

C.T.Bauer College of Business, University of Houston

MIS 7397 Network and Infrastructure Security

SEMESTER COURSE OFFERED: Summer 2024

DEPARTMENT: MIS (Management Info. Systems)

COURSE NUMBER: MIS 7397 - 15006

NAME OF COURSE: Network & Security Infrastructure

NAME OF INSTRUCTOR: Hina Khan hkhan@central.uh.edu

Textbook: Jerry FitzGerald, Alan Dennis, Alexandra Durcikova [Business Data Communications and Networking, 14th edition, Wiley](#)

COURSE DESCRIPTION:

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 to make educated decisions regarding them. This course will give you sufficient technical and management level knowledge of the various types of computer networks and security issues in a corporate environment. You will learn the theory, design, engineering, and installation of networks to connect digital computers.

This course will provide a high-level understanding of how information security functions in an organization. Understanding external and internal threats to an organization. To be familiar with information security awareness and a clear understanding of its importance,

Areas covered will include network hardware, topologies, protocols, VoIP, data communications, virtualizing platforms, the Internet, security threat mitigation, and the application and management of these items.

LECTURES:

Attendance AND participation is VERY IMPORTANT to your grade. Participation will impact your grade significantly. There is a book for this class, but it is not mandatory. I highly recommend the e-Book version (see above). We will cover many items in the book, but the technologies and methodologies have changed and evolved so much that the text has not kept up. We will make extensive use of WiKi's and other external sources as well as current events in the news. If you are a good researcher, then you probably do not need the book. Notes for each

lecture along with slide presentations will be made available online, typically prior to the lecture. Please let me know if you have any ADA requirements.

LABS:

This is a hands-on class. The best way to learn about networking and security is to experience it first hand. You must be enrolled in the lab this course to get credit for the class. The labs will be taken in Melcher Hall 272 and EiLab MH 122. Your Cougar card should already be activated for entry. Please do not alter or use any equipment in the lab until after our first lab meeting, after you have become familiarized with the equipment.

ASSIGNMENTS:

Assignments will be posted in Canvas. Students are expected to turn in professionally written and easy to follow documents that is clear and concise which meets the objectives of the assignment.

Group projects will require ALL students in the group to contribute to the assignment.

Please refer to emails sent during the semester for changes. You will also be graded in-lab projects.

There are possible points awarded for attendance, participation, and optional projects/assignment.

EXAMS:

You will have 1 major test and 1 final exam drawn from materials in the text and from notes. We will review in the class prior to an exam Exams are administered via Canvas.

CHANGES:

I will email the class when changes are made.

GRADING:

I will attempt to post grades in a timely manner. Calculated percentages correlate to the following letter grades:

A=92.5-100, A-=89.5-92.4, B+=87.5-89.4, B=82.5-87.4, B-=79.5-82.4, C+=77.5-79.4, C=72.5-77.4, C-=69.5-72.4, D+=67.5-69.4, D=62.5-67.4, D-=59.5-62.4, F=<59.4

EXAMS/ASSIGNMENTS	% Of GRADE
Participation (Create a VM, Cable making, in-lab walk-thru, Wireshark, Create a VM on Azure)	30
Exam 1	25
Assignments	15
Final Exam	30

Syllabus:

SCHEDULE (UH Academic Calendar)

Weekly learning objectives: Lesson 0: Introduction, Expectations, and Policies Introduction to Course: Why study Networks?
Chapter 1: Introduction to Data Communications
Chapter 2: Application Layer
Chapter 3: Physical Layer
Lab Day- Create a VM
Lab Day - Cont.
Chapter 4: Chapter 3: Physical Layer (cont.)
Chapter 5: Data Link Layer

Chapter 5: Network and Transport Layers

Chapter 5: Network and Transport Layers (cont.)

Lab - Cable Making

Chapter 6: Network Design

Chapter 6: Network Design (cont.)

Chapter 7: Wired and Wireless LANS

Chapter 7: Wired and Wireless LANS (cont.)

Chapter 8: Backbone Networks

Chapter 9: Wide Area Networks

Subnetting

Chapter 10: The Internet

Chapter 10: The Internet (cont.)

Chapter 11: Network Security

Chapter 11: Network Security (cont.)

Chapter 12: Network Management

Chapter 12: Network Management (cont.)

Getting Started with Azure

Lab- Create a VM on Azure

Last Day of Class

Final Exam

[University Final Exam Schedule](#)