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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: Hailstone 2, Tue and Thurs (11:30am – 12:45pm), Spring 2009

INSTRUCTOR:

Name	Dr Adekunle Okunoye
Email:	okunoye@xavier.edu
Office Location:	Room 319 Hailstones Hall
Office Hours:	**Monday** 10:00am – 2:00pm
	Tuesday and Thursday 1:30am – 2:30pm
	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, computer forensics 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 organizations
- 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: Ciccarelli P. et al
Title: Networking Basics, 2008
Publisher: John Wiley and Sons Inc. ISBN: 978-0-470-11129-1

Author: Ciccarelli P. et al with Frank Miller
Title: Networking Basics Project Manual, 2008
Publisher: John Wiley and Sons Inc. ISBN: 978-0-470-12799-5

Note: The above two books are bundled specially for the course with ISBN $978 - 0 - 470 - 22106 - 8$ and titled Wiley Pathways Networking Basics Project Manual Set.

Other Materials(required)

Blackboard class web site - http://blackboard.xu.edu or through the Portal

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 (Using the Project Manual)
- 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
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 Tuesday January 20, 2009**. See course syllabus for my email address.

Quizzes (10%)
The quizzes will cover 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 details will be provided in class.

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 through modern networking technology 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 19, 2009

Tentative Class Schedule (INFO 357 -01)

Wks	Date	Class Topics	Assignments/Readings	Remarks
1	Tuesday, January 13, 2009	Introduction to the class & Overview of Networking and Telecommunications	Chapter 1	
	Thursday, January 15, 2009	Overview of Networking and Telecommunications	Chapter 2	
2	Tuesday, January 20, 2009	Network Standards and Models		
	Thursday, January 22, 2009	Network Standards and Models Labs (1 and 2)	Chapter 3 and 4	
3	Tuesday, January 27, 2009	Network Architecture and Topologies		
	Thursday, January 29, 2009	Network Architecture and Topologies	Prepare for Quiz 1 (Revise chapters 1-4)	Projects 1-2 due for submission
4	Tuesday, February 03, 2009	Quiz 1 (Chapters 1-4)		
	Thursday, February 05, 2009	Labs (3 and 4)	Chapters 5	
5	Tuesday, February 10, 2009	Network Media and devices		
	Thursday, February 12, 2009	Network Media and devices	Chapters 6/7	Projects 3-4 due for submission
6	Tuesday, February 17, 2009	Network Protocols and TCP/IP		
	Thursday, February 19, 2009	Network Protocols and TCP/IP		
7	Tuesday, February 24, 2009	Labs (5 and 6)		
	Thursday, February 26, 2009	Mid Semester Exam		
8	Tuesday, March 03, 2009	Spring Break		
	Thursday, March 05, 2009	Spring Break		
9	Tuesday, March 10, 2009	Labs (7)	Chapters 8	Projects 5-6 due for submission
	Thursday, March 12, 2009	Wireless, Remote and WAN		
10	Tuesday, March 17, 2009	Wireless, Remote and WAN	Chapter 9	Project 7 due for submission
	Thursday, March 19, 2009	Network Servers and Services Fundamentals		
11	Tuesday, March 24, 2009	Network Servers and Services Fundamentals		
	Thursday, March 26, 2009	Labs (8 and 9)	Prepare for Quiz 2 (Revise Chapters 5-9)	
12	Tuesday, March 31, 2009	Quiz 2 (Chapters 5 - 9)	Chapter 10	

	Thursday, April 02, 2009	**Labs (10)**		**Projects 8-9 due for submission**
13	**Tuesday, April 07, 2009**	**Wide Area and Enterprise Networking Services**		
	Thursday, April 09, 2009	**Easter Holiday**		
14	**Tuesday, April 14, 2009**	**Wide Area and Enterprise Networking Services Lab (11)**	**Chapter 11**	**Project 10 due for submission**
	Thursday, April 16, 2009	**Network Management and security**	**Chapter 12**	**Project 11 due for submission**
15	**Tuesday, April 21, 2009**	**Network Management and security**		
	Thursday, April 23, 2009	**Lab (12)**		
16	**Tuesday, April 28, 2009**	**Presentations**		
	Thursday, April 30, 2009	**Presentations**		**Project 12 due for submission**
17	**Tuesday, May 05, 2009**	**Final Exam (Comprehensive - Labs and Concepts)**		