



# HOUSATONIC COMMUNITY COLLEGE

**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 and MAT\* E137 or higher *or* permission of the instructor

**Corequisite or Parallel:**

## General Education Competencies Satisfied:

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

- |                               |  |
|-------------------------------|--|
| <input type="checkbox"/> AESX | Appreciation of the Aesthetic Dimensions of Humankind  |
| <input type="checkbox"/> QUAX | Quantitative Reasoning   |
| <input type="checkbox"/> SCKX | Scientific Knowledge & Understanding   |
| <input type="checkbox"/> SOCX | Social Phenomena Knowledge & Understanding I<br><i>(within the fields of anthropology, psychology or sociology)</i>      |
| <input type="checkbox"/> SOPX | Social Phenomena Knowledge & Understanding II<br><i>(not within the fields of anthropology, psychology or sociology)</i> |
| <input type="checkbox"/> WRCX | Written Communication in English I   |
| <input type="checkbox"/> WRIX | Written Communication in English II  |

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

- |                               |                                      |
|-------------------------------|--------------------------------------|
| <input type="checkbox"/> ORAX | Oral Communication in English        |
| <input type="checkbox"/> HISX | Historical Knowledge & Understanding |
| <input type="checkbox"/> SCRX | Scientific Reasoning                 |

### Embedded Competency(ies):

- |       |  |
|-------|--|
| CRIX  | Critical Analysis & Logical Thinking (Outcomes <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5) |
| CONX  | Continuing Learning & Information Literacy (Outcomes <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4)                      |
| ED    | Appreciation of the Ethical Dimensions of Humankind (Outcomes <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4)             |
| WCIII | Written Communication in English III (Outcomes <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5) |

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



# HOUSATONIC COMMUNITY COLLEGE

<input type="checkbox"/> BHEL	Behavioral Science elective
<input type="checkbox"/> BUS	Business elective
<input type="checkbox"/> C	Computer Literacy (satisfies requirement)
<input type="checkbox"/> COMP	Computer Science Elective
<input type="checkbox"/> FINA	Fine Arts elective
<input type="checkbox"/> HUM	Humanities elective
<input type="checkbox"/> MATH	Mathematics elective
<input type="checkbox"/> SCI	Science elective
<input type="checkbox"/> SSCI	Social Science elective

## Course objectives:

## General Education Goals and Outcomes:

## 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