**CTC 228 Introductions to Operating Systems and Networks**

Fall 2015

Instructor: Robert Spengler

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Office location:TBA (email for appointment)

**CATALOG DESCRIPTION:** This course acquaints students with basic networking concepts such as TCP/IP, local/ wide area networking as well as emerging industry topics such as Radio Frequency Identification (RFID), Global Information Systems (GIS), Networked Attached Storage (NAS), and WiMAX. (ADD Existing Government Standards /Terms will be introduced such as Trusted Computers, Rainbow Series Reports, Federal Information Processing Standards, The Committee on National Security Systems, etc.)

**PRE-REQUISITE:**

CSC 116: Introduction to Computer Hardware

**PREREQUISITES BY TOPIC:**

Students should be familiar with the installation, upgrade and troubleshooting of personal computers.

TEXTBOOK: Guide to Networking Essentials 6th Ed, by Greg Tomsho

ISBN 13: 978-1-4188-3718-1

ISBN 10: 1-4188-3718-0

**COURSE GOALS**

This course provides students with basic networking concepts such as Extending Switched Networks with VLANS, Determining IP Routes, Managing IP traffic with Access Lists, Establishing Point-to- Point connections, and Establishing Frame Relay Connections. The course also addresses emerging industry topics such as Radio Frequency Identification (RFID), Global Information Systems (GIS), Networked Attached Storage (NAS), Cable Installation and Management, as well as Fixed and Mobile WiMAX. (ADD Awareness and understanding of Existing Government Standards /Terms will be introduced such as Trusted Computers, Rainbow Series Reports, Federal Information Processing Standards, The Committee on National Security Systems, etc. which impact Government Operating Systems and Networks )

**COURSE OUTCOMES:**

Upon completion of this course, students will be able to:

 Describe and install the hardware and software required to be able to communicate across a network.

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 Describe, compare and contrast network communications using two examples of layered models.

 Describe the physical, electrical, and mechanical properties and standards associated with copper media used in networks.

 Describe the physical, electrical, and mechanical properties and standards associated with optical media used in networks.

 Describe the standards and properties associated with the transmission and reception of wireless signals used in networks.

 Describe the principles and practice of switching on an Ethernet network.

\* Explain the issues associated with the transmission of signals on networking media

**ATTENDANCE:** The student is responsible for materials missed during an absence, whether excused or not. Classes will start at the prescribed time and will end at the prescribed time. Instructor will be available by appointment.

**GRADING BREAKDOWN:**

Homework 10%

Projects 10%

Midterm 40%

Final 40%

90-100 A

80-89 B

70-79 C

60-69 D

Below 60 F

**GENERAL POLICIES:**

***ACADEMIC HONOR CODE***

*Programming assignments must be done individually. Failure to do so will result in a violation of the CSUDH Academic Honor Code. The following cases will be considered as violations: identical code, and extremely similar code. Violations will be reported to the Office of Vice President of Academic Affairs.*

***ATTENDANCE POLICY***

*Excessive absences will result in lowered grades. Excessive absenteeism, whether excused or unexcused, may result in a student’s course grade being reduced or in assignment of a grade of “F”. Absences are accumulated beginning with the first day of class.*

***STUDENT ACADEMIC APPEALS PROCESS***

*Authority and responsibility for assigning grades to students rests with the faculty. However, in those instances where students believe that miscommunication, error, or unfairness of any kind may have adversely affected the instructor’s assessment of their academic performance, the student has a right to appeal by the procedure listed in the Undergraduate Catalog and by doing so within thirty days of receiving the grade or experiencing any other problematic academic event that prompted the complaint.*

***ADA STATEMENT***

*Students with disabilities, who believe they may need an academic adjustment in this class, are encouraged to contact me as soon as possible to better ensure receipt of timely adjustments.*

***DEFINITION OF CHEATING AND PLAGIARISM***

*CSUDH is dedicated to a high standard of academic integrity among its faculty and students. In becoming part of the California State University academic community, students are responsible for honesty and independent effort. Disciplinary action will be taken against any student who alone or*

*with others engages in any act of academic fraud or deceit.* (Read University Regulations in University

Catalog)

**COURSE OUTLINE (Very tentative!)**

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| **Week** | **Topic** | **Homework** |
| 1 | Introduction to Networks | Read Chapter 1 |
| 2 | Network Hardware | Read Chapter 2 |
| 3 | Network Topologies | Read Chapter 3 |
| 4 | Network Media | Read Chapter 4 |
| 5 | Network Protocols | Read Chapter 5 |
| 6 | Network Reference Models | Read Chapter 6 |
| 7 | Network Hardware In Depth | Read Chapter 7 |
| 8 | Midterm Review and Midterm | Review for Midterm |
| 9 | Network Operating System Fundamentals | Read Chapter 8 |
| 10 | Server Management and Administration | Read Chapter 9 |
| 11 | Introduction to Network Security | Read Chapter 10 |
| 12 | Supporting a Small Business Network | Read Chapter 11 |
| 13 | Wide Area Networks | Read Chapter 12 |
| 14 | Troubleshooting | Read Chapter 13 |
| 15 | Final Review | Review for the final exam |
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Midterm: Oct 14

Final: Consult CSUDH final schedule