



# BAKER COLLEGE

## STUDENT LEARNING OUTCOMES

CS3310 Application Security Practices  
3 Semester Hours

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### Student Learning Outcomes and Enabling Objectives

1. Understand the importance of security in a gaming application
  - a) Explain what application security is
  - b) Discuss the reasons we have application security
  - c) Discuss the impact of little or no security
2. Incorporate security in a game application
  - a) Use a security development lifecycle during the game development process
  - b) Discuss how hackers might think and act
  - c) Construct and use safe coding practices
3. Assess threats
  - a) Examine how hackers might think and act
  - b) Describe common threats such as: piracy, cheating, subversion, theft, and fraud
  - c) Verify application for security compliance
  - d) Develop test cases for each threat
4. Apply a structured approach to mitigate threats that could impact a system
  - a) Discuss how legislation impacts application security
  - b) Use the SDL- Security development lifecycle during the game development process
  - c) Secure your code
  - d) Implement methods for achieving user privacy
  - e) Examine ways to secure the infrastructure – database, game server, and communication session
  - f) Apply encryption algorithms to secure authentication
  - g) Generate check sums
  - h) Examine error handling
  - i) Input validation
5. Identify countermeasures and how they can be used
  - a) Investigate social and economic implications
  - b) Implement auditing and logging
  - c) Analyze reasons to alter configurations
  - d) Explore the importance of quick fixes and patches

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## **Big Ideas and Essential Questions**

### **Big Ideas**

- Application Security, Threat Modeling, Security Practices and countermeasures

### **Essential Questions**

1. Why is security important in a gaming application?
2. What is application security?
3. What is the motivation of the attackers?
4. How can games be attacked?
5. How can games be designed to prevent vulnerabilities?
6. How are countermeasures used during or after an attack?
7. How does legislation impact application security? (examples may include: COPA Child Online Protection Act, Communications Decency Act, Child Pornography Prevention Act, Privacy Guidelines)

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These SLOs are approved for experiential credit.

**Effective: Fall 2017**