APPLIED AI COURSE · COHORT 2

Agentic AI Coding: From Specification to Deployment

A hands-on 8-week program for professionals and students who want to build, ship and operate real AI agents — from writing a spec to deploying, extending and evaluating a full-stack AI application. Seven weekends live online, then an optional in-person campus visit at IISc Bengaluru (hybrid for those who cannot travel).

DATES
Feb 13 – Mar 28, 2027

TIMING
Sat & Sun, 10–11:30am IST

MODE
Live online + optional in-person campus visit (Apr 3, tentative)

Reserve Your Seat

COHORT 1 · SEPT 5 – OCT 10, 2026

162
participants completed the first cohort

9 chapters
course reader, plus four companion project guides

8 weeks
up from six weekends, with new weeks on agentic features and evaluation

Who this course is for

Software professionals in product/service industry

Engineering professionals looking to supercharge their work with AI

Start-up teams & national lab / academic researchers

UG, PG and research students or staff

Career-break individuals and hobby developers returning to tech

Anyone aspiring to join the AI industry

What you'll learn

- Understand how large language models and agents actually work — tokens, tool calls, the Model Context Protocol (MCP), and the spectrum from augmented LLM calls to multi-agent systems.
- Drive a coding agent such as Claude Code through its four control surfaces — prompt, context, loop and graph — and write specifications it can execute against.
- Build end-to-end software projects on your own: a full-stack web application from four specs (goal, frontend, backend, API contract), with tests, CI/CD and cloud deployment.
- Add agentic AI features to a codebase that already works — a natural-language trip creator and a planner agent with search tools — while keeping cost and permissions in check.
- Evaluate AI systems the way industry teams do: tracing, error analysis, LLM-as-judge calibrated against expert labels, and golden sets for regression.
- Design new systems: decide when a task needs plain code, a workflow, an agent or retrieval-augmented generation, and design for failure.
- Read and understand what an agent generates, so you stay fully in control of your project.

Tools you'll use

Claude Code | Claude Opus 5.5 | Claude Sonnet 5.5 | Claude Haiku 5.5 | Anthropic API | ChatGPT & OpenAI API | GPT-5.6 Sol | DeepSeek | GLM | Inkling | LangChain & LangSmith | Agent Development Kit | Python, React, FastAPI, PostgreSQL, Redis | Cursor | Model Context Protocol (MCP) | Docker | Vercel | Vector DB | Gemini 4 Argon | Gemma | Astra 6.1 | OpenAI Codex | GitHub Actions | pytest | Terraform | AWS | Arize Phoenix

Eligibility & prerequisites

MINIMUM QUALIFICATION

B.Tech, BCA or B.Com — students are also welcome to apply.

PREREQUISITE

A genuine interest in software development. No prior AI/ML background required. Beginners get a special setup session, and we advise them to enroll early to get sufficient time to set up, read the course book slowly, and build confidence.

What you'll need

HARDWARE

- A laptop (Windows, macOS or Linux) with at least 8GB RAM
- A stable internet connection
- No GPU required
- Travel to IISc Bengaluru only if you attend the optional in-person campus visit (tentatively Saturday, 3 April 2027) — it is hybrid for those who cannot travel. Travel costs are not covered by the program.

SUBSCRIPTIONS & ACCOUNTS

- A free Zoom account to register for the live sessions — no paid Zoom plan needed
- A GitHub account
- A Claude Pro or ChatGPT Plus subscription (both cost roughly ₹2,000 + taxes/month) — either works. The instructor demonstrates using Claude Code, Cowork and Design on a Claude Pro subscription.
- A free-tier cloud account (AWS/GCP/Azure) for the deployment weeks
- A Vercel account (free tier) for hosting your projects

Schedule & dates

DURATION

7 live weekends, Feb 13 – Mar 28, 2027, then an optional in-person campus visit on Apr 3 (tentative)

CLASS TIMING

Saturdays & Sundays, 10–11:30am IST

MODE

Live online on Zoom, plus an optional in-person day on the IISc campus (hybrid for those who cannot travel)

8 WEEKS

Curriculum

Week 01

Feb 13–14, 2027

From LLMs to autonomous agents. How large language models work, from tokens to foundation models. What turns a chatbot into an agent: the perceive, reason, act and verify loop. How a tool call is actually emitted, MCP, and the workflow, single-agent and multi-agent patterns used in industry today.

Week 02

Feb 20–21, 2027

Agentic coding harnesses & specification-driven development. Claude Code's agentic loop, traced call by call. The four control surfaces — prompt, context, loop and graph engineering — shown as one project built four ways. Vibe coding vs. SDD, the anatomy of a production-grade spec, deriving tests from it, and catching spec drift. You stay the architect; the agent is the contractor.

Week 03

Feb 27–28, 2027

From idea to full-stack application. Build a real trip-planning web app from four specifications: goal, frontend, backend and API contract. Review the specs together, plan the build in phases with clear definitions of done, and verify every phase. Your own project begins.

Week 04

Mar 6–7, 2027

Testing, CI/CD & cloud deployment. Unit, integration and browser tests written from acceptance criteria, and checks that catch the agent's own mistakes. CI/CD pipelines, infrastructure as code with Terraform, debugging HTTPS and CORS in the cloud, and backup and restore drills.

Week 05

Mar 13–14, 2027

Adding agentic AI features. Brownfield development: adding AI to a codebase that already works. A natural-language trip creator, and a planner agent that researches with search tools while the user stays in control. Tool contracts, permissions and failure handling, moving a project between harnesses, and keeping model cost and reasoning effort in check.

Week 06

Mar 20–21, 2027

Evaluating agentic systems. The analyze–measure–improve loop. Tracing with Arize Phoenix, and error analysis through open and axial coding. Code-based checks, LLM-as-judge calibrated against expert labels, golden sets for regression, and choosing the right model for your quality and cost targets.

Week 07

Mar 27–28, 2027

High-level system design with agentic AI. C4 architecture views, deciding when a task needs plain code, a workflow or an agent, and the minimal viable agent. State, tools and permission to act, designing for partial failure, and when multiple agents are worth it. Retrieval-augmented generation with keyword, vector and hybrid search. Final project presentations, deployed and live.

Week 08

Sat, Apr 3, 2027

(Tentative)

Optional in-person campus visit at IISc Bengaluru. Meet the faculty and your cohort on the IISc campus (hybrid for those who cannot travel).

YOUR INSTRUCTOR

Prof. Deepak Subramani

Associate Professor, Department of Computational and Data Sciences, Indian Institute of Science, Bengaluru

PhD in Computational Engineering from the Massachusetts Institute of Technology (MIT), USA. Leads QUEST Lab at IISc, working on multi-modal AI, foundation models and agentic AI frameworks for real-world applications, with top-tier research publications. Recipient of the IISc Award for Excellence in Teaching, with an average instructor rating of 4.91/5.

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Fee & Enrollment

EARLY BIRD

WORKING PROFESSIONALS

~~₹40,000~~

₹35,000

+ 18% GST · **₹41,300 total**

Save ₹5,000 on the full course fee.

STUDENT PRICE

STUDENTS

~~₹40,000~~

₹30,000

+ 18% GST · **₹35,400 total**

Save ₹10,000 on the full course fee.

First come, first served. Seats confirmed on payment.

Enroll Now

Preview the course: watch the webinar from Cohort 1 · read Chapter 1 of the course reader

Course queries: questlabiisc@gmail.com · Admin & payment: office.cce@iisc.ac.in

Frequently asked questions

Do I need prior AI or coding experience?

No AI background is required. You should be comfortable with basic programming concepts and genuinely interested in software development — the course teaches agentic workflows from first principles.

I'm a beginner. Will I get help setting up?

Yes. There will be a special setup session for beginners, where we install and check everything you need — your editor, accounts and coding agent — so you are ready for the live classes. We advise beginners to enroll early, to get sufficient time to set up, read the course book slowly, and build confidence before the course begins.

Is the course online or offline?

Weeks 1–7 are live online on Zoom. You need to register with a free Zoom account to join; no paid Zoom plan is needed. Live sessions run Saturdays and Sundays, 10–11:30am IST. Week 8 is an optional in-person campus visit at IISc Bengaluru (hybrid for those who cannot travel), tentatively on Saturday, 3 April 2027.

What happens after I enroll?

You'll be added to the course's communication channels (Discord and the learning management system), and receive the course reader and setup instructions before the first class. Enrolling early gives you more time to prepare before the course starts.

What if I miss a live session?

Sessions are recorded and shared with all enrolled participants, so you won't fall behind.

What if I have doubts?

The course Discord channels are your first and fastest source for getting doubts clarified. The instructor also holds bookable 1-on-1 or many-on-1 office hour sessions for structured discussions throughout the program.

Will I get a certificate?

Yes — participants who complete the course and final project receive a certificate of completion from IISc's Centre for Continuing Education.

What happens at the campus visit?

Week 8 is an optional in-person campus visit, tentatively on Saturday, 3 April 2027, where you meet the faculty and your cohort on the IISc campus in Bengaluru. It is hybrid for those who cannot travel, so you can join online instead. Travel costs are not covered by the program.

How is Cohort 2 different from Cohort 1?

Cohort 1 ran for six weekends with 162 participants. Cohort 2 adds a full week on adding agentic AI features to an existing application, a dedicated week on evaluating agentic systems, and an optional in-person campus visit (hybrid for those who cannot travel), making it eight weeks in all.

What hardware or subscriptions do I need?

A laptop with at least 8GB RAM, a stable internet connection, a free Zoom account, a GitHub account, an AI coding assistant subscription, and a free-tier cloud account. See "What you'll need" above for details.

How experienced is the instructor at teaching online cohorts?

Prof. Deepak Subramani has trained 3,000+ working professionals and students through online programs under IISc's Centre for Continuing Education, across 15+ live cohort-based classes, including 162 participants in the first cohort of this course. He is an expert in online education and has an active research program in AI Education, with top-tier publications in AI for Education and Computers & Education — the highest-ranked journal in the field, even above Nature Machine Intelligence.

How do I enroll or ask a question?

Email questlabiisc@gmail.com for course content questions, or office.cce@iisc.ac.in for admissions and payment.