

ESSEX COUNTY COLLEGE
Engineering Technologies and Computer Sciences Division
CIS 215 – Data Communication
Course Outline

Course Number & Name: CIS 215 Data Communication

Credit Hours: 3.0 **Contact Hours:** 3.0 **Lecture:** 3.0 **Lab:** N/A **Other:** N/A

Prerequisites: Grade of "C" or better in CIS 212 or permission of the instructor

Co-requisites: None

Concurrent Courses: None

Course Outline Revision Date: Spring 2023

Course Description: This course is designed to develop an understanding of current data communications technology as it applies to information systems. Topics covered include basic concepts and terminology as it relates to data communications and networks, with particular emphasis on local area networks. Students are required to design PC network hardware configurations based upon selected case studies.

Course Goals: Upon successful completion of this course, students should be able to do the following:

1. define and explain basic concepts and terminology associated with data communications and networks;
2. explain how data communications technology is implemented on local area networks (LANs); and
3. design PC network hardware configurations based on selected case studies.

Measurable Course Performance Objectives (MPOs): Upon successful completion of this course, students should specifically be able to do the following:

1. Define and explain basic concepts and terminology associated with data communications and networks:
 - 1.1 *Identify basic concepts associated with data communications and networks;*
 - 1.2 *Define terminology used in data communications and networks; and*
 - 1.3 *use data communication and network concepts and terminology to describing data communications in a LAN environment*
2. Explain how data communications technology is implemented on local area networks (LANs):
 - 2.1 *explain how data communications technology is implemented on LANs; and*
 - 2.2 *simulate LAN problem solutions*

Measurable Course Performance Objectives (MPOs) (continued):

3. Design PC network hardware configurations based on selected case studies:

- 3.1 *document network hardware configurations based on case studies; and*
- 3.2 *design network hardware configurations based on case studies*

Methods of Instruction: Instruction will consist of lectures and laboratory assignments.

Outcomes Assessment: Test and exam questions and projects are designed to assess basic knowledge of terms and concepts, the ability to use the concepts in written communication, and the ability to use the concepts in designing solutions to selected case studies. Test and exam questions are blueprinted to course objectives. Checklist rubrics are used to evaluate the projects for the presence of course objectives. Data is collected and analyzed to determine the level of student performance on these assessment instruments in regards to meeting course objectives. The results of this data analysis are used to guide necessary pedagogical and/or curricular revisions.

Course Requirements: All students are required to:

1. Maintain regular attendance and take part in class discussions.
2. Complete reading assignments, assigned homework and projects on time.
3. Take all tests and exams as scheduled.

Methods of Evaluation: Final course grades will be computed as follows:

Grading Components	% of final course grade
• Class participation	5%
• Homework and quizzes	35%
• 3 or more Tests (dates specified by the instructor)	25%
• Projects/MidTerm	10%
• Final Exam	25%

Academic Integrity: Dishonesty disrupts the search for truth that is inherent in the learning process and so devalues the purpose and the mission of the College. Academic dishonesty includes, but is not limited to, the following:

- plagiarism – the failure to acknowledge another writer’s words or ideas or to give proper credit to sources of information;
- cheating – knowingly obtaining or giving unauthorized information on any test/exam or any other academic assignment;
- interference – any interruption of the academic process that prevents others from the proper engagement in learning or teaching; and
- fraud – any act or instance of willful deceit or trickery.

Violations of academic integrity will be dealt with by imposing appropriate sanctions. Sanctions for acts of academic dishonesty could include the resubmission of an assignment, failure of the test/exam, failure in the course, probation, suspension from the College, and even expulsion from the College.

Student Code of Conduct: All students are expected to conduct themselves as responsible and considerate adults who respect the rights of others. Disruptive behavior will not be tolerated. All students are also expected to attend and be on time for all class meetings. No cell phones or similar electronic devices are permitted in class. Please refer to the Essex County College student handbook, *Lifeline*, for more specific information about the College’s Code of Conduct and attendance requirements.

Course Content Outline: based on the text **Data Communications and Computer Networks: A Business User's Approach**, 8th edition, by Curt White; published by Cengage Learning;
 ISBN-10: 1305116631 | ISBN-13: 9781305116634

Week (2 meetings @ 80 minutes)	Topic/Chapter
1	Chapter 1 Introduction to Computer Networks and Related Terminology
2	Chapter 2 Tools for Probing the Network Chapter 3 Network Communication
3	Chapter 4 Transmission Media Chapter 5 Asynchronous Communication Concepts, RS-232
4	Chapter 6 Long Distance Communication Test #1
5	Chapter 7 Packets, Frames and Error Detection Chapter 8 LAN Technology, Network Topologies: Ring Star Bus, Sharing on an Ethernet
6	Chapter 9 Transmission across a LAN, Hardware Addressing, Frame Type Identifiers
7	Chapter 10 LAN Wiring, Physical Topology, Interface Hardware
8	Chapter 11 Extending LANs Test #2
9	Chapter 12 Long Distance Digital Technologies
10	Chapter 13 WAN Technologies, Routing
11	Chapter 15 Network Ownership, Connection-Oriented Service, Network Performance
12	Chapter 16 Protocol Software and Layering Test #3
13	Chapter 26 Client-Server Interaction Chapter 29 Structure of Computer Names, Domain Name System
14	Chapter 30 Electronic Mail Chapter 32 World Wide Web Pages and Browsing
15	Review & Final Exam