

API Testing Training – 15 Module Curriculum

Hands-on API Testing curriculum covering functional, automation, security, and performance testing aligned with industry practices.

Module 1: API Fundamentals

- What is an API
- REST vs SOAP vs GraphQL
- HTTP methods and status codes
- API request-response lifecycle

Module 2: API Architecture & Design Basics

- RESTful principles
- Resource modeling
- Idempotency
- Versioning strategies

Module 3: HTTP Deep Dive

- Headers and body
- Cookies and sessions
- Caching mechanisms
- Content types

Module 4: API Documentation & Standards

- Swagger / OpenAPI
- Reading API specs
- Contract testing basics

Module 5: Manual API Testing Fundamentals

- CRUD operations testing
- Positive and negative scenarios
- Boundary value analysis

Module 6: API Testing Tools

- Postman fundamentals

- Collections and environments
- Variables and scripts

Module 7: Authentication & Authorization Testing

- API keys
- Basic auth
- OAuth 2.0 & JWT
- Token lifecycle testing

Module 8: Data Validation & Error Handling

- Schema validation
- Response assertions
- Error code validation

Module 9: API Automation Testing

- Postman automation
- Newman CLI
- CI integration basics

Module 10: API Security Testing – Basics

- OWASP API Top 10 overview
- Common API vulnerabilities
- Authentication bypass risks

Module 11: API Security Testing – Advanced

- Broken Object Level Authorization (BOLA)
- Mass assignment
- Rate limiting issues
- Injection attacks

Module 12: Performance & Load Testing

- API performance metrics
- Load vs stress testing
- Basic performance test scenarios

Module 13: API Mocking & Virtualization

- Why mocking is needed
- Mock servers
- Testing incomplete APIs

Module 14: Monitoring & Logging APIs

- API logs analysis
- Error monitoring
- Alerting strategies

Module 15: Capstone Project & Real-World Scenarios

- End-to-end API testing project
- Functional + security testing
- Professional API test report