Course Outline

COURSE: CSIS 179  DIVISION: 50  ALSO LISTED AS:

TERM EFFECTIVE: Fall 2015  CURRICULUM APPROVAL DATE: 03/23/2015

SHORT TITLE: INTRO TO INFO SEC

LONG TITLE: Introduction to Information Security

<table>
<thead>
<tr>
<th>Units</th>
<th>Number of Weeks</th>
<th>Type</th>
<th>Contact Hours/Week</th>
<th>Total Contact Hours</th>
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<tr>
<td>4</td>
<td>18</td>
<td>Lecture</td>
<td>4</td>
<td>72</td>
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<td></td>
<td></td>
<td>Lab</td>
<td>0</td>
<td>0</td>
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<tr>
<td></td>
<td></td>
<td>Other</td>
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<td></td>
<td></td>
<td>Total</td>
<td>4</td>
<td>72</td>
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COURSE DESCRIPTION:

This course introduces students to network security concepts and prepares them for computer systems and network management duties. This course covers security concepts, communications and infrastructure security, basic cryptography, and operational and organizational security. This course has the option of a letter grade or pass/no pass. ADVISORY: CSIS 178.

PREREQUISITES:

COREQUISITES:

CREDIT STATUS: D - Credit - Degree Applicable

GRADING MODES

- L - Standard Letter Grade
- P - Pass/No Pass

REPEATABILITY: N - Course may not be repeated

SCHEDULE TYPES:

- 02 - Lecture and/or discussion
- 05 - Hybrid
- 72 - Dist. Ed Internet Delayed

STUDENT LEARNING OUTCOMES:

2. Define and identify malicious code as generated by hackers, crackers, spies and cyberterrorists. 
Measure: exams, homework 
PLO: 1 
ILO: 2,3,7 
GE-LO: 
Year assessed or anticipated year of assessment: 2014 

3. Audit information security schemes to determine the relative security of a computer or a network. 
Measure: exams, homework 
PLO: 1 
ILO: 2,3,7 
GE-LO: 
Year assessed or anticipated year of assessment: 2014 

4. Harden Systems by implementing various security protocols such as anti-virus software firewalls and WEP for wireless networks. 
Measure: exams, homework 
PLO: 1,2 
ILO: 2,3,7 
GE-LO: 
Year assessed or anticipated year of assessment: 2014 

5. Explain cryptographic strengths and vulnerabilities as used in VPN (virtual private networks) and other tunneling protocols 
Measure: exams, homework 
PLO: 1 
ILO: 2,3,7 
GE-LO: 
Year assessed or anticipated year of assessment: 2014 

PROGRAM LEARNING OUTCOMES: 
1. Student will demonstrate entry-level skills and knowledge of the networking profession 
2. Students will be eligible to take the industry A+ hardware exam. 

CONTENT, STUDENT PERFORMANCE OBJECTIVES, OUT-OF-CLASS ASSIGNMENTS 
Curriculum Approval Date: 03/23/2015 
(10 Hours) Introduction to information security 
Understanding the Importance of Information Security 
Preventing Data Theft 
Avoiding Legal Consequences
Maintaining Productivity
Foilng cyber terrorism
Thwarting Identity Theft
Understanding Information Security
Attacker Profiles including Hackers Crackers Script Kiddies Spies Employees, Cyber terrorists
Understanding Basic Attacks: Social Engineering, Password Guessing, Weak Keys,
Mathematical Attacks, Birthday Attacks. Examining Identity Attacks, Man-in-the-Middle
Attacks, Replay, TCP/IP Hijacking, Identifying Denial of Service Attacks
Understanding Malicious Code (Malware), Viruses, Worms, Logic Bombs, Trojan Horses, Back Doors

(20 Hours) Secure network infrastructure and communications
Disabling Nonessential Systems
Hardening Operating Systems: Applying Updates, Securing the File System
Hardening Applications: Hardening Servers, Hardening Data Repositories, Hardening Networks:
Firmware Updates, Network Configuration-
Working with the Network Cable Plant: Coaxial Cables, Twisted-Pair Cables, Fiber-Optic Cables,
Securing the Cable Plant
Securing Removable Media: Magnetic Media, Optical Media, Electronic Media, Keeping Removable Media Secure
Designing Network Topologies: Security Zones, Network Address Translation (NAT), Honeypots, Virtual LANs (VLANs)

(20 Hours) Web Security
Protecting E-mail Systems, How E-Mail Works, E-mail Vulnerabilities, E-mail Encryption, Examining World Wide Web Vulnerabilities, JavaScript, Java Applet, ActiveX, Cookies, Common Gateway Interface (CCI), Naming Conventions
Securing Web Communications, Secure Sockets Layer (SSL)/Transport Layer Security (TLS), Secure Hypertext Transport Protocol (HTTPS), Securing Instant Messaging
Handling File Transfer Protocol (FTP)
Securing Remote Access, Tunneling Protocols, Layer 2 Tunneling Protocol (L2TP), Authentication Technologies, Secure Transmission Protocols, Virtual Private Networks (VPNs)

(20 Hours) Security Management
Understanding Computer Forensics
Forensics Opportunities and Challenges
Responding to a Computer Forensics Incident
Securing the Crime Scene, Preserving the Data
Establishing the Chain of Custody
Examining Data for Evidence
Hardening Security through New Solutions

(2 Hours) Final Exam

METHODS OF INSTRUCTION:
Lecture, computer demonstrations, projects

METHODS OF EVALUATION:
CATEGORY 1 - The types of writing assignments required:
Percent range of total grade: 0 % to %

CATEGORY 2 - The problem-solving assignments required:
Percent range of total grade: 20 % to 40 %
Homework Problems
Quizzes
Exams

CATEGORY 3 - The types of skill demonstrations required:
Percent range of total grade: 20 % to 40 %
Performance Exams

CATEGORY 4 - The types of objective examinations used in the course:
Percent range of total grade: 20 % to 40 %
Multiple Choice
True/False
Matching Items
Completion

REPRESENTATIVE TEXTBOOKS:
Required:
Reading level of text, Grade: 12+  Verified by: ev

ARTICULATION and CERTIFICATE INFORMATION
Associate Degree:
CSU GE:
IGETC:
CSU TRANSFER:
Transferable CSU, effective 200830
UC TRANSFER:
Not Transferable

SUPPLEMENTAL DATA:
Basic Skills: N
Classification: Y
Noncredit Category: Y
Cooperative Education:
Program Status: 1 Program Applicable
Special Class Status: N
CAN:
CAN Sequence:
CSU Crosswalk Course Department: CSIS
CSU Crosswalk Course Number: 179

3/19/2015
Prior to College Level: Y
Non Credit Enhanced Funding: N
Funding Agency Code: Y
In-Service: N
Occupational Course: C
Maximum Hours:
Minimum Hours:
Course Control Number: CCC000456075
Sports/Physical Education Course: N
Taxonomy of Program: 070810