Computer Science Technology Department
Houston Community College

ITSY 2300 Operating System Security
Course Syllabus

Instructor	Name: H. M Le Tel: Office: 713-718-6427 Email: hung.le8@hccs.edu Website: http://eagle.hccs.edu/faculty/le_h		
Course Reference Number (CRN)	60303	**Course Level**	Intermediate
Course Description:	Safeguard computer operating systems by demonstrating server support skills and designing and implementing a security system. Identify security threats and monitor network security implementations. Use best practices to configure operating systems to industry security standards.		
Course Prerequisite(s)	ITSY 1342 Information Technology Security		
Course Semester Credit Hours (SCH) (Lecture, Lab)	Credit Hours 3.0 (Lecture 2, Lab 4)		
Course Location/Times	JDB 207, HCC Central Campus Tuesday 06.00-10.00 PM	**Total Course Contact Hours**	96
Instructional Materials	Hacking Exposed 7, Network Security Secrets & Solutions, George Kurtz,Joel Scambray and Stuart McClure, 7th Edition, ISBN 978-0-07-178028-5 (McGraw Hill)		
Instructional Methods (select one)	Face to Face	**Type of Instruction**	Lecture/Lab, COOP, Practicum, or Lecture
Course Length (number of weeks)		16 Weeks	

Instructor's Requirements	• Access to a PC running Windows XP/Vista/Windows 7/Linux/Unix with internet access. • Access to a PC with VMWare Workstation software installed • PC should have "Microsoft Windows Server 2008" installed as VMWare instance • Textbook
Instructor Grading Criteria	8 quizzes @ 25 pts each------------200 pts 8 Projects @ different pts----------300 pts Final exam-------------------------100 pts -------------- Total-------------------------------600 pts A = 90% - 100% B = 80% - 89% C = 70% - 79% D = 60% - 69% F = below 59%
	Note: This syllabus is subject to change
Course Calendar	

Date	Quiz	Topic
8/27/2013		**Introduction**
9/3/2012		
9/10/2012		**Ch 9: Hacking Hardware**
9/17/2013		**Ch 3:**
9/24/2013	**Quiz on Ch 1-3** **Project 1-3 due**	**Ch 4:**
10/1/2013	**Quiz on Ch 4** **Proj 4 &5 due**	**Ch 5:**
10/8/2013	**Quiz on Ch 5** **Proj 6 & 7 due**	**Ch 6:**

10/15/2013	Quiz on Ch 6 Proj 8 & 9 due	Ch 7:
10/22/2013	Quiz on Ch 7 Proj 10 & 11 due	Ch 8:
10/29/2013	Quiz on Ch 8 Proj 12 & 13 due	Ch 9:
11/5/2013	Quiz on Ch 9 Proj 14 & 15 due	Ch 10:
11/12/2013	Quiz on Ch 10 Proj 16 & 17 due	Ch 11:
11/19/2013	Quiz on Ch 11 Proj 18 & 19 due	Ch 12:
11/26/2013	Quiz on Ch 12 Proj 20 & 21 due	All Projects due
12/3/2013	Last class meeting Proj 22 due	Topic to be announced

12/10/2013	Final Exam	

Learning Objective, Students Learning Outcome, and Program Spec

Note: This section of the syllabus provides the general course learning objectives, the expected students learning outcome, the course scope in terms of the department program, and the instrument used to evaluate the course. If you have any question, contact the instructor or the department.

HCC Grading Scale	<table><tr><th>Grade</th><th>GPA Points</th></tr><tr><td>A = 100- 90</td><td>4 points per semester hour</td></tr><tr><td>B = 89 – 80:</td><td>3 points per semester hour</td></tr><tr><td>C = 79 – 70:</td><td>2 points per semester hour</td></tr><tr><td>D = 69 – 60:</td><td>1 points per semester hour</td></tr><tr><td>59 and below = F</td><td>0 points per semester hour</td></tr><tr><td>IP (In Progress)</td><td>0 points per semester hour</td></tr><tr><td>W(Withdrawn)</td><td>0 points per semester hour</td></tr><tr><td>I (Incomplete)</td><td>0 points per semester hour</td></tr><tr><td>AUD (Audit)</td><td>0 points per semester hour</td></tr></table> IP (In Progress) is given only in certain developmental courses. The student must re-enroll to receive credit. COM (Completed) is given in non-credit and continuing education courses. To compute grade point average (GPA), divide the total grade points by the total number of semester hours attempted. The grades "IP," "COM" and "I" do not affect GPA.
Course Student Learning Outcomes (SLO):	• Identify network security risks, security design, and monitoring solutions • Identify sources of computer threats, evaluate potential practices, tools, and technologies to protect individual network systems

	• Establish and sustain an operating system security plan utilizing systems and application security tools • Implement procedures to secure and monitor audit logs and set system administrator alerts • Develop an organizational operating system security plan that provides for periodic reviews of security policies, procedures, authorized users list, and software update patches.
Learning Objectives	Upon successful completion of this course, the student will be able to: A. Explain what an ethical hacker can and can not do legally, and explain the credentials and roles of penetration testers. B. Define the types of malicious software found in modern networks. C. Explain the threats and countermeasures for physical security and social engineering. D. Perform footprinting to learn about a company and its network. E. Perform port scans to locate potential entry points to servers and networks. F. Perform enumeration (finding resources, accounts, and passwords) on Microsoft, Netware, and Unix/Linux targets. G. Perform very simple programming in C, HTML, and Perl, specifically oriented towards the needs of network security professionals. H. Learn how to identify Microsoft Windows vulnerabilities and to harden systems. I. Learn how to identify Linux vulnerabilities and to protect servers. J. Describe how to take control of Web Servers, and how to protect them. K. Locate and hack into wireless networks, and protect them. L. Explain how cryptography and hashing work, and perform attacks against them such as password cracking and man-in-the-middle attacks. M. Describe and deploy security devices, including routers, firewalls, Intrusion Detection Systems, and honeypots.
Student Assignments	Refer to the course calendar
Student Assessment(s)	1. **Use appropriate integrated software to solve contemporary real-world problems.** Assessment criteria under development 2. **Integrate appropriate features from several commonly used application programs to generate a document (or set of documents) that solves a contemporary real-world problem.** Assessment criteria under development 3. **Use Spreadsheets to create a chart with the statistics you plan to use in your presentation slideshow.** Assessment criteria under development 4. **Demonstrate proper file management techniques to manipulate files and folders in a networked environment.** Assessment criteria under development 5. **Apply proper formatting techniques to a document draft so that it models a previously formatted document.** Assessment criteria under development 6. **Develop an algorithm that solves a problem.** Assessment criteria under development 7. **Demonstrate the effective use of search engines to find reliable and relevant internet resources.** Assessment criteria under development 8. **Create data that can be edited and kept current.**

	Assessment criteria under development 9. **Demonstrate effective oral presentation skills using a slideshow (created with a presentation graphics program) as a visual aid.** Assessment criteria under development
Program/Discipline Requirements:	Instructors will use syllabus that will satisfy CurricuUNET requirements and improve on-going assessment of student-centered learning and teaching.
Academic Discipline/CTE Program Learning Outcomes	• Install, configure, upgrade, and troubleshoot personal computer operating systems • Install, configure and troubleshoot networking hardware, protocols and services • Manage and Maintain a Microsoft Windows Server 2008 Environment/Network Infrastructure • Demonstrate knowledge in General Security Concepts, Communication Security, Infrastructure Security, and Unified Communications
SCANS and/or Core Curriculum Competencies: If applicable	C16: Monitors and Corrects Performance Students monitor and correct performance of a Windows 2008 server in this course. Students correct performance and predict impact of specific actions while working with lab partners. Students identify trends and gather information by monitoring system performance. C17: Improves and Designs Systems Students have to plan a Windows Server 2008 Securing Network and Computers Authentication and Encryption, Implementing Security Policies, Network application security, Monitoring, Auditing, and Network Analysis, Disaster Planning and Recovery, AND Vulnerability Assessment
HCC Policy Statement	
Access Student Services Policies on their Web site:	http://hccs.edu/student-rights
Distance Education and/or Continuing Education Policies	
Access DE Policies on their Web site:	http://de.hccs.edu/de/de-student-handbook
Access CE Policies on their Web site for non-credit classes:	http://hccs.edu/CE-student-guidelines
Competencies: If applicable	