

Introduction:

This course introduces participants to the world of **AI Agents**, focusing on how intelligent systems can be designed, deployed, and connected to real-world tools and data. The program emphasizes hands-on development using popular open-source frameworks like LangChain, AutoGen, and CrewAI.

A key component of this course is the **Model Context Protocol (MCP)** — a lightweight server protocol that enables AI agents to securely and consistently interface with APIs, files, databases, and system commands. MCP enhances agent functionality while reducing hallucinations and maintaining operational safety.

Through practical exercises and project-based learning, participants will build functional AI agents that perform real tasks across business and development environments.

You must know!

Duration:

8 sessions × 5 academic hours = 40 total hours

Our lecturers:

Taught by AI developers and automation experts with real-world experience building intelligent systems for enterprise and startup environments.

Certification:

Participants will receive an INT College certificate upon attending at least 85% of sessions, completing all assignments, and presenting a final project.

Target Audience:

- Developers, product managers, and tech enthusiasts
- Entrepreneurs seeking AI-driven automation
- Students and professionals (technical or non-technical) interested in building smart agents

Prerequisites:

- Basic digital literacy
- A technical programming background is required
- Motivation to explore AI automation and intelligent system design

Course Objectives:

By the end of this course, participants will:

- Understand the fundamentals of AI agents and LLM-based architectures
- Learn how to use LangChain, AutoGen, and CrewAI
- Deploy agents that interface with APIs, databases, and business systems
- Utilize **MCP** for structured and secure agent interactions
- Apply best practices in security, ethics, and governance
- Complete a capstone project building a fully functional AI agent

Course Topics:

1. Introduction to AI Agents

- What is an AI Agent?
- Real-world applications and agent environments
- Overview of LangChain, AutoGen, CrewAI
- Initial setup and configuration

2. Architecture and Core Principles

- LLMs as agent backbones
- Prompting, reasoning, and memory (short & long term)
- Chain of Thought and autonomous decision loops
- Multi-agent collaboration frameworks

3. Integrating with Data Sources

- Connecting to external APIs
- Working with vector databases (Pinecone, FAISS)
- Retrieval-Augmented Generation (RAG)
- Using MCP to manage secure and structured access to external systems

4. Designing Complex Tasks

- Agent planning and orchestration
- Workflow design and multi-step task execution
- Use cases: Business intelligence, automation, research

5. Building a Personal Agent

- Persona definition and role assignment
- Enhancing conversation with memory and logic
- Mini-project: Personal assistant agent with embedded rules

6. Agents in Development Environments

- Integrating agents into React / Node.js projects
- Connecting agents to platforms like Zapier / Make
- Business automation pipelines
- Practical deployment examples

7. Security and Ethics

- Preventing model hallucinations
- Data privacy and operational safety
- AI governance and regulatory frameworks
- Case studies on responsible agent deployment

8. Final Project and Presentation

- Capstone project: Group-based agent design
- Full integration of backend logic, APIs, and interfaces
- Project showcase and course wrap-up

The college reserves the right to make changes to the curriculum, course duration, teaching staff, and other related aspects at its sole discretion. Any information provided in the college's informational materials shall not be considered binding or constitute any form of commitment by the college.



המרכז הבינלאומי
ללימודי הייטק וחדשנות

מתקדמים | *6377
לקריירה בהייטק

תל אביב
המרץ 2

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