

Sul Ross State University

Spring 2017

CS 3310 Computer Communications

Instructor: Thea Glenn
M.S. Management Information Systems

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Office Hours: 9am – 1pm

Class: BAB-303

Class Time: TR 2 – 3:15

Textbook: Solomon, M., Kim, D., Carrell, J. (2015). *Networks: Fundamentals of communications and networking (2nd ed.)*. Burlington, MA: Jones & Bartlett Learning. ISBN-10: [1133626467](https://www.amazon.com/dp/1133626467) ISBN-13: [9781133626466](https://www.amazon.com/dp/9781133626466)

Course Objectives

Course covers network systems, topology, media, the theoretical network, real-world networks, and configuration of networks. Prerequisite: CS 1320
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Specific topic coverage includes the following (time permitting):

<ul style="list-style-type: none">• Introduction to Computer Networks and Data Communications• Fundamentals of Data and Signals• The Media: Conducted and Wireless• Making Connections• Making Connections Efficient: Multiplexing and Compression• Errors, Error Detection, and Error Control• Local Area Networks – The Basics	<ul style="list-style-type: none">• Local Area Networks – Part II• Introduction to Metropolitan Area Networks and Wide Area Networks• The Internet• Voice and Data Delivery Networks• Network Security• Network Design and Management
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Attendance

Attendance is different for an independent study. We will meet every so often so that I will make sure you understand the material and answer any questions you have. Please email me your questions. That way I will answer your question as clearly as possible.

Need for Assistance

Qualified students with disabilities needing academic or other accommodations to ensure full participation in the programs, services and activities at Sul Ross State University should

contact the Disabilities Services Coordinator, in Counseling and Prevention Services, Ferguson Hall 112, Box C-117, Alpine, Texas 79832. Please notify me before the third day of classes.

Course Policies

Quizzes and assignments must be submitted on time. I have set up rules in Blackboard so that assignments cannot be submitted after the due date.

Academic Dishonesty: Honesty in completing assignments is essential to the mission of the university and to the development of the personal integrity of the student. Cheating, plagiarism (also means taking information off line and using it as your own content), or other kinds of academic dishonesty will not be tolerated and will result in appropriate sanctions that may include failing an assignment, failing the class, or being suspended or expelled.

Suspected cases in this course may be reported to Student Life. Please note that information online is not free even though there is public access to the information. When using online resources you must properly cite your reference in the paper as well as on the reference page.

Posting of Grades

Grades are on display in blackboard. Submitting assignments and test are done in blackboard. **Do not** email assignments or test to me everything is to be put into blackboard.

Grading

Letter grades will be determined using a standard percentage point evaluation as outlined below. Please note that this is a tentative schedule and can change. Any changes that happen will be updated in Blackboard. Due Dates for assignments will also be posted in Blackboard.

Your final grade will be determined by calculating points based on the following weights:

- A 90 - 100 points
- B 80 - 89 points
- C 70 – 79 points
- D 60 – 69 points
- F below 60 points

The table following is a tentative schedule of the planned assignments.

Grading Category	Activity Title	Grade Allocation (% of all graded work)
Lesson 1: Today's Personal and Business Communication Requirements		
Required Readings	▪ Chapter 1, "Today's Personal and Business Communication Requirements"	0
Discussion	Internet Strategies for E-Commerce Businesses	1
Assignment	Unified Communications	2
Lesson 2: Solving Today's Business Communication Challenges		
Required Readings	▪ Chapter 2, "Solving Today's Business Communication Challenges"	0
Assignment	Solving Business Enterprise Communication Challenges	1

Assignment	Working with the Government	2
Lesson 3: Circuit-Switched, Packet-Switched, and IP-Based Communications		
Required Readings	▪ Chapter 3, "Circuit-Switched, Packet-Switched, and IP-Based Communications"	0
Discussion	Circuit Switching Versus Packet Switching	1
Assignment	Evolution of Networking Topologies	2
Lesson 4: The Evolution of Ethernet		
Required Readings	▪ Chapter 4, "The Evolution of Ethernet"	0
Project Checkpoint 1	Business entity selection and communications methods	0
Assignment	The Evolution of Ethernet	1
Assignment	Ethernet Network Designs	2
Lesson 5: TCP/IP and Networking		
Required Readings	▪ Chapter 5, "TCP/IP and Networking"	0
Discussion	TCP/IP and Networking	1
Assignment	Transitioning from IPv4 Addressing to IPv6 Addressing	2
Lesson 6: Layer 2 Networking		
Required Readings	▪ Chapter 6, "Layer 2 Networking"	0
Assignment	Types of Backbones	1
Assignment	Physical Media Design	2
Lesson 7: Layer 2 Networking VLANs		
Required Readings	▪ Chapter 7, "Layer 2 Networking VLANs"	0
Discussion	Collision Domains Versus Broadcast Domains	1
Assignment	Cisco's Layer 2 Resiliency Compared to HP's IRF Layer 2 Resiliency	2
Project Checkpoint 2	IEEE standards networking design and protocols, choice of IPv4 or IPv6 and addressing schema identified	0
Lesson 8: Layer 3 Networking		
Required Readings	▪ Chapter 8, "Layer 3 Networking"	0
Assignment	Routing Protocol Resilience	1
Assignment	Distance-Vector Routing Protocols	2
Lesson 9: Wireless LAN Standards		
Required Readings	▪ Chapter 9, "Wireless LAN Standards"	0
Discussion	Wireless LAN Standards	1
Assignment	A WLAN Solution	2
Lesson 10: Voice over Internet Protocol (VoIP)		
Required Readings	▪ Chapter 10, "Voice over Internet Protocol (VoIP)"	0
Discussion	Advantages and Disadvantages of VoIP	1
Assignment	VoIP Considerations	2
Lesson 11: Unified Communications and Session Initiation Protocol		
Required Readings	▪ Chapter 11, "Unified Communications and Session Initiation Protocol"	0
Assignment	SIP-Enabled Applications	1
Assignment	UC Product Offerings	2
Project Checkpoint 3	Departmental VLANs identified and designed, Layer 3 routing design, and wireless standards and design	0
Lesson 12: Fault Management and the Network Operations Center		
Required Readings	▪ Chapter 12, "Fault Management and the Network Operations Center"	0

Assignment	Fault Management Best Practices	1
Assignment	Network Operations Center	2
Lesson 13: Configuration Management and Asset Control		
Required Readings	▪ Chapter 13, "Configuration Management and Asset Control"	0
Discussion	SLA Metrics	1
Assignment	Business Continuity and Disaster Recovery Plans	2
Lesson 14: Performance Management		
Required Readings	▪ Chapter 14, "Performance Management"	0
Assignment	Factors that Affect Performance	1
Assignment	Performance Measuring Tools	2
Project	Project: Network Design Proposal Report	15
Lesson 15: Security Management		
Required Readings	▪ Chapter 15, "Security Management"	0
Discussion	Security Management	1
Assignment	Risk Assessment and Risk Management	2
Project	Project: Network Design Proposal Presentation	5
Lesson 16: Course Review and Final Examination		
Exam	Final Examination	15