

# DevSecOps Essentials Program Information

## Course Outline



### Module 1: Application Development Concepts

#### Topics covered:

- History of Application Development
  - Evolution of Application Development Methodologies
  - Introduction to Application Architectures
  - Introduction to the Application Development Lifecycle
  - Application Testing and Quality Assurance
  - Application Monitoring, Maintenance, and Support
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### Module 2: Application Security Fundamentals

#### Topics covered:

- What is Secure Application Development
  - Need for Application Security
  - Common Application Security Risks and Threats
  - OWASP Top 10
  - Application Security Techniques
  - Secure Design Principles
  - Threat Modeling
  - Secure Coding
  - Secure Code Review
  - SAST and DAST Testing
  - Secure Configurations
  - Educating Developers
  - Role of Risk Management in Secure Development
  - Project Management Role in Secure Application Development
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### Module 3: Introduction to DevOps

#### Topics covered:

- Introduction to DevOps
  - DevOps Principles
  - DevOps Pipelines
  - DevOps and Project Management
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### Module 4: Introduction to DevSecOps

#### Topics covered:

- Understanding DevSecOps
- DevOps vs. DevSecOps
- DevSecOps Principles
- DevSecOps Culture
- Shift-Left Security
- DevSecOps Pipelines
- Pillars of DevSecOps
- DevSecOps Benefits and Challenges



## Module 5: Introduction to DevSecOps Management Tools

### Topics covered:

- Project Management Tools
  - Integrated Development Environment (IDE) Tools
  - Source-code Management Tools
  - Build Tools
  - Continuous Testing Tools
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## Module 6: Introduction to DevSecOps Code and CI/CD Tools

### Topics covered:

- Continuous Integration Tools
  - Infrastructure as Code Tools
  - Configuration Management Tools
  - Continuous Monitoring Tools
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## Module 7: Introduction to DevSecOps Pipelines

### Topics covered:

- Role of DevSecOps in the CI/CD Pipeline
  - DevSecOps Tools
  - Embracing the DevSecOps Lifecycle
  - DevSecOps Ecosystem
  - Key Elements of the DevSecOps Pipeline
  - Integrating Security into the DevOps Pipeline
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## Module 8: Introduction to DevSecOps CI/CD Testing and Assessments

### Topics covered:

- Implementing Security into the CI/CD Pipeline and Security Controls
- Continuous Security in DevSecOps with Security as Code
- Continuous Application Testing for CI/CD Pipeline Security
- Application Assessments and Penetration Testing



## Module 9: Implementing DevSecOps Testing & Threat Modeling

### Topics covered:

- Integrating Security Threat Modeling in Plan Stage
  - Integrating Secure Coding in Code Stage
  - Integrating SAST, DAST, and IAST in Build and Test Stage
  - Integrating RASP and VAPT in Release and Deploy Stage
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## Module 10: Implementing DevSecOps Monitoring Feedback

### Topics covered:

- Implementing Infrastructure as Code (IaC)
- Integrating Configuration Orchestration
- Integrating Security in Operate and Monitor Stage
- Integrating Compliance as Code (CaC)
- Integrating Logging, Monitoring, and Alerting
- Integrating Continuous Feedback Loop

