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API Fundamentals & Cybersecurity Awareness

for Banking & Financial Enterprise Systems - 2 days

FA-0104 · 2 days

AI for Leaders & Business · Cybersecurity · Automation, RPA & Power Platform

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Introduction

Modern banking runs on APIs. From core banking integrations and payment gateways to mobile apps, open banking initiatives, fintech partnerships, and AI-driven risk engines, APIs form the connective tissue of today's financial institutions. They enable speed, interoperability, and innovation, but they also introduce concentrated points of exposure. In regulated environments where confidentiality, integrity, and availability are non-negotiable, a single weak or poorly governed API can undermine customer trust, regulatory compliance, and operational resilience.

Banks are now facing a convergence of risks. Traditional cybersecurity challenges such as unauthorized access, data leakage, and fraud are being amplified by API sprawl, complex third-party ecosystems, and the rapid adoption of AI. AI systems increasingly consume and expose APIs, automate decisions, and interact with sensitive financial data — often faster than governance models can adapt. This makes awareness, not just tooling, a critical line of defense.

This 2-day awareness-focused course is designed specifically for banking and financial enterprise environments. It provides a clear, structured understanding of how APIs work, why they are high-value targets, how attackers exploit them, and how emerging AI trends reshape both risk and responsibility. The course avoids academic abstraction and instead focuses on real operational realities found in banks.

The instructor for this course brings **over 30 years of hands-on industry experience** spanning banking systems, enterprise security, regulatory environments, and large-scale digital transformation. The content reflects **real industry-demanded practices**, lessons learned from production incidents, and security expectations aligned with modern financial institutions — not textbook theory.

Learning outcomes

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

- Understand the role APIs play in modern banking architectures
- Recognize why APIs represent a high-risk attack surface in financial institutions
- Identify common API security weaknesses and misuse patterns relevant to banks
- Understand how industry standards and frameworks such as **OWASP** guide API security awareness
- Recognize how AI adoption in banking introduces new cybersecurity and governance risks
- Identify early warning signs of API abuse, fraud, or data exposure
- Contribute to stronger security awareness, governance discussions, and risk mitigation efforts

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Prerequisites

- General understanding of banking systems, digital channels, or enterprise IT
- Familiarity with basic cybersecurity concepts (authentication, access control, encryption)
- No software development or API coding experience required

Training outline

1. 1. APIs in the Banking Ecosystem

- APIs as foundational components of digital banking
- Role of APIs in core banking, payments, lending, and customer channels
- APIs enabling open banking and ecosystem partnerships
- Internal vs external vs partner APIs in financial institutions
- APIs as conduits for sensitive financial and personal data

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2. 2. Banking-Specific API Use Cases

- Mobile and internet banking interactions
- Payment initiation and settlement flows
- Customer identity and profile services
- Credit scoring, fraud detection, and risk analytics
- Regulatory reporting and data exchange
- Fintech, vendor, and partner integrations

3. 3. Why APIs Are High-Value Targets in Banks

- Direct access to transactional and customer data
- Bypassing traditional perimeter controls
- Machine-to-machine trust assumptions
- High-volume automation enabling fraud at scale
- Business logic exposure tied to financial workflows

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4. 4. Understanding the Banking API Attack Surface

- Public-facing vs internal API exposure
- Legacy systems wrapped with modern APIs
- API gateways, middleware, and integration layers
- Shadow, undocumented, and deprecated APIs
- Third-party and vendor-managed API risks

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5. 5. Common API Security Risks in Financial Institutions

- Broken authentication and weak identity enforcement
- Broken authorization and privilege escalation
- Excessive data exposure of customer and account information
- Insecure direct object references in financial APIs
- Business logic abuse leading to fraud scenarios
- Rate-limit abuse and transaction flooding
- Dependency and supply-chain vulnerabilities

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6. 6. Industry Security Standards and Frameworks

- Purpose of security frameworks in regulated industries
- Overview of **OWASP** and its relevance to banking
- OWASP API Security Top 10: focus areas and risk themes
- Difference between application security and API-specific threats
- Using frameworks as a common language between risk, security, and technology teams

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7. 7. Core Cybersecurity Practices for Banking APIs

Identity and access management fundamentals

- Authentication vs authorization
- Service-to-service trust models

- Principle of least privilege in financial systems
- Secure handling of sensitive financial data
- Encryption awareness and key protection
- Input validation and data integrity
- Secure error handling to avoid information leakage

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8. 8. Secure API Lifecycle Awareness

- Security considerations during API design in banks
- Risks introduced during development and testing
- Deployment misconfigurations in production environments
- Importance of version control and change management
- Risks of obsolete or forgotten APIs in long-lived systems

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9. 9. API Governance in Banking Environments

- Ownership and accountability models
- Centralized vs federated API governance
- Inventory management and continuous discovery
- Policy enforcement and approval workflows
- Alignment with regulatory and audit expectations

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10. 10. AI Adoption in Banking Systems

- AI systems relying on APIs for data ingestion and actions
- AI use cases: fraud detection, credit scoring, customer service
- Increased automation and reduced human oversight
- Speed and scale amplification of both value and risk

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11. 11. AI-Driven Cybersecurity Risks

- Automated reconnaissance and exploitation
- AI-assisted fraud and credential abuse
- Model manipulation and data poisoning risks
- Prompt injection and indirect system control
- Exposure of AI models through poorly secured APIs

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12. 12. Shadow AI and Unapproved Automation

- Definition and emergence of shadow AI in banks
- Employees using unsanctioned AI tools
- Leakage of customer or transactional data
- APIs silently feeding external AI platforms
- Governance challenges and compliance implications

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13. 13. Monitoring, Detection, and Risk Signals

- Understanding normal vs abnormal API behavior
- Indicators of fraud-driven API abuse
- Unusual transaction volumes and access patterns
- Blind spots caused by incomplete visibility
- Importance of logging, alerts, and escalation paths

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14. 14. Everyday Cyber Hygiene for Banking Teams

- Secure handling of credentials, tokens, and secrets
- Multi-factor authentication awareness
- Phishing and social engineering tied to financial data
- Safe use of automation and scripting tools
- Reporting suspicious activity and near-miss incidents

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15. 15. Building a Security-Aware Banking Culture

- Shared responsibility across business, IT, risk, and security

- Awareness as a preventive control
- Moving beyond compliance checklists
- Encouraging transparency and early risk reporting

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16. 16. Key Takeaways and Closing

- APIs as critical financial assets, not just technical components
- Awareness as the first line of defense
- AI as a risk multiplier requiring governance, not avoidance
- Practical next steps for strengthening API security awareness

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Instructor Profile

This course is delivered by an instructor with **over 30 years of industry experience** across banking systems, cybersecurity leadership, enterprise architecture, and regulatory-driven environments. The training reflects **real-world banking challenges**, incident-driven insights, and security expectations aligned with modern financial institutions — focusing on what banks must understand *today* to reduce risk *tomorrow*.

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