



**Course Name:** Data Communications and Networks

**Course Number:** CST\* E231

**Credits:** 3

**Catalog description:** An introduction to data communications concepts and computer networking. Topics covered will include data transmission, data encoding, transmission media, network access control, communication protocols, network architecture, LANs, MANs, and WANs, internetworking, Internet protocol architecture and layers, and network applications.

**Prerequisite:** ENG\* E101 *or* permission of the instructor

**Corequisite or Parallel:**

## **General Education Competencies Satisfied:**

**HCC General Education Requirement Designated Competency Attribute Code(s):**

None

**Additional CSCU General Education Requirements for CSCU Transfer Degree Programs:**

None

**Embedded Competency(ies):**

None

**Discipline-Specific Attribute Code(s):**

COMP                      Computer Science Elective

## **Course objectives:**

**General Education Goals and Outcomes:**

None



### **Course Specific Objectives:**

1. Understand and describe the fundamental underlying concepts of data, signals, data communication and transmission
2. Understand and describe transmission media, transmission impairments, and channel capacity
3. Understand and describe signal encoding techniques, error detection and correction
4. Understand and describe protocol concepts and the need for communication protocols, and protocol architecture
5. Understand and describe the concept of network architecture
6. Understand and identify Local Area Networks, Metropolitan Area Networks (MANs) and Wide Area Networks (WANs)
7. Understand and describe the concept of network interconnections (internetworking)
8. Understand and describe Internet protocols and TCP/IP and Internet routing
9. Become familiar with common and well-known network applications

### **Course Content:**

- Fundamental data communication concepts
- Information sources and signals
- Data transmission, transmission media, transmission impairments, channel capacity
- Signal encoding techniques
- Error detection and correction
- Communication protocol architecture and protocol models
- Network Architecture
- Local Area Networks
- Metropolitan Area Networks (MANs) and Wide Area Networks (WANs)
- Network interconnections (internetworking)
- Internet protocols and TCP/IP
- Common and well-known network applications

Date Course Created: Fall 2016

Date of Last Revision: 04/03/2017