

Microsoft 365 Agents SDK and Copilot Extensions

Course code: SPO_COPILOT

The course focuses on the design, development, validation, and operation of agents built on Microsoft 365 Agents SDK and Copilot Extensions. Emphasis on multi-channel deployment (Copilot, Teams, web), activity processing, action handlers, secure data anchoring (SharePoint/Graph), Responsible AI, evaluation telemetry, and lifecycle using Microsoft 365 Agents Toolkit and Agents Playground.

Who is this course for

- Solution architects and AI engineers
- Microsoft 365 developers extending Copilot
- Technology consultants designing enterprise AI integrations
- Platform engineers enabling secure AI adoption

Required prerequisites

- C# basics at the level of the GOC2125 course
- JavaScript basics at the JS_PROG1 course level
- TypeScript basics at the JS_TS1 course level
- Knowledge of REST & JSON
- Azure & Microsoft 365 basics
- Previous work with Microsoft Graph (optional/advantageous)
- Experience with prompt engineering (optional/advantageous)

Course outline

- Copilot architecture & Agents SDK overview (2 hours)
- Extension options: Agents SDK, plugins, Graph connectors, actions
- Azure Bot Service channels and adapters; activities and "turns"
- Microsoft 365 Agents Toolkit & Playground (2.5 hours)
- Templates for Visual Studio/VS Code, scaffolding, local Agents Playground
- Supported languages (C#, JS/Node, Python) and prerequisites
- Responsible AI & governance (2.5 hours)
- Guardrails, safety filters, content moderation
- Privacy, compliance & traceability
- Corporate ingestion strategy (2.5 hours)
- Principles of SharePoint/OneDrive content indexing
- Graph connectors & metadata enrichment
- Vectorization & RAG design (2.5 hours)
- Chunking, embeddings, hybrid semantic ranking
- Latency vs. relevance trade-offs
- Prompt & system orchestration (2.5 hours)
- System vs. user vs. tool messages
- Few-shot, prompt chaining, evaluation heuristics
- Application agent, manifest & API surface (2.5 hours)
- AgentApplication/AgentApplicationOptions basics; endpoint mapping
- Manifest, capability declarations, versioning
- Action handlers & integration with Microsoft Graph (2.5 hours)
- Action routing
- Parameter validation
- Permission boundaries
- Middleware & enforcement policies (2.5 hours)

GOPAS Praha

Kodaňská 1441/46
101 00 Praha 10
Tel.: +420 234 064 900-3
info@gopas.cz

GOPAS Brno

Nové sady 996/25
602 00 Brno
Tel.: +420 542 422 111
info@gopas.cz

GOPAS Bratislava

Dr. Vladimíra Clementisa 10
Bratislava, 821 02
Tel.: +421 248 282 701-2
info@gopas.sk



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- Pre/post processing, editing, output filtering
- Hallucination mitigation patterns
- Event-driven orchestration (2.5 hours)
- Azure Functions vs Logic Apps vs Durable orchestrations
- Model and tool call chaining
- Evaluation & quality (2.5 hours)
- Qualitative vs quantitative metrics, human-in-the-loop
- Golden set & regression tests
- Performance, costs & scaling (2.5 hours)
- Token economy, cache layers, retrieval optimization
- Resilience and timeout patterns
- Security & risk management (2.5 hours)
- Exfiltration prevention, scope minimization
- Output sanitization and watermarking (where appropriate)
- Deployment & lifecycle management (2.5 hours)
- Propagation between environments, versioning, rollback
- Model exchange governance & deprecation planning
- Capstone architecture & roadmap (2–2.5 hours)
- Presentation of end-to-end solution with Agents SDK + RAG
- KPI review & evaluation matrix
- Next steps: AI-102, AZ-204, multi-agent patterns

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