

THE VICTORIA COLLEGE

COURSE SYLLABUS

COURSE: ITNW 1351

COURSE TITLE: Fundamentals of Wireless LANs

COURSE DESCRIPTION:

Designing, planning, implementing, operating, and troubleshooting wireless LANs (WLANs). Includes WLAN design, installation, and configuration; and WLAN security issues and vendor interoperability strategies.

PREREQUISITE: Texas Success Initiative complete in Reading and Math

COURSE OBJECTIVE:

LECTURE/WEEK: 2

LAB/WEEK: 2

CONTACT/HOURS: 64

CREDIT/HOURS: 3

TEXAS SKILL STANDARDS ALLIGNMENT:

This course teaches many of the skill standards established by the information technology industry through the National Workforce Center for Emerging Technologies and the Texas Skill Standards Board. This course satisfies some Critical Work Functions and the associated Key Activities in two separate standards sets. They are Cybersecurity Skill Standards (designated by an "S" for Cybersecurity Skills) and Network Design and Administration Skill Standards (designated by an "L" for LAN Skills).

Critical Work Functions and Key activities addressed in this course:

Cybersecurity Skills (S.)

None

Network Design and Administration Skills (L.)

L.A - Perform Analysis

- L.A1 Gather data to identify customer requirements
- L.A2 Identify, interpret and evaluate system, network and security requirements
- L.A3 Define scope of work
- L.A4 Review network architecture, topology, interdependencies and constraints
- L.A5 Research technical alternatives and analyze technical

L.B - Design Network

- L.B1 Participate in design reviews
- L.B2 Prepare integration plan for new processes, protocols and equipment
- L.B3 Recommend selection of architecture, topology, hardware and software
- L.B4 Prepare capacity and throughput plan
- L.B6 Specify wired and wireless facilities

L.C - Configure and Deploy Network

- L.C2 Implement new system configuration
- L.C5 Implement deployment
- L.C7 Install hardware

L.D - Perform Testing

L.D1 Define and document test specifications

L.D2 Develop test plan and procedures

L.D3 Schedule and perform testing

L.G - Perform Security Administration

L.G1 Gather and document security requirements

L.G4 Maintain, improve and enhance security in response to industry developments and user experience

COMPETENCIES:

1. Students will learn basic components of wireless networking.
2. Students will describe basic components of a network including network types, devices, and protocols.
3. Students will perform basic IP addressing.
4. Students will demonstrate knowledge of wireless standards such as 802.11a, 802.11b, 802.11g and Bluetooth.
5. Students will design and configure an ad hoc wireless LAN.
6. Students will design and configure an infrastructure wireless LAN.
7. Students will describe elements of wireless security including WEP Encryption, PGP, SSH, SSL, NAT and firewalls.
8. Students will demonstrate knowledge of wireless hot spots and working 'on the road'.
9. Students will demonstrate knowledge of antenna types and connectors.
10. Students will solve common wireless networking problems.
11. Students will demonstrate knowledge of wireless vulnerabilities and solutions.

SCANS SKILLS:

1. (Reading) Students will read text assignments and other outside reading as required by instructor.
2. (Writing) Students will provide case projects requiring the use of writing skills.
3. (Mathematics)
4. (Speaking and Listening) Students will participate in class discussions and group interaction to solve wireless network problems.
5. (Thinking Skills) Students will use thinking skills to solve wireless network problems.
6. (Personal Qualities) Students will participate in groups to develop teamwork skills.
7. (Workplace Competencies) Students will learn to provide timely solutions within a specified deadline.
8. (Basic Use of Computers) Students will use computers to configure a wireless LAN. Students will also use computers as information-gathering tools to collect data and research.

GRADING POLICY:

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|------------|-----|
| Exam 1 | 20% |
| Exam 2 | 20% |
| Lab | 20% |
| Project | 20% |
| Final Exam | 20% |

GRADING INFORMATION:

Students must take tests at the scheduled times/dates, unless arrangements have been made PRIOR to the scheduled test date. Any student who does not make such arrangements and who misses an exam will be given a grade of 0%.

If a student misses a class, it is the responsibility of the student to obtain information PRIOR to the next class period about discussions, notes, assignments that were covered during the missed class period.

ATTENDANCE POLICY:

Students are expected to attend class regularly and are responsible for obtaining and completing all

assignments on a timely basis. The college attendance policy is found in the current Victoria College catalog.

DEVIATION FROM SYLLABUS:

Deviation from this syllabus may become necessary for cause. Identification of cause is the prerogative of the instructor. Students will be advised of any deviation in a timely manner to prevent adversity in the management and learning of the material.

STUDENT REQUIREMENTS:

1. Students are required to purchase the required textbooks and read assignments.
2. Students will be required to bring note-taking materials to every class including labs.
3. Students will be required to complete all exams, lab assignments and/or projects.

Some computer downtime is to be expected due to breakdowns and failures. In such cases students will be expected to share computers or look on with other students.

The college will make reasonable accommodations for persons with documented disabilities. Students should notify Counseling Services in the Administration II Building (572-6414) and their instructor of any special needs.

VICTORIA COLLEGE STUDENT SERVICES:

VICTORIA COLLEGE STUDENT SERVICES DIVISION provides students with access to various types of assistance. Please visit their web site at: <http://www.victoriacollege.edu/student-services/ssd.html>