

**NEOSHO COUNTY COMMUNITY COLLEGE  
MASTER COURSE SYLLABUS**

**COURSE IDENTIFICATION**

Course Code/Number: ETEC 105

Course Title: Introduction to Networking (CISCO I)

Division:  Applied Science (AS)  Liberal Arts (LA)  Workforce Development (WD)  
 Health Care (HC)  Lifetime Learning (LL)  Nursing  Developmental

Credit Hour(s): Three (3)

Effective Date: Fall 2013

Assessment Goal Per Outcome: 70%

**COURSE DESCRIPTION**

This is the first of four semester courses in CISCO networking designed to provide students the skills they will need to design, build, and maintain small to medium size networks. This provides them with the opportunity to enter the workforce and/or further their education and training in the computer networking field. CISCO I-IV must be taken in sequence

**MINIMUM REQUIREMENTS/PREREQUISITES AND/OR COREQUISITES**

None, Microsoft Office skills; introductory programming or multimedia courses; and/or introductory electronics courses are helpful, but not required.

**TEXTS**

The official list of textbooks and materials for this course is found on [myNeosho](http://www.neosho.edu/ProspectiveStudents/Registration/CourseSyllabi.aspx).

<http://www.neosho.edu/ProspectiveStudents/Registration/CourseSyllabi.aspx>

**GENERAL EDUCATION OUTCOMES**

1. Practice Responsible Citizenship through:

- identifying rights and responsibilities of citizenship,
  - identifying how human values and perceptions affect and are affected by social diversity,
  - identifying and interpreting artistic expression.
2. Live a healthy lifestyle (physical, intellectual, social) through:
    - listing factors associated with a healthy lifestyle and lifetime fitness,
    - identifying the importance of lifetime learning,
    - demonstrating self-discipline, respect for others, and the ability to work collaboratively as a team.
  3. Communicate effectively through:
    - developing effective written communication skills,
    - developing effective oral communication and listening skills.
  4. Think analytically through:
    - utilizing quantitative information in problem solving,
    - utilizing the principles of systematic inquiry,
    - utilizing various information resources including technology for research and data collection.

### **COURSE OUTCOMES/COMPETENCIES** (as Required)

Upon completion of CISCO Networking I students will be able to perform tasks related to the following and to competently:

1. Describe basic computer hardware.
  - a) List major components of a personal computer.
  - b) Describe information flow in an idealized computer.
  - c) Discuss the relationship of NICs to PCs.
  - d) Relate the installation of a NIC in a PC.
  - e) Compare and contrast PC components versus laptop components.
2. Describe basic computer software.
  - a) Configure network settings required to connect a PC to a network.
  - b) Verify web browser configuration.
  - c) Troubleshoot hardware vs. software problems.
3. Understand and be able to work with Binary and Hexidecimal Numbers
  - a) Summarize hexadecimal numbers.
  - b) Convert decimal numbers to binary numbers and vice versa.
  - c) Convert decimal numbers to hexadecimal numbers and vice versa.
4. Demonstrate an understanding of basic networking terminology.
  - a) Describe digital bandwidth
  - b) Discuss the general model of communication.
  - c) Discuss the basics of signals and noise and communication systems.
  - d) Discuss the basics of encoding networking signals.
  - e) Describe layer 1 components and devices.
  - f) Describe layer 2 devices.
  - g) Describe layer 3 devices.
  - h) Discuss collisions and collision domains in shared layer environments.
  - i) Describe basic topologies used in networking.

- j) Describe and discuss NICs, media, repeaters, hubs, bridges, switches, routers, clouds, and network segments.
- k) Discuss the basics of signals and noise and communication systems.
- 5. Describe the OSI Reference Model.
  - a) List and describe the seven layers of the OSI reference model.
  - b) Perform tasks related to the session layer.
  - c) Perform tasks related to the presentation layer.
  - d) Describe basics of the application layer.
  - e) Describe the domain name system.
  - f) Describe packet flow through layers 1, 2, and 3 devices.
  - g) Describe packet flow through clouds and through layer 1-7 devices.
  - h) Describe a data packet's path through all seven layers of a LAN.
- 6. Describe the TCP/IP Model.
  - a) Name and describe the layers of the TCP/IP reference model.
  - b) Compare the OSI Model and the TCP/IP Model.
- 7. Demonstrate the ability to build LANs.
  - a) Discuss basic LAN devices.
  - b) Describe the evolution of network devices.
  - c) Describe the basics of electricity.
  - d) Describe the basics of digital multimeters.
  - e) Compare common LAN media.
  - f) Explain cable specification and termination.
  - g) Define STP, UTP, coaxial cable, optical fiber, and wireless communication.
- 8. Make and test cable.
  - a) Test Ethernet 10Base-T patch cables with a cable tester.
  - b) Make and test Ethernet 10Base-T straight-through patch cable.
  - c) Make and test Ethernet 10Base-T console patch cable.
  - d) Make and test Ethernet 10Base-T crossover cable.
- 9. Create and Describe Subnetting.
  - a) Create a subnet.
  - b) Describe classical IP addressing.
  - c) Define subnetwork and the purpose for subnetting.
  - d) Define the subnet mask.

## **MINIMUM COURSE CONTENT**

The following topics must be included in this course. Additional topics may also be included.

1. Introduction to Networking
2. Networking Fundamentals
3. Networking Media
4. Cable Testing
5. Cabling LANs and WANs
6. Ethernet Fundamentals
7. Ethernet Technologies

8. Ethernet Switching
9. TCP /IP Protocol Suite and IP addressing
10. Routing Fundamentals and Subnets
11. TCP/IP Transport and Application Layers

**STUDENT REQUIREMENTS AND METHOD OF EVALUATION**

INSTRUCTIONAL METHODS

Lecture, discussions, demonstrations, assigned readings, and computerized applications

STUDENT REQUIREMENTS

To successfully complete the course students must master basic content, lab skills, documentation skills, people skills, and achieve awareness and access.

<u>Grading</u>	<u>%</u>	<u>Comments</u>
Skill Exams	25%	Mastery of skills: PC hardware & software; making cables; structured wiring installations; building and troubleshooting simple LANS
Exams	49%	Computerized module exams
	26%	Computerized final exam

GRADING SCALE

A=	90-100%
B=	80-89%
C=	70-79%
D=	60-69%
F	<60%

**ASSESSMENT OF STUDENT GAIN**

The purpose of assessing student learning at Neosho County Community College is to ensure the educational purposes of the institution are met and appropriate changes are made in program development and classroom instruction to allow for student success.

Assessment of the student’s gain will be measured by comparing the students’ knowledge base at the beginning and end of the semester. This will be done by giving each student an objective pre-test covering the course contents at the beginning of the semester and administering the same instrument as a post-test at the conclusion of the course. A comparison will then be made.

## **Attendance Policy**

1. NCCC values interactive learning which promotes student engagement in the learning process. To be actively engaged, the student must be present in the learning environment.
2. Unless students are participating in a school activity or are excused by the instructor, they are expected to attend class. If a student's absences exceed one-eighth of the total course duration, (which equates to one hundred (100) minutes per credit hour in a face-to-face class) the instructor has the right, but is not required, to withdraw a student from the course. Once the student has been dropped for excessive absences, the registrar's office will send a letter to the student, stating that he or she has been dropped. A student may petition the chief academic officer for reinstatement by submitting a letter stating valid reasons for the absences within one week of the registrar's notification. If the student is reinstated into the class, the instructor and the registrar will be notified. Please refer to the Student Handbook/Academic Policies for more information
3. Absences that occur due to students participating in official college activities are excused except in those cases where outside bodies, such as the State Board of Nursing, have requirements for minimum class minutes for each student. Students who are excused will be given reasonable opportunity to make up any missed work or receive substitute assignments from the instructor and should not be penalized for the absence. Proper procedure should be followed in notifying faculty in advance of the student's planned participation in the event. Ultimately it is the student's responsibility to notify the instructor in advance of the planned absence.

## **ACADEMIC INTEGRITY**

NCCC expects every student to demonstrate ethical behavior with regard to academic pursuits. Academic integrity in coursework is a specific requirement. Definitions, examples, and possible consequences for violations of Academic Integrity, as well as the appeals process, can be found in the College Catalog, Student Handbook, and/or Code of Student Conduct and Discipline.

## **ELECTRONIC DEVICE POLICY**

Student cell phones and other personal electronic devices not being used for class activities must not be accessed during class times unless the instructor chooses to waive this policy.

## **NOTE**

Information and statements in this document are subject to change at the discretion of NCCC. Students will be notified of changes and where to find the most current approved documents.

## **ACCOMMODATIONS**

If you are a student with a disability who may need accommodation(s), in compliance with Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act (ADA) of 1990, please notify the Dean of Student Services in the Student Services Office, Sanders Hall, 620-432-0304, on the Chanute Campus, or the Dean for the Ottawa and Online Campuses, 785-248-2798, on the Ottawa Campus as soon as possible. You will need to bring your documentation for review in order to determine reasonable accommodations, and then we can assist you in arranging any necessary accommodations.

## **NON-DISCRIMINATION POLICY**

The following link provides information related to the non-discrimination policy of NCCC, including persons with disabilities. Students are urged to review this policy.

<http://www.neosho.edu/Departments/NonDiscrimination.aspx>

## **SEXUAL MISCONDUCT POLICY (TITLE IX)**

At NCCC, it is the responsibility of an instructor to help create a safe learning environment in the classroom, including both physical and virtual classrooms. All instructors are considered mandatory reporters at NCCC, therefore any information regarding sexual misconduct that is shared by a student in one-on-one meetings with the instructor must be reported to appropriate personnel at the College. Instructors will keep the information private to the greatest extent possible, but it is not confidential. Generally, climate surveys, classroom writing assignments or discussions, human subjects research, or events such as Take Back the Night events do not provide notice that must be reported to the Coordinator by employees, unless the reporting party clearly indicates that they wish a report to be made.

The following link provides information related to the sexual misconduct policy of NCCC, including resources, reporting options, and student rights. Students are urged to review this policy.

<http://www.neosho.edu/TitleIX.aspx>

## **COURSE NOTES**