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INFO 357-01 Telecommunications and Networking

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INFO 357 – 01 TELECOMMUNICATIONS AND NETWORKING

COURSE SYLLABUS

CLASS LOCATION AND TIME: Hailstones Hall, Room 4, M (6:00 pm – 8:30pm)

INSTRUCTOR:

Name: Dr Adekunle Okunoye
Email: okunoye@xavier.edu
Office Location: Room 319 Hailstones Hall
Office Hours: MWF 9:00 – 10:00am; 12:30am – 1:30pm
Or by appointment

Telephone: 513 745 3052 (office)

COURSE DESCRIPTION

The understanding of data communications and networking is imperative for adequate functioning of organizations. This is due to the convergence of computing, telecommunications and broadcasting and the growing applications of information technology in businesses and organizations. The knowledge of these key areas of information systems also becomes essential for competitive advantage. This course combines the basic technical concepts of data communications, telecommunications and networking with the managerial aspects and practical applications.

The global proliferation and continuous expansion of the networks and the advent of digital economy raises concern about privacy and security. This course will cover the fundamental issues that relate to privacy and network security and how organizations can minimize network and data communication risks. The course examines the fundamentals of networking while presenting the Open Systems Interconnection (OSI) layered architecture model. These will be approached with series of lectures, assignments and projects (individual and group), presentations, class discussions, and guest speaker presentations. The course presents the students with an opportunity to understand the concept of philanthropy while gaining practical experience on design and implementation of wired and/or wireless network

MISSION

At Williams College of Business, “*we educate students of business, enabling them to improve organizations and society, consistent with the Jesuit tradition*”. In this course, we provide students with an understanding of the contemporary issues in telecommunications and networking and how these could be used to further the developments and productivity of an organization. The students will also learn how the people and the society are affected by these issues and how ethical standards could be maintained in a dynamic and competitive networked organizational environment. The students will collaborate with non-profit organizations to determine their telecommunication and networking requirements and work with the organizations in preparing grant application. The students will participate in the fair and objective evaluation of grant proposals and support the implementation of the project that wins the award.

COURSE OBJECTIVES

At the end of the course, the students should be able to:

- understand the basic concepts of data communications and networking
- have broad knowledge of technical aspects of data communications and networks
- identify various security risks to a network and ways to minimize them
- understand the current trends in telecommunications and networking and the implications for businesses and organizations.
- Understand the basic concepts of information assurance and its implications in network economy
- Appreciate the principles of philanthropy, the values and benefits to the society
- Develop a grant proposal for wired and wireless networking for a non-profit organization
- Understand the process of grant proposal assessment and evaluation

PREREQUISITES

Basic knowledge of microcomputers

(It is assumed that students have a basic knowledge of the Internet and experience of basic network applications)

REQUIRED TEXTS AND OTHER MATERIALS

Text (Required)

Author: Palmer M.

Title: Hands-On Networking Essentials with Projects, 2006

Publisher: Course Technology ISBN: 0-4188-3554-4

Other Materials(required)

Blackboard class web site - <http://blackboard1.xu.edu>

COURSE POLICIES AND REQUIREMENTS

Attendance and participation: You are expected to attend each class meeting and laboratory sessions. Each **unexcused** absence will be recorded as a zero score for that day in the Attendance/Participation area. The interactive approach of the class requires your active participation and this will be reflected in the Attendance/Participation portion of the grade distribution. Class participation will involve required reading assignments, group case preparation, and introduction by students of current issues related to the chapter material. For any group activity, you must be present to receive the group grade. If you are absent you will receive a zero for that group activity.

Assignments, Quizzes and Exam: All assignments are due at the beginning of class on the due days (given in the course schedule). Unapproved late submission of assignments **will be not accepted**. Failure to turn in an assignment results in zero. Approved late submission will not be extended beyond 7 calendar days after the due date. There will be no make-up exam and quizzes. Alternative provision may be made for those who missed the exams and /or quizzes due to emergency and for those who has informed the instructor ahead of the time.

Academic Dishonesty: Unless otherwise specified (e.g., group projects or presentations), all assignments should be done individually. If you are caught using other student's work at any point in the exercises or any part of the course will result in an F for the course and additional discipline according to the policy of Xavier University.

TESTS, PRESENTATIONS AND EXAMS

- There will be two major quizzes at the dates to be announced
- There will be a Midterm and a Final exam based on the main reading textbook.
- There will be 12 lab exercises
- There will a group project/presentation

LABS

We will organize several laboratory sessions (as time permits) that will provide a hands-on introduction to some of the concepts discussed in the class. The lab sessions could also be used to try out the case assignments and exercises.

GRADING

Your final grade will be determined as listed below and explained further in a separate section of this syllabus. Each student is required to read the instructions for all assignments at the beginning of the course or when they are posted on blackboard. Any student who is unclear about any instruction should ask questions in class or see the professor immediately. You are expected to keep track of your own scores and class standing. You can also contact the instructor about the details of your scores before the final grading.

Grading Distribution

Assignments (see additional information in below section)	Grade %	Due Date	Scale			
Quizzes	10	See Class Schedule	A	95-100	C+	77-79
Lab Assignments/Exercises (Group)	25	See Class Schedule	A-	90-94	C	73-76
Examinations	30	See Class Schedule	B+	87-89	C-	70-72
Attendance/Participation	10		B	83-86	D	60-69
Group Project/Presentations	25		B-	80-82	F	Below 60
Philanthropy Program	Pass					
Total	100					

NOTE

We live in dynamic times. Your exposure to information technology in this course should strongly support this fact. Events may dictate that changes be made to what appears above and/or to the course schedule and assignments. Every attempt will be made to minimize any change, but I reserve the right to make changes if necessary. Advance notice will, of course, be given to the students. And, the current versions of the course Blackboard pages are to be taken as official. It is the student's responsibility to work with the current versions of these pages. It is the instructor's responsibility to keep the versions current.

Introduction (1% extra credit)

Individual assignment 1: Introduce yourself to the instructor by email. Be sure to include your work background, your major and minors, and also indicate your ability to build a web page. Otherwise, tell what you think he needs to know about you. **Due by Monday January 16, 2006.** See course syllabus for my email address.

Quizzes (10%)

The quizzes will cover the some of the chapters discussed before the quiz (see schedule). All the quizzes are close- book.

Lab Assignments/Exercises (Group)(25%)

There will be twelve lab assignments / exercises that are based on real-world networking scenarios. This requires access to computers running Windows Server 2003 (and/or Windows XP). Some of the assignments might also involve working with communications cable, hubs, test equipment and other networking components. The assignments can be submitted on the assignment sheet (provided by instructor), or on separate pages.

Attendance and Participation (10%)

Regular attendance is required for success in this class. Your participation will be determined by how well you respond to questions and by the extent of your contribution to all discussions. Any student who must miss class due to an unavoidable circumstance should see the professor in person as soon as possible.

Examinations (30%)

A midterm and final exam will be given covering the material in this book. Exams are expected to be completed within two hours. Each exam will be weighted the same. The final exam is not comprehensive.

Group Project/Presentations (25%)

The goal of this project is to create opportunity for you to study and report the telecommunications and networking systems of a real organization. You can use the organization where you work or choose another organization. You can contact me if you need any assistance in selecting the organization and about the scope of the project. The project includes preparation of a comprehensive 5-10 pages report (single-spaced, word-processed with one inch margins) and 10-15 minutes presentation of the summary of the report. You are also required to create a website for the project. The website should contain the personal information about each member of the group, the project proposal, the detailed report and the presentation slides. More detail will be provided in class.

Philanthropy Program

You are required as a member of a group to work with a non-profit organization (to be introduced to you) in preparing a proposal for a grant to design and implement a wired and or wireless network for their organization. The total amount of the grant available is \$4000. This can be awarded to one organization or shared among two or three as we deem fit. Every student is required to participate in every stages of the program - grant writing (in collaboration with organization), grant evaluation, award ceremony, and implementation of the wired/wireless

network at the grantee organization. Participation in the program does not attract any score but every student must successfully complete the program to pass the course. Your participation shall be evaluated through your attendance in the group meetings, visits to the organization, contributions to the evaluation criteria and class discussions, participation in the evaluation of the grant proposals and attendance at the award ceremony. You are also required to submit one page report on lessons learned and complete philanthropy program evaluation.

The report

The first part of the report should describe the details of the organization's network technology. This report should cover both hardware and software components of the network. The entire network layout should also be presented diagrammatically in the report. The report should specify the possible direction of growth of the network with the consideration to the recent changes in network technology e.g. how the wireless communication technology could change the current network? Could they extend the network with VLAN etc. The second part of the report should focus on the utilization of the network (e-commerce, Intranet etc) and the how it affects the operations of the organization. It should cover the network management policies and procedures in this organization and the access control and network security. All the problems you observe or that could arise with the network should be included in the report. The conclusion should include recommendation for improvement to the network and how it could be better utilized for organizational processes.

The proposal

Prepare a one page overview of the project that includes the names of group members and email address, organization name, name of contact at organization. The proposal is due for submission on February 20, 2006

Class Schedule (INFO 357 -73)

Wks	Date	Class Topics	Assignments/Readings	Remarks
1	Monday, January 09, 2006	Introduction to the class & Overview of Networking and Telecommunications	Chapter 2	
2	Monday, January 16, 2006	Holiday		
3	Monday, January 23, 2006	How LAN and WAN Communications Work/ Using Network Communications Protocols / LAB	Chapter 3 and 4	
4	Monday, January 30, 2006	Quiz 1 (Chapters 1-4) Progress Report 1 - Philanthropy program Report on first visit to the Organization	Chapters 5 and 6	Discussion of grant proposal evaluation criteria Case Project 1-4 due for submission
5	Monday, February 06, 2006	Connecting through a Cables Networks/ Connecting Through Wireless Network		
6	Monday, February 13, 2006	Grant proposal preparation - Visit to the organization		
7	Monday, February 20, 2006	Mid Semester Exam		Case Project 5-6 due for submission
8	Monday, February 27, 2006	Spring Break	Chapters 7/8	
9	Monday, March 06, 2006	Sharing Resources on a Network / LAB	Chapters 7/8	
10	Monday, March 13, 2006	Using a Server / LAB	Chapter 9	
11	Monday, March 20, 2006	Quiz 2 (Chapters 7 - 9) Progress Report 2 - Philanthropy program Status of application and lesson learnt		Case Project 7-9 due for submission
12	Monday, March 27, 2006	Understanding WAN Connection Choices (Visit to ISS Department)	Chapters 10 and 11	Due date for proposal submission
13	Monday, April 03, 2006	Basic Network Design / Securing Network	Chapter 12	Philanthropy program proposal assessment and selection of the winner(s)
14	Monday, April 10, 2006	Philanthropy program Final selection of the winner(s)		Case Project 10-12 due for submission
15	Monday, April 17, 2006	Maintaining and Troubleshooting your Network (Guest Presentation/LAB Session)		
16	Monday, April 24, 2006	Presentations		
17	Monday, May 01, 2006	Final Exam (Comprehensive - Labs and Concept)		