ITM SECURITY (ITMS)

ITMS 428
Database Security
Students will engage in an in-depth examination of topics in data security including security considerations in applications and systems development, encryption methods, cryptography law and security architecture and models.
Prerequisite(s): ITMD 421
Lecture: 3 Lab: 0 Credits: 3

ITMS 443
Vulnerability Analysis and Control
This course addresses hands-on ethical hacking, penetration testing, and detection of malicious probes and their prevention. It provides students with in-depth theoretical and practical knowledge of the vulnerabilities of networks of computers including the networks themselves, operating systems, and important applications. Integrated with the lectures are laboratories focusing on the use of open source and freeware tools; students will learn in a closed environment to probe, penetrate, and hack other networks.
Lecture: 3 Lab: 0 Credits: 3

ITMS 448
Cyber Security Technologies
Prepares students for a role as a network security analyst and administrator. Topics include viruses, worms, and other attack mechanisms, vulnerabilities, and countermeasures; network security protocols, encryption, identity and authentication, scanning, firewalls, security tools, and organizations addressing security. A component of this course is a self-contained team project that, if the student wishes, can be extended into a fully operational security system in a subsequent course.
Prerequisite(s): ITMO 440 or ITMO 540 with min. grade of C
Lecture: 2 Lab: 2 Credits: 3
Satisfies: Communications (C)

ITMS 458
Operating System Security
This course will address theoretical concepts of operating system security, security architectures of current operating systems, and details of security implementation using best practices to configure operating systems to industry security standards. Server configuration, system-level firewalls, file system security, logging, anti-virus and anti-spyware measures and other operating system security strategies will be examined.
Prerequisite(s): ITMO 456
Lecture: 2 Lab: 2 Credits: 3

ITMS 479
Topics in Information Security
This course will cover a particular topic in Information Security, varying from semester to semester, in which there is particular student or staff interest. This course may be taken more than once but only 9 hours of ITMS 479/579 credit may be applied to a degree.
Credit: Variable

ITMS 484
Governance, Risk, and Compliance
This course is an in-depth examination of topics in information technology/information security governance, risk, and compliance including information assurance policies, standards, and compliance as well as the examination of security risk analysis and the performance of systems certification and accreditation.
Lecture: 3 Lab: 0 Credits: 3

ITMS 518
Coding Security
This course examines security architecture elements within modern object-oriented programming languages that create the framework for secure programming. Analysis of components and services with their inherent strength and weaknesses give rise to common coding security challenges. An exploration of identity management, encryption services and common hacking techniques will enable the student's ability to develop secure code. Homework assignments and projects will reinforce theories taught.
Prerequisite(s): ITMD 510 or ITMD 512 or ITMD 515
Lecture: 3 Lab: 0 Credits: 3

ITMS 528
Database Security
Students will engage in an in-depth examination of topics in data security including security considerations in applications & systems development, encryption methods, cryptography law, and security architecture & models.
Lecture: 3 Lab: 0 Credits: 3

ITMS 538
Cyber Forensics
This course will address methods to properly conduct a computer and/or network forensics investigation including digital evidence collection and evaluation and legal issues involved in network forensics. Technical issues in acquiring court-admissible chains of evidence using various forensic tools that reconstruct criminally liable actions at the physical and logical levels are also addressed. Technical topics covered include detailed analysis of hard disks, files systems (including FAT, NTFS and EXT), and removable storage media; mechanisms for hiding and detecting hidden information; and the hands-on use of powerful forensic analysis tools.
Lecture: 2 Lab: 2 Credits: 3
Prerequisite(s): object-oriented and/or scripting languages. Students should have previous experience with design and development of secure networks. This course includes attacks, vulnerability and intrusion detection, incident analysis and systems; operating system security, analysis of recent security production security system. Topics may include computer and developer and gives the student experience in developing a security system. This course may be taken more than once but only 9 hours of ITMS 579 credit may be applied to a degree.

Lecture: 2 Lab: 2 Credits: 3

ITMS 548
Operating Systems Security
This course will address theoretical concepts of operating system security, security architectures of current operating systems, and details of security implementation using best practices to configure operating systems to industry security standards. Server configuration, system-level firewalls, file system security, logging, anti-virus and anti-spyware measures and other operating system security strategies will be examined.

Lecture: 2 Lab: 2 Credits: 3

ITMS 549
Cyber Security Technologies: Projects & Advanced Methods
In-depth examination of topics in the management of information technology security including access control systems & methodology, business continuity & disaster recovery planning, legal issues in information system security, ethics, computer operations security, physical security and security architecture & models using current standards and models.

Lecture: 3 Lab: 0 Credits: 3

ITMS 557
Introduction to Cyber Warfare
Cyber warfare is defined as "warfare waged in cyberspace," which can include defending information and computer networks and deterring information attacks as well as denying an adversary's ability to do the same. It can include offensive information operations mounted against an adversary or even dominating information on the battlefield. Students participating in this discussion-based course will explore the current state of cyber security from national and international perspectives and consider cyber-based operations through the lens of a government pursuing strategic goals. How might their actions impact the industry's ability to conduct business operations? What does the current threat environment look like? The course will include extensive discussions and student presentations.

Lecture: 3 Lab: 0 Credits: 3

ITMS 558
Mobile Device Forensics
This course will address methods for recovering digital data or evidence and conducting forensic analysis of mobile devices such as smart phones and tablets. Various devices will be compared including iPhone, Android, and Blackberry. A brief review of Linux and related forensic tools. ANAND technology and mobile file systems will be discussed. Students will learn how to unlock and root mobile devices and recover data from actual mobile devices.

Lecture: 2 Lab: 2 Credits: 3
ITMS 584
Governance, Risk, and Compliance
This course is an in-depth examination of topics in information technology/information security governance, risk, and compliance including information assurance policies, standards, and compliance as well as the examination of security risk analysis and the performance of systems certification and accreditation.
Prerequisite(s): ITMS 578
Lecture: 3 Lab: 0 Credits: 3

ITMS 588
Incident Response, Disaster Recovery, and Business Continuity
Students learn to design and manage key business information security functions including incident response plans and incident response teams disaster recovery plans; and business continuity plans. Reporting, response planning and budgeting are all addressed. Students working in reams will prepare an incident response, disaster recovery, or business continuity plan for a real-world organizations such as a business or a government body or agency.
Lecture: 3 Lab: 0 Credits: 3