THE OHIO STATE UNIVERSITY

COLLEGE OF ENGINEERING

Offensive Security

ECE 5567.01

Credit Hours:
3.00

Course Levels:
Undergraduate (1000-5000 level)
Graduate (5000-8000 level)

Course Components:
Lecture
Lab

Course Description:
This course will give students an overview of existing offensive computing techniques, which include well known attacks that break confidentiality, integrity and availability of computing resources. Attacks targeting on human weaknesses without taking special care to security will also be discussed.

Prerequisites and Co-requisites:
Prereq: CSE 2431, 5431, or Grad standing.

Course Goals / Objectives:
- Be familiar with reconnaissance.
- Be familiar with confidentiality attacks.
- Be familiar with integrity attacks.
- Be familiar with availability attacks.
- Be familiar with human weakness attacks.

Course Topics:
- Common reconnaissance (e.g., fingerprinting, scanning, data gathering)
- Confidentiality attack: side-channel attacks
- Confidentiality attack: crypto and password attacks
- Confidentiality attack: data leakage attacks (e.g., SQL injection attack)
- Integrity attacks: malware attacks (e.g., virus, Trojans, ransomware, kernel rootkits)
- Integrity attacks: control flow hijack attacks
- Availability attacks: Denial of Service (DoS) and Distributed DoS (DDoS) attacks
- Human weakness attack (e.g., social engineering attacks)

Designation:
Elective