

METROPOLITAN STATE UNIVERSITY OF DENVER
Office of Academic and Student Affairs

REGULAR COURSE SYLLABUS

College of: Professional Studies

Department: Engineering and Engineering Technology

Prefix & Course Number: CPE 4330 Crosslisted With*: _____

Course Title: Data Communication

Transcript Course Title (30 characters): Data Communication

Check All That Apply: Required for Major: ___ Required for Minor: ___ Specified Elective: X
Required for Concentration: _____ Elective: ___ Service Course: _____

To receive Title IV financial aid funds, all institutions of higher education must comply with the federal definition of a credit hour. The Higher Learning Commission requires institutions to maintain policies and procedures for verifying compliance with this definition.

Federal Credit Hour Definition: *A credit hour is an amount of work represented in intended learning outcomes and verified by evidence of student achievement that is an institutionally-established equivalency that reasonably approximates not less than:
(1) one hour of classroom or direct faculty instruction and a minimum of two hours of out-of-class student work each week for approximately fifteen weeks for one semester or trimester hour of credit, or ten to twelve weeks for one quarter hour of credit, or the equivalent amount of work over a different amount of time; or (2) at least an equivalent amount of work as required in paragraph (1) of this definition for other activities as established by an institution, including laboratory work, internships, practica, studio work, and other academic work leading toward to the award of credit hours. 34CFR 600.2 (11/1/2010)*

Credit Hours: 3 (2+2) Schedule Type: B Grade Mode: L

Face-to-Face or Equivalent Hours per course:

Lecture 30 Lab 30 Internship _____ Practicum _____ Other (please specify type and hours): _____

Additional Student Work Hours per course: 90

Variable topics umbrella course: No X Yes _____ If yes, number of credits/repeats allowed _____

Specified repeatable course: No X Yes _____ If yes, number of credits/repeats allowed _____

Prerequisite(s): CPE 2310 with a grade of "C" or better

Corequisite(s): _____

Prerequisite(s) or Corequisite(s): _____

Banner Enforced Coding:

Prerequisite(s): CPE 2310 with a grade of "C" or better

Corequisite(s): _____

Prerequisite(s) or Corequisite(s): _____

Registration restrictions: Level _____ Class _____ Program/Major _____ Student attribute _____

Catalog Course Description:

This course covers methods of local and distant digital communications including: systems, standards, and hardware used for transmitting digital data either synchronously or asynchronously.

Specific Variable Topics Course Description (if applicable, umbrella course description included above):

Required Reading and Other Materials will be equivalent to:

Halsall (2005). *Computer Networking and the Internet*. 5th Edition. Addison Wesley

Specific, Measurable Student Behavioral Learning Objectives:

Upon completion of this course the student should be able to:

1. Understand the OSI standards, data format structure, routing process and IP system design
2. Understand voice, data and video equipment and its function in data networks
3. Design a voice, data and video network for a small business

Detailed Outline of Course Content or Outline of Field Experience/Internship (experience, responsibilities and supervision):

- I. Introduction
 - A. Digital Codes
 - B. Communication System
 - C. Electrical Specifications

- II. Asynchronous Transmission
 - A. Methods
 - B. Standards
 - C. Modems
 - D. Interfacing Techniques

- III. Synchronous Transmission
 - A. Methods
 - B. Standards

- C. Modems
- D. Interfacing Techniques

- IV. Digital Transmission
 - A. Terrestrial Systems
 - B. Satellite Systems
 - C. Telephone Network and ISDN
 - D. Multiplexing
 - E. Modulation
- V. Error Detection and Correction
- VI. Data Compression and Encryption
- VII. Communication Systems Design
 - A. Capacity Analysis
 - B. Future Growth Planning

Evaluation of Student Performance:

1. Examinations
2. Written Assignments
3. Presentations
4. Lab Reports