



AI AGENTS & AUTOMATION

AGENT LOOPS . TOOLS . MEMORIES
LANGGRAPH . CREWAI . AUTOGEN
WORKFLOW AUTOMATION . N8N

DURATION	LEVEL	MODULES	MODE
50 Hours	Advanced	8	Classroom · Online · Hybrid

01 COURSE OVERVIEW

A build course on autonomous agents and the automation layer that puts them to work. Learners implement the agent loop from first principles, then move to frameworks — LangGraph, CrewAI, AutoGen and the OpenAI Agents SDK — adding tools, memory, planning and human approval. The second half connects agents to business systems through n8n, Zapier and webhooks.

Four agents are built during the course: research, email triage, HR assistant and a multi-agent operations crew.

WHO IT IS FOR

Developers with Python and API experience

Automation engineers

Operations and IT teams

AI application developers

PREREQUISITES

Python fundamentals and REST API basics. Prompt engineering exposure is helpful.

02 LEARNING OUTCOMES

01 Implement an agent loop with tool calling and memory.

03 Build multi-agent systems with defined roles.

05 Connect agents to email, calendars, CRMs and databases.

07 Monitor agent runs, cost and failure cases.

02 Design tools with safe, typed interfaces.

04 Add planning, retries and human approval steps.

06 Automate workflows with n8n and Zapier.

03 MODULE STRUCTURE

8 MODULES

01 AGENT FUNDAMENTALS

What makes an agent

Planning

Tool use

Reason-act loops

Memory types

Guardrails and termination

02 TOOL AND FUNCTION CALLING

Function schemas

Error handling

Tool selection

Argument validation

Parallel calls

LAB

WEATHER AND SEARCH TOOLS

03 MEMORY AND STATE

Short-term context

Vector memory

Persistence

Conversation memory

State machines

LAB

AGENT WITH DURABLE MEMORY

04 FRAMEWORKS

LangChain

CrewAI

OpenAI Agents SDK

LangGraph

AutoGen

Choosing a framework

LAB

SAME AGENT IN TWO FRAMEWORKS

05 MULTI-AGENT SYSTEMS

Roles and delegation

Message passing

Cost control

Supervisor patterns

Loops and conflicts

LAB

RESEARCH CREW

06 WORKFLOW AUTOMATION

Triggers and webhooks

Zapier

Scheduling

n8n

Make

Error queues

LAB

EMAIL TRIAGE AUTOMATION

07 BUSINESS INTEGRATIONS

Gmail and Outlook

CRM APIs

WhatsApp and Slack

Google Sheets

Databases

Document generation

LAB

HR ASSISTANT AGENT

08 RELIABILITY AND DEPLOYMENT

Observability

Evaluation

Sandboxing

Tracing

Rate limits

Deployment

PROJECT

MULTI-AGENT OPERATIONS ASSISTANT

04 ASSESSMENT & CERTIFICATION

Module assignments and labs	25%
Mini projects	20%
Internal assessments	15%
Final project and review	40%

CERTIFICATION

Learners who complete all modules, submit the final project and clear the review receive a course completion certificate from Kaizen Infinities Private Limited. Project work is documented for the learner's portfolio, and interview preparation is included in the closing sessions.

05 CAREER OUTCOMES

ROLES THIS PROGRAMME PREPARES FOR

AI AGENT DEVELOPER

AUTOMATION ENGINEER

AI SOLUTIONS ENGINEER

RPA AND AI CONSULTANT

BACKEND AI DEVELOPER

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