



Course Syllabus

MIS 6316.003

Data Communications

The University of Texas at Dallas

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Course Information

Course Number Section	MIS 6316.003
Course Title	Data Communications
Term and Dates	Fall 2016 (Aug 27, 2016 – Dec 3, 2016)
Location	UT Dallas - Main Campus
Timing:	Saturdays 10:00am - 12:45pm JSOM 1.107

Professor Contact Information

Professor	Dr. Raed Omar Sbeit
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Office Hours	By appointment
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Office Hours	By appointment

Course Pre-requisites, Co-requisites, and/or Other Restrictions

There are no pre-requisites for this class. Some basic knowledge of arithmetic and logarithms is expected.

Course Description

Advances in networking and communication technologies have made the network inseparable from the computers it links together. Information Systems managers need to have an in-depth understanding of a multitude of issues related to data communications ranging from the technical to the managerial in order to make educated decisions regarding them. This course is an introduction to the basic concepts underlying voice/data communications, local area networks, wide area networks, and the Internet. It is intended to make you aware of various data communications technologies, and to enable you to make informed decisions regarding them.

Student Learning Objectives/Outcomes

Module I: FUNDAMENTALS OF COMMUNICATIONS

- ❖ **Introduction to Data Communications**
 - ❖ Describe the layers of the important network models
 - ❖ Explain the need for standards, and the process of standardization
- ❖ **Data Communication Fundamentals**
 - ❖ Describe the fundamentals of transmission, including the types of signaling and transmission, signal impairments.
 - ❖ Calculate channel capacity in noiseless and noisy channels.
 - ❖ Describe and classify different types of transmission media and describe wireless transmission and propagation.
- ❖ **Data Communication Transmission**
 - ❖ Identify and describe different types of signal encoding schemes.
 - ❖ Explain different processes of transmission, error detection, and flow control.
 - ❖ Analyze the efficiency of transmission.
- ❖ **Guest Seminar: Mobile Broadband**
 - ❖ Describing LTE Advanced solutions
 - ❖ Bridging the Gaps for Successful Deployment and Implementation

Module II: SWITCHING & NETWORKING

- ❖ **Network Switching and Transport Layers**
 - ❖ Explain various forms of multiplexing and switching.
 - ❖ Analyze the effect of packet size on transmission time.
 - ❖ Describe and analyze routing in circuit and packet switched networks.
 - ❖ Identify least cost routes using Dijkstra's algorithm.
- ❖ **Wired and Wireless Local Area Networks**
 - ❖ Describe and classify LANS.
 - ❖ Describe LAN components.
 - ❖ Explain the functioning of various types of technologies related to LANs.
- ❖ **Mobile Technology**
 - ❖ Describe various cellular concepts and technologies.
- ❖ **Guest Seminar: Mobility**

Module III: SECURITY

- ❖ **Network Security**
 - ❖ Describe various threats, and the major requirements to ensure security.
 - ❖ Describe and analyze symmetric and public-key encryption schemes, and related operations.
- ❖ **Guest Seminar: Cyber Security**
 - ❖ Describing Trusted Platform Module (TPM) Security
 - ❖ How to detect and prevent cyber attacks

Required Textbooks and Materials

Required Texts

- ❖ **Business Data Communications by W. Stallings and T. Case, 7th Ed 2012, Prentice Hall, ISBN-10: 0133023893; ISBN-13: 9780133023893.**
- ❖ **Business Data Networks & Security by R. Panko & J. Panko, 10th Ed 2015, Pearson, ISBN-10: 0133546993; ISBN-13: 9780133546996.**

Textbooks can be ordered online through Off-Campus Books or the UTD Bookstore. They are also available in stock at both bookstores.

Course Policies

Make-up exams

Make-ups (tests, quizzes or homework) will not be allowed without prior permission. In general, there will be no make-ups except for extenuating circumstances.

Extra Credit

There will be no work available for extra-credit.

Late Work

Late submissions will not be accepted without prior permission.

Class Participation

Students are required to login regularly to the online class site. The instructor will use the tracking feature in eLearning to monitor student activity. Students are also required to participate in all class activities such as discussion board, chat or conference sessions and group projects.

There will be 10 grades for Classroom participation.

Virtual Classroom Citizenship

The same guidelines that apply to traditional classes should be observed in the virtual classroom environment. Please use proper netiquette when interacting with class members and the professor.

Policy on Server Unavailability or Other Technical Difficulties

The university is committed to providing a reliable online course system to all users. However, in the event of any unexpected server outage or any unusual technical difficulty which prevents students from completing a time sensitive assessment activity, the instructor will extend the time windows and provide an appropriate accommodation based on the situation. Students should immediately report any problems to the instructor and also contact the UTD eLearning Help Desk:

<http://www.utdallas.edu/elearninghelp> / 1-866-588-3192.

The instructor and the UTD eLearning Help Desk will work with the student to resolve any issues at the earliest possible time.

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Technical Requirements

In addition to a confident level of computer and Internet literacy, certain minimum technical requirements must be met to enable a successful learning experience. Please review the important [technical requirements](#) on the [Getting Started with eLearning webpage](#).

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Course Access and Navigation

This course was developed using a web course tool called eLearning. It is to be delivered entirely online. Students will use their UTD NetID account to login at: <http://elearning.utdallas.edu>

Please see more details on [course access and navigation information](#).

To get familiar with the eLearning tool, please see the [Student eLearning Tutorials](#).

UTD provides eLearning technical support 24 hours a day/7 days a week. The services include a toll free telephone number for immediate assistance (1-866-588-3192), email request service, and an online chat service. Please use this link to access the UTD eLearning Support Center:

<http://www.utdallas.edu/elearninghelp>

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Communications

This eLearning course has built-in communication tools which will be used for interaction and communication. Some external communication tools such as regular email and a web conferencing tool may also be used during the semester. For more details, please visit the [eLearning Tutorials webpage](#) for video demonstrations on numerous tools in eLearning.

Interaction with Instructor

The instructor will communicate with students mainly using the Announcements and Discussions tools. Students may send personal concerns or questions to the instructor using the course email tool. The instructor will reply to student emails or Discussion board messages within 3 working days under normal circumstances, particularly if there has not been a resolution to a query from other students (which is encouraged).

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Student Resources

The following university resources are available to students:

UTD Distance Learning:

<http://www.utdallas.edu/elearning/students/cstudents.htm>

McDermott Library:

Distance Learners (UTD students who live outside the boundaries of Collin, Dallas, Denton, Rockwall, or Tarrant counties) will need a UTD-ID number to access all of the library's electronic resources (reserves, journal articles, ebooks, interlibrary loan) from off campus. For UTD students living within those counties who are taking online courses, a Comet Card is required to check out materials at the McDermott Library. For more information on library resources go to

<http://www.utdallas.edu/library/distlearn/disted.htm>

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Student Assessments

Grading Information

There are one Midterm , on Individual Paper assignment and a final Group Term paper. The weights on these are:

Midterm	30%
Individual Paper	30%
Team Term Paper	30%
Participation	10%
Total	100%

Grading Scale

Overall Course Total	Grade
92 – 100	A
89 – 91.9	A-
86 – 88.9	B+
82 – 85.9	B
79 – 81.9	B-
75 – 78.9	C+
68 – 74.9	C
0 – 67.9	F

At the end of the semester, I may adjust the final cut-offs appropriately based on the degree of difficulty of the graded material. **Useful comments and discussions posted on the discussion board will play a role in assessing these cutoffs, so, class participation could help improve your grade.**

Accessing Grades

Students can check their grades by clicking “My Grades” under Course Tools after the grade for each assessment task is released.

Assignments

There will be **no** homework assignments in this course. Great emphasis on class participation and team work on your papers.

Group Term Paper

30% of the final grade will be determined by your performance on a term paper. Term papers can be undertaken in **groups of up to 7-9** students. The objective of the term paper is to provide you with the opportunity to investigate relatively cutting edge topics that are of interest to you, and that are otherwise beyond the scope of an introductory course. Consequently, the topic for the paper is quite flexible (of course, it has to involve some form of new technology related to data communications). Examples of topics considered by past students include Voice over IP, 4G (wireless), Online Gaming, and RFID, to name a few (some of these are not “new” any more).

A 1-page proposal is due on or before **September 17, 2016** and must be approved by the instructor; **failure to submit a proposal by this date will result in a grade of zero for the paper.** Topics will be approved on a first-come-first-served basis, and no two groups can work on the same topic. The **final paper is due on or before Nov 19, 2016.** The submitted document should be 10-12 (double spaced) pages in length, in 12-point font, on letter-size paper with 1-inch margins. It should include a minimum of five appropriate references and citations (while it might be useful, Wikipedia is not considered an

appropriate research source). A professional paper in terms of style and mechanics (spelling, etc.) is expected. The grade for the project will be determined primarily on the ideas put forward in the paper, the evidence and logical thought provided to support these ideas, the organization of the write-up, and on the presentation itself. In addition, your grade will be affected by how your group members evaluate your contribution.

Students are expected to form groups by themselves using the group signup sheet. Once the groups have been formed, group members can use the available group tools under their own group area in the course to communicate and collaborate within the group.

A web conference system is available for use. Teams can schedule a live web conference for team work. Please see the Web Conferencing page for instructions on making a reservation and [other web conference information](#).

Assignment submission instructions

Locate the assignment in your eLearning course. You will submit your assignments in the required file format with a simple file name and a file extension. To submit your assignment, click on the assignment name link and follow the on-screen instructions to upload and submit your file(s). For additional information on how to submit assignments, view the [Submitting An Assignment video tutorial](#).

Please Note: Each assignment link will be deactivated after the assignment due time. After your submission is graded, you may go to My Grades on the course menu and click the score link to check the results and feedback. For any team project assignments, one group member will submit the assignment for the group and all group members will be able to view the results and feedback once it's been graded.

Turnitin eLearning Assignment Submission Instructions

The final Term Paper will be submitted and examined through the integrated plagiarism detection tool called [Turnitin](#). Please find the Turnitin assignment submission link on the designated course page and click to view it. Please follow the on-screen instruction to view the assignment information and to submit your assignment. (Note: only one single file may be submitted. Some common file types accepted are: Word, HTML, PDF, TXT and RTF.) You can go back to the Turnitin assignment page to view your submission and check the feedback when it becomes available. If instructor choose to release the Originality Report (showing the percentage of similarity match and the sources detected), you will also be able to view it. For more information and assistance on using Turnitin, please go to:

http://www.turnitin.com/en_us/support/help-center.

Participation/Discussions

Class participation is encouraged via the various tools described earlier. As pointed out earlier, useful comments and discussions posted on the discussion board will play a role in assessing the cutoffs in the case of a curve. So, class participation could help improve your grade,.

Online Midterm Exam

There will be one online midterm examination, worth 30% of the final grade. You can access this exam by clicking the Self-Tests and Exam link on the course menu or see the quiz/exam link on the designated page

You can access the exam by clicking the exam link on the designated page. The exam is timed, and you are allowed only one attempt. You will have one week to attempt the exam. Please read the on-screen instructions carefully before you click "Begin". After the exam is graded and released, you may go to My Grades page, click the quiz and the score link of the quiz to view your graded submission.

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Academic Calendar

DATES	TOPIC/LECTURE	READING/LECTURE	ASSIGNMENTS
Aug 20, 2016	Course Access; Self-Orientation		
MODULE I : FUNDAMENTALS OF COMMUNICATIONS			
Aug 27, 2016	Introduction to Data Communications	Chapters 1 – 3 (BDC)	
Sept 10, 2016	Data Communication Fundamentals	Chapters 4 – 5 (BDC)	
Individual Term Paper & Team Term Paper Proposals Due- Sept 17-No Class			
Sept 24, 2016	Individual Paper Proposals Presentations		
Oct 1, 2016	Introduction to Cloud & Mobile Technology	Chapters 1(BDNS) Chapter 17 (BDC)	
ONLINE MIDTERM EXAMINATION : Oct 8, 2016 (Take Home - no Class)			
Module II: SWITCHING & NETWORKING			
Oct 15, 2016	Team Paper Proposals		
Oct 22, 2016	Network Switching and Transport Layers	Chapters 12–13(BDC) Chapters 5 – 6(BDNS)	
Oct 29, 2016	Wired and Wireless Local Area Networks	Chapters 14–16(BDC) Chapters 7 - 9(BDNS)	Individual Term Paper due
Individual TERM PAPER Presentations: Nov 5, 2016			
Module III: SECURITY			
Nov 12, 2016	Network Security	Chapters 18–19(BDC)	Team Term Paper due
FINAL Team TERM PAPER Presentations: Nov 19, 2016			
Dec 3, 2016	Guest Seminar: Cyber Security	Chapters 20-21(BDC)	

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Scholastic Honesty

The University has policies and discipline procedures regarding scholastic dishonesty. Detailed information is available on the [UTD Judicial Affairs](#) web page. All students are expected to maintain a high level of responsibility with respect to academic honesty. Students who violate University rules on scholastic dishonesty are subject to disciplinary penalties, including the possibility of failure in the course and/or dismissal from the University. Since such dishonesty harms the individual, all students and the integrity of the University, policies on scholastic dishonesty will be strictly enforced.

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Course Evaluation

As required by UTD academic regulations, every student must complete an evaluation for each enrolled course at the end of the semester. Please watch for the email notification at your UTD email inbox with course evaluation access information towards the end of semester.

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University Policies

The information contained in the following link constitutes the University's policies and procedures segment of the course syllabus.

Please go to [http://go.utdallas.edu/syllabus-policies for these policies](http://go.utdallas.edu/syllabus-policies-for-these-policies).

These descriptions and timelines are subject to change at the discretion of the professor.

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