

Agentic AI Systems

Course Structure & Learning Framework



Earnify-Edu

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Why This Program Exists

Artificial Intelligence is evolving rapidly. The most valuable applications today are no longer isolated tools, but intelligent systems that can plan, make decisions, and execute tasks across multiple steps. This program is designed to give learners a clear and practical understanding of how such systems work and how they are designed.

Course Synopsis	The Agentic AI Program is a live, structured training that teaches how modern AI systems are designed to plan, decide, and execute tasks autonomously. Students learn prompt engineering, agent workflows, automation, and integration with real tools to build practical AI solutions. The course focuses on understanding how intelligent systems work rather than just using AI tools. By the end, learners can design and implement real-world AI agents and workflows			
Course Learning Objectives	By the end of this program, learners will be able to: 1. Understand the structure and working of agent-based AI systems. 2. Design multi-step AI workflows that plan and execute tasks autonomously. 3. Apply prompt engineering techniques to control and guide AI behavior. 4. Integrate AI agents with APIs, tools, and automation platforms (e.g., n8n). 5. Implement knowledge retrieval and context handling in AI applications. 6. Evaluate, debug, and optimize AI outputs for reliability and accuracy. 7. Build and deploy a practical real-world AI agent solution.			
Course Schedule	Monday (19:30 – 20:25) Wednesday (19:30 – 20:25) Friday (19:30 – 20:50)			
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Details on Innovative T&L practices:

No.	Type	Implementation
1.	Active learning	Students learn by doing: during live sessions they build, test, and debug AI agents through guided tasks and real-time problem solving, reinforcing understanding of how intelligent systems work.
2.	Cooperative learning	Students collaborate in small groups to design and build AI agent workflows. They discuss approaches, divide tasks, and solve problems together during activities. Peer review and shared projects strengthen understanding and teamwork skills.
3.	Blended learning	The course combines live instructor-led sessions with structured LMS-based learning materials. Students attend interactive classes and then reinforce concepts through recordings and resources. Assignments and practice tasks are completed online between sessions. This approach supports continuous learning beyond live classroom time.



Module 1 — Foundations of Agentic AI

This module builds the mental model of agent-based AI. Instead of seeing AI as a chatbot, you will understand how intelligent systems interpret goals, make decisions, and execute actions step-by-step

What you will do

- Break down real AI applications into workflows
- Define goals and tasks for an agent
- Map decision flow of an AI system
- Set up the working environment

Outcome

After this module you can explain how autonomous AI systems operate and think in workflows instead of prompts.

Tools used

-  Claude
-  Notion Ai
-  Miro (workflow diagrams)

Module 2 — Prompt Engineering & Control

You will learn how prompts act as instructions that shape reasoning, reliability, and output structure. The focus is on predictable and repeatable results.

What you will do

- Write structured prompts
- Guide reasoning step-by-step
- Prevent incorrect outputs
- Create reusable prompt templates

Outcome

After this module you can reliably control AI outputs for consistent results.

Tools used

-  Claude
-  PromptLayer
-  Chat GPT

Module 3 — Agent Architecture

This module explains how agents are internally structured using planners, memory, tools, and execution logic. You will move from single responses to multi-step systems.

What you will do

- Design an agent workflow
- Define tasks and actions
- Simulate multi-step decision making
- Build mini agent systems

Outcome

After this module you can design a working agent workflow instead of isolated prompts.

Tools used

-  LangChain
-  CrewAI
-  Miro (workflow diagrams)



Module 4 — Knowledge & Retrieval Systems (RAG Concepts)

You will learn why AI sometimes produces incorrect information and how modern systems solve this using external knowledge and retrieval methods.

What you will do

- Prepare information sources
- Connect agent to external data
- Reduce hallucinations
- Build a knowledge-based assistant

Outcome

After this module you can create AI assistants that answer using real data.

Tools used

-  **VectorDB** concepts (FAISS / Pinecone)
-  LangChain
-  Embeddings concepts

Module 5 — Tools & API Integration

AI becomes powerful when it can use tools. This module focuses on connecting agents with external services and actions.

What you will do

- Understand APIs & webhooks
- Connect agent with services
- Trigger external actions
- Handle errors and responses

Outcome

After this module you can connect AI with real services and automate tasks.

Tools used

-  Postman
-  REST APIs
-  Webhooks

Module 6 — Automation Workflows (n8n)

You will learn how automation platforms allow agents to perform real operations across multiple applications and steps.

What you will do

- Build workflows in n8n
- Connect AI with automation
- Create multi-step task execution
- Run end-to-end processes

Outcome

After this module you can build AI automation systems instead of manual processes.

Tools used

-  n8n
-  Zapier
-  Make.com



Module 7 — Evaluation & Optimization

This module focuses on improving reliability, measuring performance, and refining agent behavior.

What you will do

- Test outputs systematically
- Improve prompts iteratively
- Debug workflow failures
- Optimize responses

Outcome

After this module you can refine and stabilize AI systems for real use.

Tools used

- Prompt testing frameworks
- Logging methods
- Evaluation checklists

Module 8 — Final Project & Deployment

You will combine all learned concepts into a functional system.

What you will do

- Design a complete AI workflow
- Integrate tools and automation
- Build and demonstrate project
- Present solution

Outcome

After this module you will have a complete working AI agent project for portfolio use.

Tools used

- Combined stack from all modules (LLM + APIs + automation + retrieval)

Learning Management System (LMS) Support

Access to structured course modules through the LMS
Session recordings available after live classes
Supporting resources and materials uploaded regularly
Progress tracking throughout the program
24/7 Chat Support
Student Communities to Interact and Collaborate



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Learning Outcomes

Design multi-step AI workflows
Integrate tools & APIs into agents
Build automation pipelines
Evaluate and optimize AI systems
Deploy a functional AI project

Software & Technologies Used

Category	Tools / Notes
LLMs	ChatGPT / OpenAI APIs
Agent Frameworks	LangChain (and/or similar agent orchestration)
Automation	n8n (primary), Zapier, Make
APIs	Postman, REST APIs, Webhooks
Dev	Python, VS Code, GitHub
Knowledge & Retrieval	RAG concepts, Vector DB (FAISS / Pinecone)
Docs & Delivery	Earnify LMS + Zoom live sessions, recordings

Enrollment Information

This is a batch-based program with limited seats to ensure quality learning and meaningful interaction. Early enrollment is recommended for those planning to join the upcoming batch.



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Agentic AI - Live Class Schedule

Week	Class Topic	Focus
Week 1	Introduction to Agentic AI	AI basics, agents vs automation
Week 1	AI Concepts & Terminology	Key AI & LLM terms
Week 1	AI Workspace Setup	Tools & environment setup
Week 2	AI Workflows	How agents plan & execute tasks
Week 2	Agentic AI Tools	Tools overview & use cases
Week 2	Prompt Engineering	Writing effective prompts
Week 3	Building AI Agents	Agent architecture
Week 3	Training AI Agents	Improving agent responses
Week 3	Testing AI Agents	Validation & testing
Week 4	Evaluation Metrics	Measuring agent performance
Week 4	Improving AI Outputs	Optimization techniques
Week 4	Deployment	Deploying agents safely
Week 5	Agent Integration	Connecting tools & APIs
Week 5	API Fundamentals	Using APIs with agents
Week 5	Debugging Agents	Error handling
Week 6	Ethical AI	Responsible AI use
Week 6	Real World Use Cases	Industry examples
Week 6	AI Project Planning	Managing AI projects
Week 7	Advanced Agentic techniques	Multi agent systems
Week 7	Collaboration Tools	Agent collaboration
Week 7	Performance Optimization	Efficiency & speed
Week 8	Final Project Guidance	Project kickoff
Week 8	Project Demos	Student demos
Week 8	WrapUp & Certification	Course recap