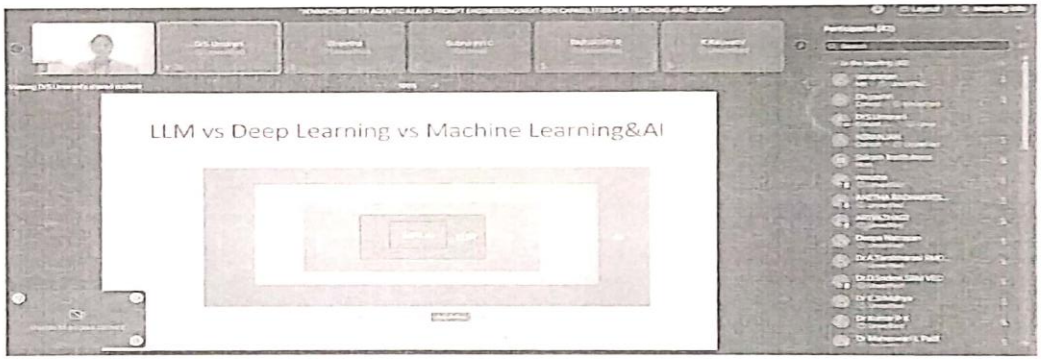
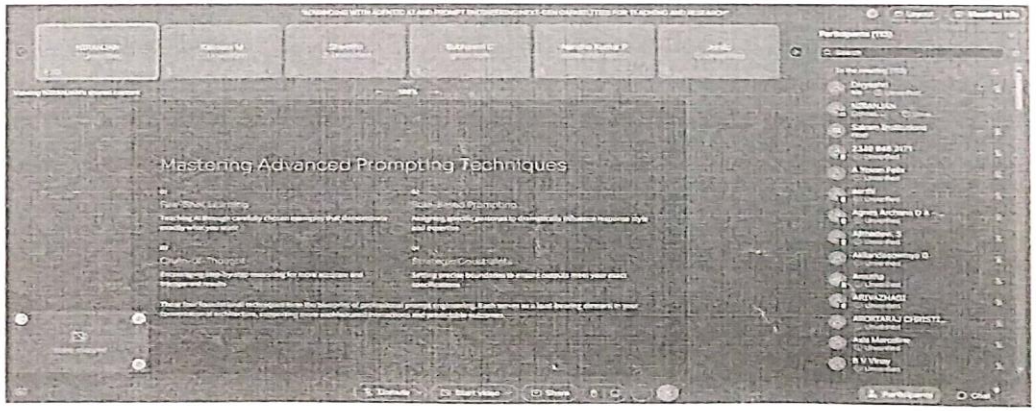
DAY 2







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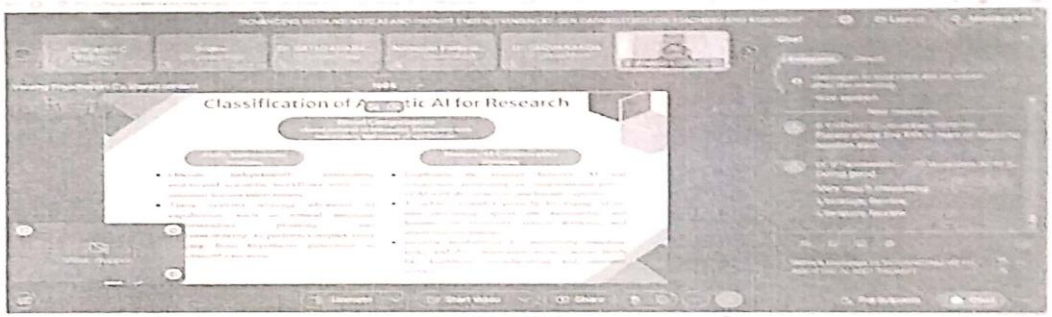
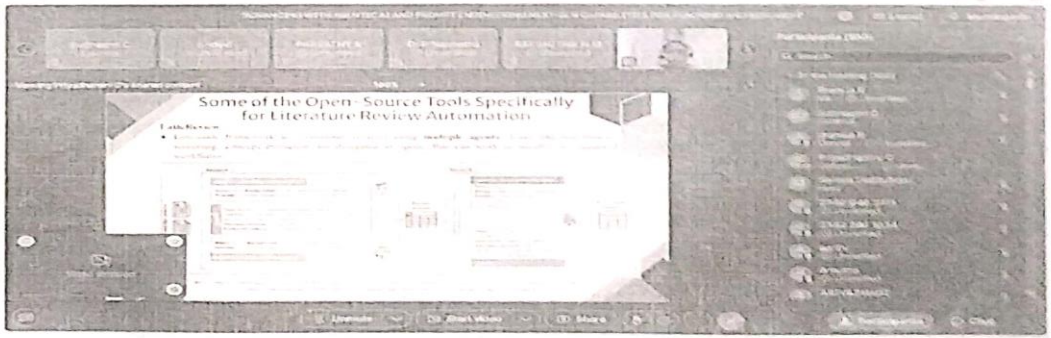
DAY 3





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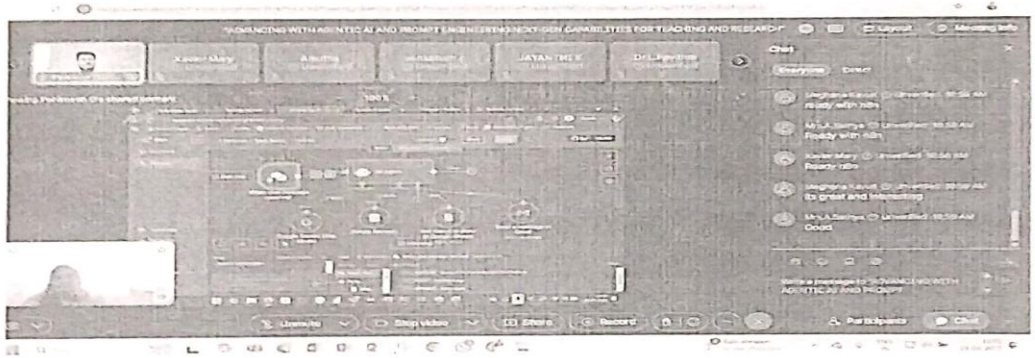
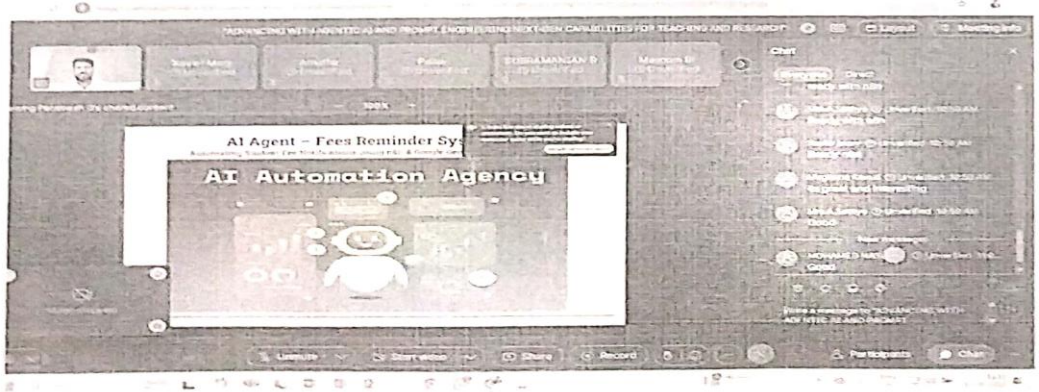
DAY 4





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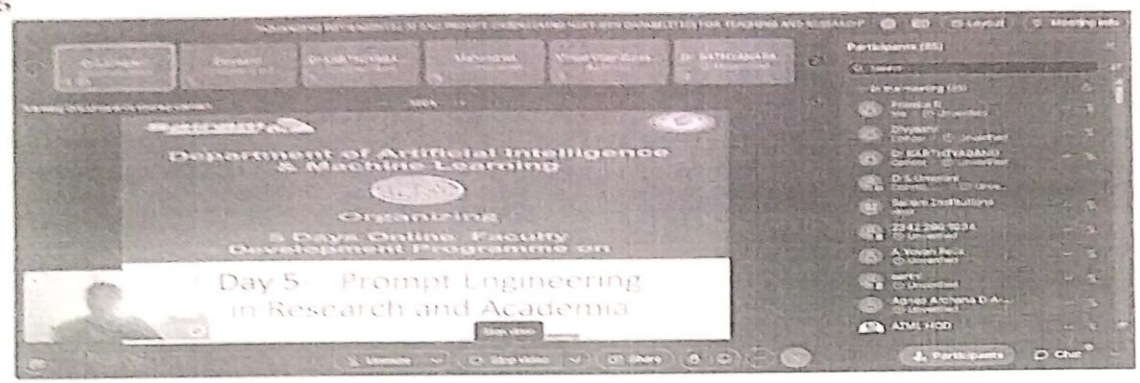
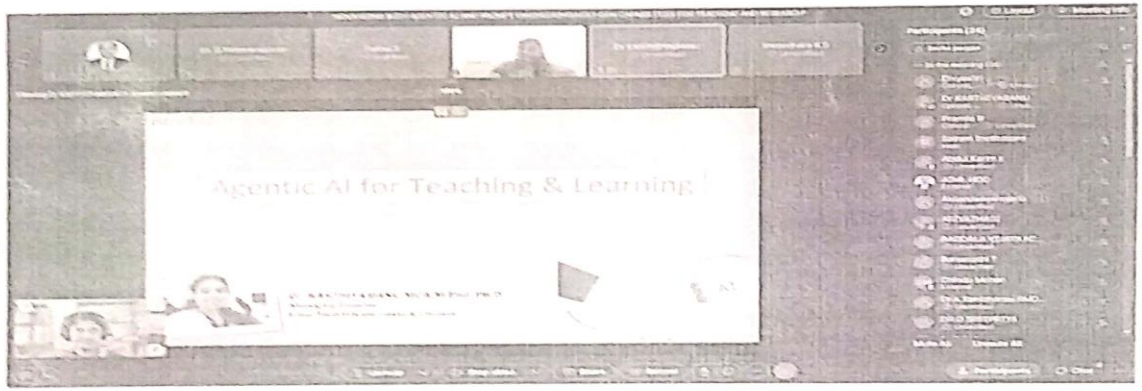
DAY 5





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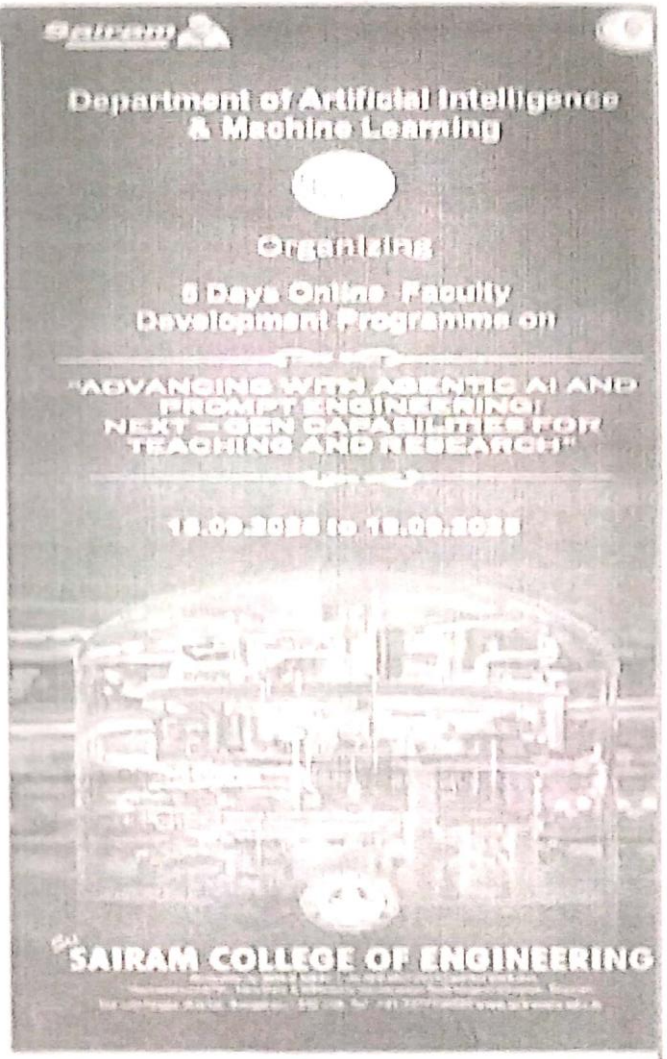
Chief Patron

Patron

Session Details



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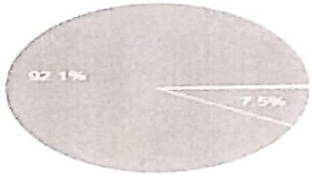
Session 1

How effective was the resource person in delivering the content ?
239 responses

Was the session duration appropriate?
239 responses



How satisfied are you with the learning outcomes from the session?
239 responses

Average rating (4.67)

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Session 2

How relevant was the content to your academic / professional work?

How effective was the resource person in delivering the content?

Was the session duration appropriate?

How satisfied are you with the learning outcomes from the session?

Average rating (4.59)

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Session 3

Was the session duration appropriate?

How satisfied are you with the learning outcomes from the session?

Average rating (4.61)

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Session 4

How satisfied are you with the learning outcomes from the session?

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Session 5

How satisfied are you with the learning outcomes from the session?

Average rating (4.68)

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Session 6

How relevant was the content to your academic/professional work?

Was the session duration appropriate?

How satisfied are you with the learning outcomes from the session?

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Session 7

How relevant was the content to your academic/professional work?

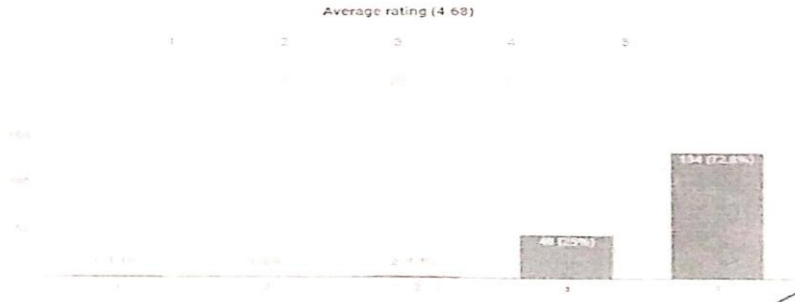
184 responses

Was the session duration appropriate?

184 responses

How satisfied are you with the learning outcomes from the session?

184 responses



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