

From zero to production-ready AI agents with n8n

self-host your own workflows with advanced LLMs, automation strategies, and Outlook-triggered alerts - 2 / 3 days

FA-0006 · 2 / 3 days

Agentic & Generative AI · Automation, RPA & Power Platform · DevOps, Cloud & Infrastructure

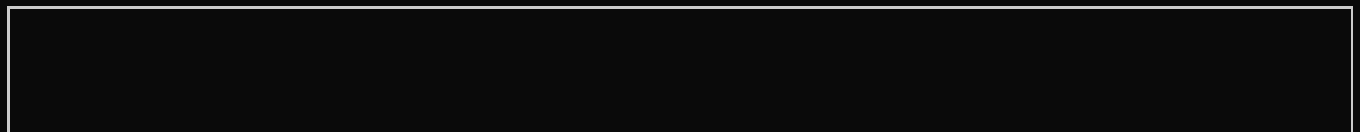
Introduction

Companies are quickly discovering that AI automation isn't optional anymore—it's becoming as essential as email or spreadsheets. This course teaches you how to build AI systems that actually work in professional environments, not just classroom demos.

You'll learn to combine n8n (which you host yourself for better security and control) with powerful language models and Outlook integration to create automated workflows that handle real business tasks. Think automated customer responses, data processing, report generation—stuff that saves hours every week.

Your instructor has spent over 30 years working with enterprise systems and knows the difference between tools that look impressive in demos and ones that actually hold up when your boss depends on them. We'll focus on building AI agents that are secure enough for corporate use, compliant with business requirements, and robust enough to scale as your needs grow.

By the end, you'll have practical skills you can immediately apply to streamline operations and deliver measurable improvements at work.



Learning outcomes

By the end of this course, participants will be able to:

1. Deploy and manage a production-grade self-hosted n8n environment.
2. Integrate advanced local LLM orchestration using LangChain and Ollama.
3. Design multi-agent AI systems with tool calling and decision-making logic.
4. Implement complex Outlook-triggered workflows for real-time notifications.
5. Build human-in-the-loop approval flows and embed compliance guardrails.
6. Monitor, scale, and secure n8n workflows in enterprise environments.
7. Create robust pipelines: data extraction, storage (Qdrant/Postgres), and analytics.

Prerequisites

- Experience with Docker, server deployment (VPS or equivalent), or Kubernetes.
- Comfortable using Git and managing versioned JSON workflows.
- Goos experience with POSIX systems.
- Microsoft 365 account with granted Outlook API permissions.
- Local LLM installation (e.g., Ollama) or access to lightweight vector store (Qdrant).
- Basic understanding of prompt engineering and LLM usage.

Training outline

1. 1. Foundation: Self-Hosted n8n & Environment Setup

- Deploy n8n via Docker Compose or Kubernetes with SSL and authentication.
- Configure database backend, storage volumes, and backup scripts.
- Set up SSH, env vars, and audit logging.

2. 2. Local LLMs & AI Starter Kit

- Explore n8n's Self-hosted AI Starter Kit
- Configure LangChain integration in n8n workflows.
- Build a local "Hello Agent" flow with LLM node.

3. 3. Advanced Agent Orchestration & LangChain Patterns

- Build multi-agent workflows: tool calling, decision branches, autonomy.
- Human-in-the-loop (HITL) checkpoints for compliance.
- Guardrails: output parsers, script nodes, and error handling.

4. 4. Outlook Triggers & Notifications

- Configure Outlook Trigger and Send Email nodes for real-time automation.

Workflow examples:

- **Smart Email Categorizer:** triage using AI tags.
- **Phishing Detector:** scan incoming messages.
- **Response Generator:** draft AI-assisted replies.

5. 5. Data Pipelines & Vector Stores

- Ingest documents/emails into Qdrant via workflow.
- Build retrieval-augmented generation (RAG) flows for context-aware agents.
- Simple analytics: summarize trends and export to CSV or database.

6. 6. Monitoring, Scaling & Governance

- Logging, retries, branching, and workflow-level tests.
- Role-based access (SAML/LDAP), RBAC, and encryption.
- Horizontal scaling with worker nodes and resource planning.

7. 7. Real-World Use Cases & Mini Projects

- **Multi-Agent Scheduling Assistant:** coordinate teams and calendar events.
- **Policy Enforcement Bot:** checks attachments for compliance.
- **Insight Digest Generator:** daily summarization pipeline with Outlook dispatch.

8. 8. Deployment & Maintenance

- CI/CD pipeline for workflow sync and rollback.
- Container orchestration best practices.
- Budget controls: event-driven LLM executions, fallback logic.

9. 9. Ethics, GDPR & Security

- Data anonymization in logs.
- Security hygiene and credential rotation.
- Compliance auditability and documentation.

10. 10. Capstone Integration Challenge*

Participants build an end-to-end pipeline:

- Trigger via Outlook → AI agent analysis → multi-agent decision → human approval → outlook notification.

Instructor Credential

Your instructor brings **30+ years** of real-world automation and AI expertise across enterprise deployments. Expect hands-on, production-caliber workflows—no fluff, just rigor and practical insights.

Disclaimer

*Subject to change as deemed necessary by the instructor.