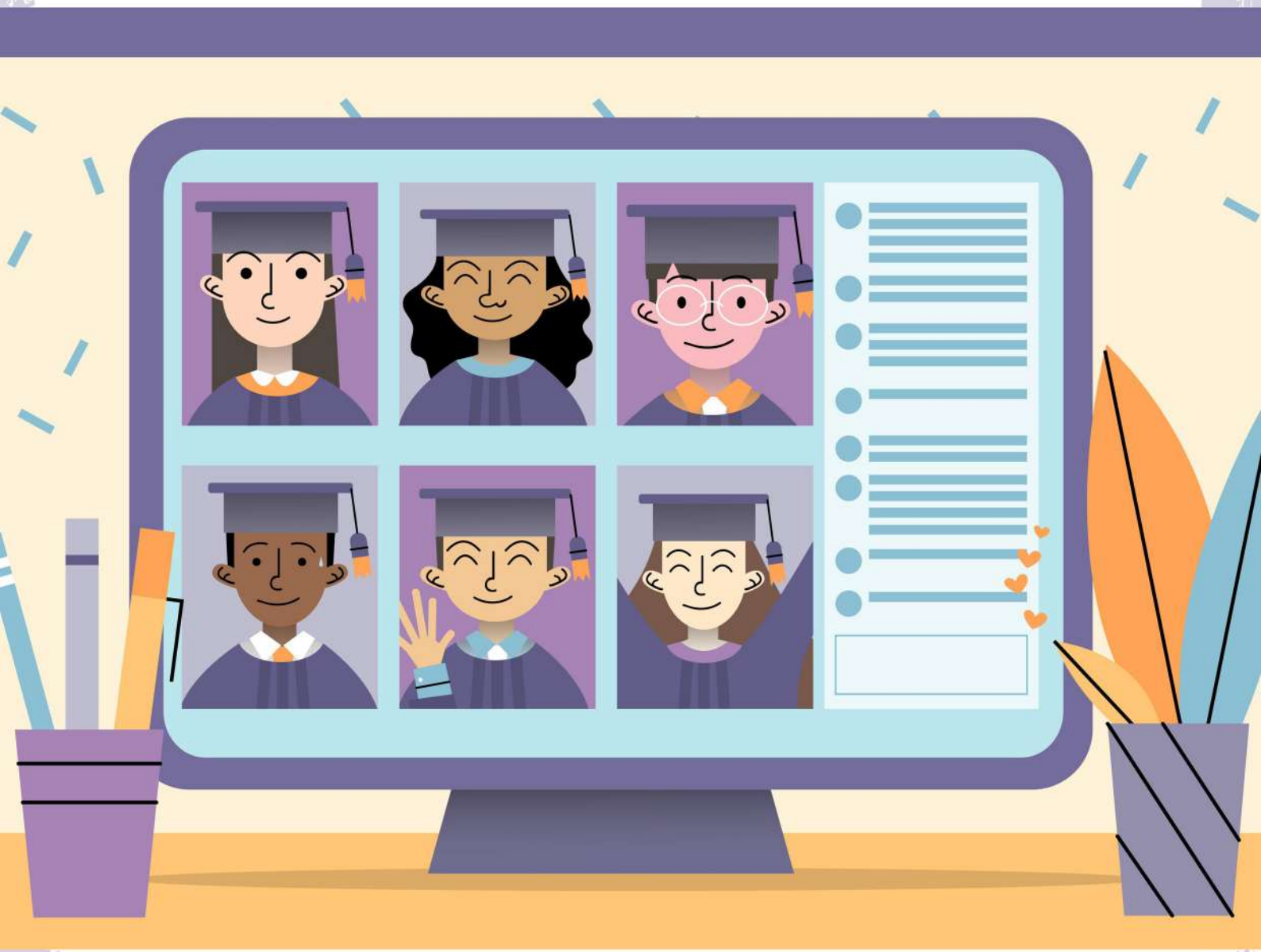




CertNexus Cyber Secure Coder



Online Course

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Course Modules

1.Common Secure App Dvlpmnt Terminology & Concepts

- Understand basic security principles
 - Encryption
 - Division of resources/categorization of components
 - The CIA Triad
 - AAA
 - Least privilege
 - Least common mechanism
 - Defense in Depth
 - Fail safe
 - Weakest link
 - Separation of duties
 - Monitoring
- Identify common hacking terminology and concepts
 - Black hat, gray hat, white hat
 - Builders and breakers
 - Social engineering
 - Vulnerability
 - Exploits and attacks

2. Job & Process Responsibilities Related to Secure App Dvpmt

- Explain the software development lifecycle
 - SDLC phases
 - Secure SDLC
- The role of the designer/architect in creating secure applications
 - Design deliverables
 - Whiteboarding
 - Compliance assurance & adherence to organizational requirements
- Explain the role of the developer in creating secure applications
 - Development deliverables
 - Debugging tools
 - Use of standard libraries and APIs
- Understand the role of the code reviewer in creating secure app
 - Review deliverables
 - Static analysis tools
 - Dynamic code analysis tools
- The role of the application tester in creating secure applications
 - Testing deliverables
 - Penetration testing

3. Architecture and Design

- Interpret use and abuse cases
 - Design intentions
 - Attacks
- Understand architecture and design industry best practices
 - Modular design
 - Design methodologies
 - Software design patterns
 - Security design patterns
 - Requiring strong passwords
 - Identity management process
 - Design of monitoring/logging system
- Identify common regulations that relate to secure software development
 - HIPAA
 - PCI DSS
 - ISO 27001
 - SOX
 - Country-specific privacy laws
- Explain the importance of organizational requirements
 - Internal organizational processes
 - Internal organizational policies

4. Risk Assessment and Management

- Classify common threats & vulnerabilities in terms of their impact
 - OWASP Top 10
 - CWE/SANS Top 25
 - Attack vectors
 - Assets
 - Risks
 - Threat types
 - Countermeasures
 - Impacts
 - Probability
- Compare and contrast common risk assessment & management
 - Quantitative risk assessment
 - Qualitative risk assessment
 - Policy adjustments/updates
 - Architectural review

5.Application Implementation

- Implement input validation
 - Input vulnerabilities
 - Input validation techniques
- Restrict the output of sensitive data
 - Output vulnerability
 - Output security techniques
- Implement cryptography
 - Crypto libraries
 - Key management
 - Algorithm implementation
 - Secure storage of data
- Implement authentication and access control
 - Password verification
 - Roles, permissions, groups
 - Account lockouts
 - Password recovery
- Implement error handling and logging
 - Error message logging
 - Security exception logging
 - Log centralization

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- Implement communication security
 - SSL/TLS
 - Encrypted tunnels
 - Mobile app considerations
 - IoT app considerations
 - Security of web services
- Implement application security parameters and config security
 - Parameterizing security properties and settings
 - Configuration file protection
 - Default passwords on third-party applications
- Implement secure database access
 - Elimination of string concatenation for database queries
 - Database connection access control

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