CS 3210: INTRODUCTION TO SOFTWARE SECURITY

Semester Hours: 3.0

Coordinator: Sankardas Roy

Text: Secure Coding in C and C++

Author(s): ROBERT SEACORD

Year: 2013

SPECIFIC COURSE INFORMATION

Catalog Description:

Course type: SELECTED ELECTIVE

SPECIFIC COURSE GOALS

- I can differentiate between secure coding and security software.
- I can describe the major security flaws of programs.
- I can have a basic proficiency in examining simple programs for safety issues.
- I can spot security vulnerabilities.
- I can mitigate certain vulnerabilities by refining the code and/or other structures.

LIST OF TOPICS COVERED

- Introduction (1 week)
  - Software security
  - Security software
  - Major security flaws
  - Types of threats
- OS Security (1.5 weeks)
  - Memory, CPU and I/O
• Program security (6 weeks)
  o String handling
  o Dynamic Memory
  o Input validation, and others
• Concurrency and race condition (2 weeks)
  o Files: time of check and time of use
• Best Practices (2 weeks)
  o Secure programming guidelines
  o Standards
• Scripting (1.5 weeks)