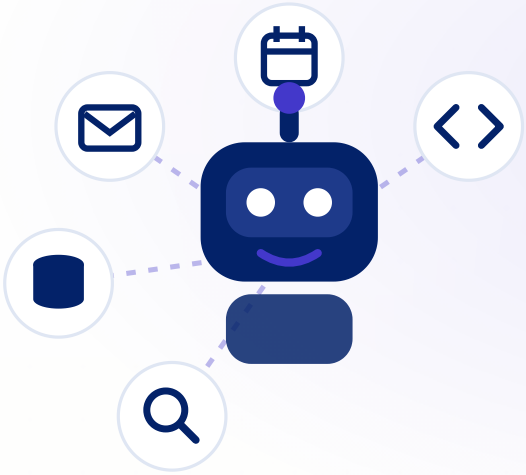
TECH DRONA
DEBUG YOUR CAREER. DEPLOY YOUR DREAMS.

Coming soon · 2026

ADVANCED AI COURSE

Agentic AI

Design AI agents that plan, use tools, remember and work together, safely.



Task

- [x] Plan the steps
- [x] Search the web
- [x] Query data
- [x] Draft the reply
- [ ] Send for review

TECHNOLOGIES COVERED

Python · LangGraph · CrewAI · AutoGen · MCP · LangSmith · FastAPI

50 hours	11	Labs + capstone
Duration	Modules	Projects

01 ABOUT THE COURSE

Course overview

A 50-hour course on AI agents that plan, call tools, keep memory and work together, and on running them safely in production. It starts where the Generative AI course ends: learners build a tool-using agent from scratch, then move to LangGraph, multi-agent systems and the Model Context Protocol (MCP). It finishes with guardrails, evaluation, tracing and deployment.

DURATION
50 hours
Training hours, including guided labs

MODULES
11
Each module ends with hands-on practice

PROJECTS
Labs + capstone
Built, reviewed and demonstrated

LEVEL
Intermediate to advanced

What you will learn

Agent fundamentals
Tool calling · ReAct loop · Planning · Memory

LangGraph
Stateful graphs · Checkpoints · Human-in-the-loop

Multi-agent systems
Supervisor · Hierarchical teams · CrewAI · AutoGen

Production
MCP · Guardrails · Tracing · Evaluation · Deployment

02 WHO IT IS FOR

Goals & outcomes

Who it is for

Developers who have built LLM or RAG applications and want to automate multi-step work in support, operations, research, data or software teams.

Prerequisites

- Python programming
- The Generative AI course, or experience with prompting, model APIs and RAG

Learning objectives

- Explain what makes a system agentic, and when not to use an agent.
- Implement tool calling and the ReAct loop directly against model APIs.
- Build stateful agents in LangGraph with checkpoints and human approval steps.
- Design multi-agent systems and connect agents to real systems through MCP.
- Evaluate, trace, secure and deploy agents within cost and safety limits.

Key highlights

- Builds an agent from scratch before using any framework.
- Covers the Model Context Protocol (MCP) for connecting real systems.
- Safety, evaluation and cost control are taught as core skills.
- A clear next step after the Generative AI course.

Expected outcomes

Design agent systems

Choose the right pattern, from a single tool loop to a multi-agent team.

Build with LangGraph

Build stateful, resumable agents with human approval steps.

Connect real systems

Give agents safe access to data and actions through MCP and APIs.

Run agents safely

Evaluate, trace and limit agents in production.

SKILLS YOU BUILD

Tool calling | LangGraph | Multi-agent design | MCP | Guardrails | Agent evaluation | Deployment

03 ELEVEN MODULES, ONE PRODUCTION-STYLE CAPSTONE

Course curriculum

01 MODULE 1 — From LLM apps to agents

3 hrs

1.1 **What makes a system agentic**
tools, loops, planning and memory · workflows vs agents · levels of autonomy

1.2 **Choosing the right design**
when an agent helps · when a simple workflow is better · a quick recap of the GenAI prerequisites

02 MODULE 2 — Tool calling from scratch

5 hrs

2.1 **Tools**
function and tool schemas · parallel tool calls · returning results to the model

2.2 **The agent loop**
the ReAct pattern · stopping conditions · error recovery and retries

03 MODULE 3 — Planning and reasoning

4 hrs

3.1 **Planning patterns**
plan-and-execute · task decomposition

3.2 **Self-improvement**
reflection and self-critique · using reasoning models

04 MODULE 4 — Memory and state

4 hrs

4.1 **Memory types**
short-term vs long-term memory · conversation summarisation · vector and episodic memory

4.2 **State**
state schemas · persisting state between runs

05 MODULE 5 — Building agents with LangGraph

7 hrs

5.1 **Graph basics**
state, nodes and edges · conditional routing · loops

5.2 **Reliability features**
checkpoints and persistence · human-in-the-loop approval · streaming progress

5.3 **Patterns**
routers · tool-calling agents · subgraphs

06 MODULE 6 — Multi-agent systems

6 hrs

6.1 **Architectures**
supervisor · hierarchical teams · hand-offs between agents

6.2 **Frameworks compared**
LangGraph · CrewAI · AutoGen

6.3 **Coordination**
shared state · resolving conflicts · keeping teams small

07 MODULE 7 — Connecting agents to the world

5 hrs

7.1 **Model Context Protocol (MCP)**
MCP servers and clients · exposing company data and actions

7.2 **Common tools**
web search and browsing · code execution sandboxes · SQL and REST API tools

08 MODULE 8 — Safety and guardrails

3 hrs

8.1 **Threats**
prompt injection through tools and documents · data leakage

8.2 **Controls**
least-privilege tool design · approval gates · sandboxing · budget and step limits

09 MODULE 9 — Evaluation and observability

3 hrs

9.1 **Evaluating agents**
task success metrics · trajectory evaluation · regression test sets

9.2 **Observability**
tracing with LangSmith or Langfuse · cost and latency monitoring

10 MODULE 10 — Deploying agents

3 hrs

10.1 **Serving**
agents behind a FastAPI endpoint · streaming responses

10.2 **Running in production**
background jobs and queues · scheduling · retries and timeouts

11

MODULE 11

Capstone project

7 hrs

11.1 **Design the agent system**
business workflow · tools and permissions · evaluation plan

11.2 **Build, evaluate and deploy**
agents and tools · guardrails and tracing · evaluation report · deployment

11.3 **Demo and review** PROJECT
live demonstration · review feedback

Total duration · 50 hours

Training hours across eleven modules, including guided labs and the capstone project.

04 LEARN BY BUILDING

Practical learning

Hands-on learning

- A framework-free agent that uses a calculator, web search and a database tool.
- A LangGraph support agent with memory and a human approval step before refunds.
- A research team of planner, researcher and writer agents that produces a cited report.
- An MCP server that exposes files or tickets to an agent, with guardrails and tracing.

Tools & technologies

Agent frameworks

LangGraph · CrewAI · AutoGen

Integration

Model Context Protocol · Web search tools · Code sandboxes

Observability

LangSmith · Langfuse

Workflow

Python · FastAPI · Docker · Git and GitHub

Projects

Mini project · Helpdesk triage agent
Classify incoming tickets, look up answers, draft replies and escalate when unsure.

Mini project · Research crew
A multi-agent team that researches a topic and writes a cited brief.

Capstone · choose one
A lead-qualification agent, an IT operations assistant or a data-analysis agent that writes and runs code, evaluated and deployed.

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NEXT STEP

Coming soon: join the waitlist

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Course details, schedules and fees are confirmed on enquiry and may change.