

MIDSTATE COLLEGE
411 W. NORTHMOOR RD., PEORIA, IL 61614
(309) 692-4092 (800) 251-4299
Spring 2018

Course number & Name: CIS 318 - Advanced Network Communications

Credit hours: 4 Quarter Hours

Method of Delivery: Classroom/eLearning Component

Course Description: This course is a study of Data Communications covers theories, designs, and technologies utilized in current data communication networks. The students will study the functions, performance, capacity, and management of multiple network architectures including network security management.

Prerequisite: CIS 218-Network Communications

Text(s) & Manual(s): Data Communications & Computer Networks, 6th Ed.

Author(s): Curt M. White

Publisher: Course Technology Incorporated, 2011 ISBN-13: 978-0-538-45261-8

Materials needed for this course:

Additional Supplies: None

Hardware/Software and Equipment: Provided

Topics: Fundamentals of data and signals, media, connections, LAN, MAN, and WAN

Learning Objectives: Upon completion of this course, the student will be able to:

1. Outline the basics components of a computer network using both the TCP/IP protocol suite and the OSI model.
2. Identify the various types of network systems, including local area networks, metropolitan area networks, wide area networks, and voice/data delivery networks.
3. Enumerate the various transmission media commonly used in carrier systems, i.e. twisted pair, coaxial cable, fiber optic cable, terrestrial microwave, satellite, as well as other wireless technologies.
4. Recognize the basics of data communications, including data, signals, conversions between data and signals, encoding techniques, multiplexing, and modulation.
5. Identify the various types of error detection and error corrections schemes.
6. Identify the basics of T-carrier systems, frame relay, asynchronous transfer mode, DSL, and cable modems, and be able to compare and contrast their characteristics.
7. Describe the basic operating procedures of the Internet and how it relates to data and voice communications.
8. Document the characteristics of local area networks, including hub and switch technologies.
9. Recognize and describe the basic components of network security.

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10. Document the characteristics of local area networks related to design and management.

Midstate Grading scale:

90 - 100 A
80 - 89 B
70 - 79 C
60 - 69 D
0 - 59 F

Midstate Plagiarism Policy:

Plagiarism is using another person's words, either by paraphrase or direct quotation, without giving credit to the author(s). Plagiarism can also consist of cutting and pasting material from electronic sources by submitting all or a portion of work for assignment credit. This includes papers, computer programs, music, sculptures, paintings, photographs, etc. authored by another person without explicitly citing the original source(s). These actions violate the trust and honesty expected in academic work. Plagiarism is strictly against the academic policy of Midstate College. Its seriousness requires a measured, forceful response which includes consequences for inappropriate and/or no citation.

In courses containing writing assignments, the College promotes the use of an electronic resource which compares the student's writing against previously submitted papers, journals, periodicals, books, and web pages. Students and instructors can use this service to reduce the incidence of plagiarism. This electronic resource has been found to conform to legal requirements for fair use and student confidentiality. It is able to provide a report to the student indicating the parts of the assignment that match.

Student Success: The Office of Student Success is available to students seeking tutoring for individual classes or who need assistance with writing assignments. Information is also available on test taking techniques, how to take notes, developing good study skills, etc. Contact Student Success in Room 218 (in person); (309) 692-4092, extension 2180 (phone); studentsuccess@midstate.edu (email).

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Instructor: Greg Ballard

Room: 122

Midstate email: gaballard@midstate.edu

Phone: (800) 251-4299 x1220

Office Hours: Wednesdays 5:00 p.m. – 6:00 p.m. or By Appointment (student arranges)

Participation Requirements:

- Reading the class textbook and any other materials assigned by the instructor, including journals, magazines, white papers, and Internet materials. Chapter materials covered during class should be read BEFORE the start of class.
- Participating in oral presentations and classroom discussions
- Participating in lab exercises
- Completing all assignments and quizzes/exams

Policies & Procedures:

- 1) Assignments: Homework is due at the beginning of the class period. All homework is to be turned in with your name, date, and the name of the assignment at the top. No makeup work is accepted during finals week.
 - a) Penalties for turning in late assignments without prior approval from the instructor: (ALL homework is due the following week)
 - One Week Late = 10%
 - Two Weeks Late = 25%
 - Three or More Weeks Late = 50%
- 2) Exams: Must be taken on the dates scheduled by the instructor. Failure to take an exam on the scheduled date will result in a grade of “F” (0 points). Make-up exams must be taken in the testing center. It is the student’s obligation to make the appropriate arrangements to have a test administered.
- 3) Attendance: Regular attendance is expected. It is the student’s responsibility to notify the instructor when a class will be missed. If you know of a conflict ahead of time, you are welcome to submit projects early. If you find that an absence is unavoidable, contact the Midstate Office at 692-4092 and leave a message or email me at the address above. If I do not receive a call or email before the missed class period, you will be considered unexcused and no make-up will be allowed for that day. Lab work must be completed in class on furnished equipment. Make-up lab work can be scheduled with the instructor if an absence is unavoidable. Lab work may be scheduled during any class.
- 4) Low Attendance: (From the student handbook)

“Attendance in the first two weeks is critical to successful completion of any course. Therefore, if a student misses any class in weeks 1-2 of the quarter, they will be marked as a student in jeopardy.”

I will turn in attendance WEEKLY to the main office.

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- 5) The instructor expects the student to let him know if they are having any problems within the class and related Chapters. The instructor is here to answer the student's questions and assist them. If the student does not understand what is covered in class and courseware, **PLEASE** let the instructor know.
- 6) **Academic Dishonesty**: Plagiarism and cheating are serious offenses and may be punished by failure on exam, paper, or project; failure in course; and/or expulsion from the college. For more information refer to the "Academic Dishonesty" policy in the student handbook.
- 7) **Grades**: It is the students' responsibility to keep copies of all assignments turned in for a letter grade until the end of the quarter when a final grade has been earned. If a document is lost and no copy is available, the student will not receive credit.
- 8) **Behavior**: Cell phones / pagers are prohibited from use in this course. Also, do NOT use email/messenger programs during class. This is not only rude to your instructor, but also distracts you and others around you from the learning experience.
- 9) **Student Responsibility**: The following are the student's responsibilities:
 - Reading the class textbook and any other materials assigned by the instructor, including journals, magazines, white papers, and Internet materials. Chapter materials covered during class should be read BEFORE the start of class.
 - Participating in oral presentations and classroom discussions
 - Participating in lab exercises
 - Completing all assignments and quizzes/exams
 - Keep your lab journal up-to-date. This should be at least one (1) paragraph documenting your experience with the lab, such as, any problems you experienced, specific things that you learned, and any other thoughts that come to you as the result of the lab assignment. Lab assignments and your lab journal make up 25% of your grade.

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Examination Information:

The quizzes and exams will be a combination of fill-in-the-blank, true/false, multiple-choice and matching questions. A hands-on practicum may be utilized where appropriate. Quizzes will focus mostly on recently covered material, however earlier material will still be included at some points to ensure foundation concepts are fully understood. The midterm will be comprehensive and cover all chapters covered in class to that date. The final will be comprehensive and will cover all chapters covered since the midterm.

Methods of evaluating student performance:

These percentages are approximate values

• Homework Assignments	(100 pts.)	33%
• Exams	<u>(200 pts.)</u>	<u>67%</u>
• Total:	350 pts.	100%

Instructor's Grading Scale: See Midstate grading scale

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TENTATIVE COURSE SCHEDULE

Week	Chapter(s)	Objective(s)	Topic(s)	Assignment Due
1	1	1	Intro to Computer Networks and Data Communications	N/A
2	2	4	Fundamentals of Data and Signaling, Conducted and Wireless Media	Ch. 2
3	3	2	Making Connections	Ch. 3
4	4	3	Making Connections Efficient	Ch. 4
5	5,6	4,5	Errors, Error Detection and Error Control	Ch. 5,6
6	7	8	Midterm Exam Local Area Networks: The Basics	N/A
7	8	2	Local Area Networks, Software and Support Systems	Ch. 7,8
8	9	2	Introduction to MANs and WANs	Ch. 9
9	10,11	7,6	The Internet, Voice and Data Delivery Networks	Ch. 10,11
10	12	9	Network Security	Ch. 12
11	13	10	Network Design and Management	Ch. 13
12	Final Exam			