MURRAY STATE UNIVERSITY

DEPARTMENT OF INDUSTRIAL AND ENGINEERING TECHNOLOGY

Course Number: TSM 351 Credit Hours: 3.0

I. TITLE: Principles of Information Security

II. CATALOG DESCRIPTION:

Introduction to information assurance. Study of principles and mechanisms that enable secure network communications. Topics include security attacks and services, classical and modern-day cryptography, IP and web security, network access controls and malicious software. Prerequisites: CSC 101; Corequisite: TSM 343

III. PURPOSE:

Introduce students to the study of information assurance. Equip students with the basic knowledge of classical and modern-day cryptography. Help students understand how cryptography is used in network protocols to assure secure communications. Serves as the foundation class for the upper-level security courses.

IV. COURSE OBJECTIVES:

Through this course, the students will:

- Become acquainted with the terminologies used in information assurance
- Understand the types of security attacks and services
- Understand classical encryption techniques and their issues
- Understand the principles and basic operations of the modern-day block ciphers, public-key encryptions, and key management.
- Understand how cryptography is used in security-enhanced network protocols to provide secure network communications
- Be introduced to the topics of network access control and computer security.

V. CONTENT OUTLINE:

A. Introduction
   1. Security Attacks
   2. Security Services
B. Cryptography
   1. Private-Key Encryption
   2. Public-Key Encryption
C. Network Security
   1. IP Security
   2. Web Security
   3. Electronic Mail Security
   4. Authentication Applications
   5. Access Control
D. Computer Security
   1. Viruses
   2. Worms

VI. INSTRUCTIONAL ACTIVITIES:

Primarily lecture-based course for on-campus class; Self-directed study for on-line class

VII. FIELD, CLINICAL, AND/OR LABORATORY EXPERIENCES:

None

VIII. RESOURCES:

The course web page is available on Blackboard Learning System.

IX. GRADING PROCEDURES:

Homework	40 %
Exams	50 %
Projects	10 %

Grading Scale:

90-100%	A
80-89%	B
70-79%	C
60-69%	D
Below 60%	E

X. ATTENDANCE POLICY:

Attendance is expected from both on-campus and on-line students. The details of attendance policy are given in the course web page.

XI. ACADEMIC HONESTY POLICY:

Cheating, plagiarism, submitting another person's material as one's own, or doing work for another person who will receive academic credit are all impermissible. This includes the use of unauthorized books, notebooks, or other sources in order to secure or give help during an examination, the unauthorized copying of examinations, assignments, reports, or term papers, laboratory reports, drawings or the presentation of unacknowledged material as if it were the student's own work. Disciplinary action may result and no credit for an assignment or exam and/or failure of the course.

XII. TEXT AND REFERENCES:

William Stallings and Lawrie Brown, "Computer Security: Principles and Practice", 2008, Prentice Hall, ISBN 0136004245

XIII. PREREQUISITES:

CSC 101; Corequisite: TSM 343

XIV. STATEMENT OF AFFIRMATIVE ACTION AND EQUAL OPPORTUNITY:

Murray State University endorses the intent of all federal and state laws created to prohibit discrimination. Murray State University does not discriminate on the basis of race, color, national origin, gender, sexual orientation, religion, age, veteran status, or disability in

employment, admissions, or the provision of services and provides, upon request, reasonable accommodation including auxiliary aids and services necessary to afford individuals with disabilities equal access to participate in all programs and activities. For more information, contact Sabrina Y. Dial, Director of Equal Opportunity, Murray State University, 103 Wells Hall, Murray, KY 42071-3318. Telephone: 270-809-3155 (voice), 270-809-3361 (TDD).