Southeast Missouri State University

Department of Industrial and Engineering Technology Course No. CY510
Title of Course: Information Security and Assurance Revision New Fall 2012

I. Catalog Description and Credit Hours of Course:
   System security principles, Components of system security, Information assurance with high
   assurance software design, Cryptographic principles to design secure systems, Data protection at
   rest and in motion and evolution of challenges in information security. 3 credit hours.

II. Prerequisite(s): CY201 or consent of instructor.

III. Purposes or Objectives of the Course:
   A. Understand system requirements for information assurance.
   B. Understand high assurance security design principles.
   C. Understand how secure systems are built around software, hardware, and networks.

IV. Student Learning Outcomes:
   A. Students will be able to identify critical components in system security of a cyber-infrastructure.
   B. Students will be able to demonstrate usage of cryptographic primitives in design of information
      security systems.
   C. Students will be able to demonstrate ability to perform basic computer forensic investigation
      using software tools in an ethical way.

V. Expectations of Students:
   A. Students are expected to read assigned materials.
   B. Students are expected to complete all assignments. Assignments will ONLY be accepted on the
      due dates provided, unless previous arrangements are made or student provides a written
      medical doctor's excuse.
   C. Students are expected to participate in class and group discussions.
   D. Student work will be completed in accordance with Code of Student Conduct
      (http://www6.semo.edu/judaffairs/code.html).
   E. In a professional environment, work areas are kept clean. In keeping with a professional attitude
      towards fellow students, always clean your area before leaving.
   F. All laboratory work must be completed during the regularly scheduled lab time.

VI. Course Content or Outline: (4 contact hours per week)
   A. 1. Overview of Security in Cyber Infrastructure 2 Weeks
       2. Legal and Ethical Issues in Computing 2 Weeks
       3. Threats to Cyber Infrastructure 2 Weeks
       4. Privacy In Computing 1 Week
       5. Security policies 1 Week
       6. Elementary Cryptography 1 Week
       7. Secure Programs, Malware, Anti-Virus etc. 1 Week
       8. Security In Operating Systems 2 Weeks
       9. Networking/Database Security 1 Week
       10. Tools for Forensic Analysis 2 Weeks
VII.  Textbook(s) and/or Other Required Materials or Equipment:


VIII. Basis for Student Evaluations

A.  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