

# Microsoft 365 - advanced automation and SharePoint migration

Course code: GOC223

This five-day advanced course builds on the fundamentals of SharePoint administration and deepens engineering skills in Microsoft 365/SharePoint Online automation, scripting (PowerShell + Microsoft Graph), migration preparation and execution, lifecycle provisioning and management, governance enforcement, management visibility, and Azure integration. We emphasize resilience, security, and repeatability.

## Who is the course for?

Migration and automation engineers

Advanced M365/SharePoint Online administrators

DevOps / platform engineers for governance

Consultants designing scalable provisioning and migration frameworks

## Assumed entry knowledge

Knowledge within the scope of the courses listed in the **Previous courses** and **Related courses**

sections PowerShell basics

Experience with SharePoint Online administration

Azure basics (resource groups, identities)

Knowledge of JSON & REST is an advantage

Experience with ShareGate or migration tools is an advantage

## Course outline

Engineering environment, VS Code and Copilot

- VS Code for automation: workspace, tasks, formatting, debugging
- Git basics, repository hygiene, PR and code review
- GitHub Copilot responsibly: prompting, security guidelines, acceptance criteria
- Lab: Repo initialization, scaffolding, linting & tests

Automation strategy & tool map

- PowerShell vs Graph vs PnP vs REST
- App registration & identity strategy
- Least privilege security posture
- Lab: App registration & baseline permissions

PowerShell in depth

- Modules: PnP.PowerShell, Microsoft.Graph, SPO Management Shell
- Authentication: interactive, device code, certificate, managed identity
- Lab: Unified connect wrapper & logging scaffolding

Microsoft Graph — engineering basics

- Batching, delta, throttling control
- Error classification and retry strategies
- Lab: Resilient ingest & Graph paging

Staging environments: DEV, TEST, PROD

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- Tenant/environment roles and secure deployment of changes
- Comparing environments, sites, lists, items; drift detection
- Baseline and diff automation
- Lab: Diff & baseline report script

## Migration composition

- Pre-migration checks and planning
- Parallelization, wave planning, cutover tactics
- Large lists, versions, throttling, search delays
- Lab: Wave plan & throttle-aware execution

## Provisioning automation patterns

- PnP provisioning vs Orchestration catalog (overview)
- Web requests and metadata capture
- Lab: Dynamic PnP provisioning artifact

## Orchestration integration & custom scripts (simulation)

- Request center and workspace template lifecycle
- Hooks: pre-provision, post-provision, compliance checks
- Integration with PnP.PowerShell / Microsoft Graph
- Governance artifacts: owner attestation, sensitivity, sprawl
- Lab: Script integration design (PnP simulation)

## Lifecycle & compliance enforcement

- Scripts for retention and sensitivity
- Governance sharing and drift detection
- Lab: Compliance drift report + remediation

## Azure integration patterns

- Logic Apps vs Functions vs Runbooks
- Event/webhook subscription, change notifications
- Lab: Functions for change notifications (skeleton)

## SIEM integration via Azure Blob

- Logging strategy: schema, PII minimization, retention
- Pipeline: app > Blob > Event Grid > Function > SIEM
- Cost and reliability (batching, retry, dead-letter)
- KQL basics for validation and dashboards
- Lab: Blueprint ingest and transform skeleton

## Microsoft Clarity — configuration

- Project setup: roles, retention, privacy
- Creation of tracking code and governance

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- Injection into SPO: SPFx App Customizer, tenant-wide, opt-out strategy
- Compliance: consent/cookie banner, regional data
- Lab: Rollout plan + App Customizer injection (simulation)

## SPFx basics & App Catalog

- Dev setup (Node LTS, Yeoman, gulp) and project structure
- Generation of HelloWorld webpart and key files
- Build/package .sppkg
- App Catalog (tenant vs site), upload, deploy, trust
- Adding webpart to modern page; versioning & update
- Lab: HelloWorld deploy via App Catalog

## Security hardening & least privilege

- Minimizing scope, Conditional Access impact
- Secret rotation & transition to cert-based auth
- Lab: Hardening app registration & scope adjustment

## Performance, costs & capstone

- API efficiency (batching, selective projection)
- Logging costs, asynchronous fan-out patterns
- Capstone

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