Course Title and Code	CS451- computer security

I. Course Identification and General Information:

Course Title	Introduction to computer security	Course Code	CS451	Pre-requisite	CS315
Department	Computer Science	Course Level	9	Credit Hours	3

II. Course Description/Topics: The following course topics will be covered.

- Nature of the Threats (e.g. natural, intentional, accidental)
- Definition and need for Information Assurance
- Basic Information Assurance Concepts that should be recognized. (Confidentiality, Integrity, Availability).
- Industry, Government, and Cultural Guidelines, Standards, and Differences including topics such as HIPAA, ISO 27002, Safe Harbor, and data protection laws.
- Legal, Ethical, and Social Issues (cross-reference SP).
- Threats and Vulnerabilities.
- Motivation of Attackers.
- Protection Mechanisms.
- Incident Response.

III. Course Outcomes: Summary of the main learning outcomes for students enrolled in the course.

- Describe the types of threats to data and information systems.
- Describe why processes and data need protection.
- Describe the context in which Confidentiality, Integrity, and Availability are important to given processes or data.
- Describe the significant national/international level laws affecting the obligation for the protection of data.
- Describe the impact of ethics and social issues in information assurance and security.
- Describe the major vulnerabilities present in systems today and the types of attacks.
- Define the fundamental motivations for intentional malicious exploitation of vulnerabilities.
- Define the protection mechanisms that can be used to detect or mitigate malicious activity in information systems.
- Define an incident and evaluate the roles and actions taken in response to an incident.

IV. Required Text:

- William Stallings, Cryptography and Network Security: Principles and Practice (5th
- Edition), Prentice Hall, 2011.
- Charles P. Pfleeger and Shari L. Pfleeger. Security in Computing (3rd edition). Prentice-Hall. 2003. ISBN: 0-13-035548-8.

V. References:

- Mark Stamp, Information Security : Principles and Practice, Second Edition, Wiley-Interscience, 2011.
- Anderson, Ross. Security Engineering -- A Guide to Building Dependable Distributed Systems. John Wiley & Sons, 2008, Second Edition.
- Matt Bishop, Introduction to Computer Security, 1st Ed., Addison Wesley, 2005.