CIS-5373 Systems Security

Catalog Description
Risk, Trust, and Threat models; Types of Attacks; Safe Programming Techniques; Operating System Mechanisms; Virtual Machine Systems; Hardware Security Enforcers; Application Security; Personal Security. (3 credits)

Prerequisites
SCIS Graduate Standing
CIS-5372 Information Assurance

Type
Elective for MSIT and MSTN

Course Objectives
The basic computer infrastructure, ranging from consumer desktops to business servers are under continual attack from a variety of miscreants (or "hackers") for both fun and monetary gain. The design of computer systems have allowed many vulnerabilities to exist and the attacks exploit these vulnerabilities for stealing private information, perform unauthorized operations, destroy data and such. Computer Systems Security covers the art of countermeasures to attacks to general purpose systems, operating systems, applications and the end-user. The topics provide the student a keen insight into the methods employed by the miscreants, the loopholes that exist and how they come about and the methodology to prevent and defend against such attacks.

Topics
Security basics
Host security
Malware
High-level network security
Web security
Security models and practice
Distributed applications security

Textbook
Michael T. Goodrich and Roberto Tamassia. *Introduction to Computer Security*. (Pearson Addison Wesley, 2010)

Last Update
Jinpeng Wei 9/12/2012