



KENTUCKY COMMUNITY AND TECHNICAL COLLEGE SYSTEM

**Big Sandy Community and Technical College**

**Course Syllabus**

**PS Number:** 45347      **Semester:** Fall      **Year:** 2009

**Faculty Name:** Richard Roe      **Title:** Associate Professor

**Course Prefix and Number:** IT 122      **Course Credit Hours:** 4

**Course Prerequisites:** IT 122

**Course Title:** Cisco Networking II

**Catalog Course Description:** An integral step towards achieving CCNA certification. CCNA 2 continues to familiarize Cisco Networking Academy Program students to the networking field. Initial router configuration, Cisco IOS Software management, routing protocol configuration, TCP/IP, and access control lists (ACLs) are explored

**Instructor Contact Information:**

**Campus Location:** Pikeville      **Building & Room:** N304

**Office Hours:** See Attached

**Office Phone Number:** 606-218-1243      **Alternate Number:** 606-218-2060

**Best Times to Call:** During office hours

**KCTCS Email:** [Richardt.roe@kctcs.edu](mailto:Richardt.roe@kctcs.edu)

**Special Instructions:**

**Supervisor Contact Information:**

**Name:** Keithen McKenzie

**Campus Location:** Mayo      **Building & Room:** ,

**Office Phone Number:** 606-218-2060

**KCTCS Email:** [Keithen.mckenzie@kctcs.edu](mailto:Keithen.mckenzie@kctcs.edu)

**Text and Supplies:**

NONE

**Approved Course Competencies**

**General Education: (KCTCS General Education Competency Statements and General Education Requirements)**

- I. Communicate Effectively**
1. Read and listen with comprehension.
  2. Speak and write clearly using Standard English.
  3. Interact cooperatively with others using both verbal and non-verbal means.
  4. Demonstrate information processing through basic computer skills.

**How Implemented in Class:** Utilization of processing and computer networking skills

- II. Think Critically**
1. Make connections in learning across the disciplines and draw logical conclusions.
  2. Demonstrate problem solving through interpreting, analyzing, summarizing, and/or integrating a variety of materials.
  3. Use mathematics to organize, analyze, and synthesize data to solve a problem.

**How Implemented in Class:** Solving network issues and analyzing data

- III. Learn Independently**
1. Use appropriate search strategies and resources to find, evaluate, and use information.
  2. Make choices based upon awareness of ethics and differing perspectives/ideas.
  3. Apply learning in academic, personal, and public situations.
  4. Think creatively to develop new ideas, processes, or products.

**How Implemented in Class:** Internet and network discovery via practical CCNA processes and networking protocols

- IV. Examine Relationships in Diverse and Complex Environments**
1. Recognize the relationship of the individual to human heritage and culture.
  2. Demonstrate an awareness of the relationship of the individual to the biological and physical environment.
  3. Develop an awareness of self as an individual member of a multicultural global community.

**How Implemented in Class:** Global community of students and teachers create a strength building relationship

**Course Specific Competencies:**

## ***Course Competencies***

Upon completion of the course, the student can:

1. Demonstrate understanding of Basic Computer Hardware.
2. Demonstrate understanding of Computer Software.
3. Demonstrate knowledge of Networking Terminology.
4. Demonstrate understanding of the Binary Number System.
5. Demonstrate understanding of digital bandwidth.
6. Demonstrate understanding of the OSI Model.
7. Demonstrate understanding of LAN Devices.
8. Demonstrate the building of LANs.
9. Demonstrate understanding of basic electricity.
10. Demonstrate use of Digital Multimeters.
11. Demonstrate understanding of encoding of networking signals.
12. Demonstrate understanding of most common LAN media.
13. Demonstrate knowledge of cable specifications and termination.
14. Be able to implement IP address and subnetting schemes.

Students will fulfill these competencies by participating in class discussions of material, and by completing projects that provide students with hands-on experience in performing various computing operations.

**Lab Competencies:** (Enter N/A if this does not apply.)

NA

**Course Outline:**

## **Routers**

- A. Basic Information about Routers and their Use in Networks
- B. WANs
- II. Using Routers
  - A. Basics of Router's Command Line Interface.
  - B. How to Log into the Router
  - C. How to Enter Router Modes

### **D. Different Router Modes and Commands**

- III. Router Component
  - A. Router Components
  - B. Router Show Commands.
  - C. Router's Network Neighbors.
  - D. Basic Network Testing Commands.
  - E. CDP-Related Commands.
  - F. Remote Router Access Using Telnet
  - G. Network Connectivity Using Ping.
  - H. Network Troubleshooting Using Trace IP.
  - I. Interface Status Using Show Interface.
- IV. Router Startup & Setup
  - A. Router Boot Sequence and Setup Mode
  - B. Configure a Router from Setup Mode.
- V. Router Configuration
  - Where Router Configuration Files are Located.

Basic Router Configuration

### **Router Interface Configuration**

- Network Configuration
- VI. IOS
  - A. Basics of IOS Versions
  - B. Use and Interpretation of the Show Version Command
  - C. Load IOS Images.
  - D. Loading IOS Image from a TFTP Server.
  - E. Loading a New IOS Image.
- VII. TCP/IP
  - A. Basics of Layer 4
  - B. Important Layer 3 Concepts.
  - C. TCP/IP Protocol Suite
  - D. The Show ARP Command
  - E. Gather and Use ARP Table Information
  - F. Router Troubleshooting
- VIII. IP Addressing
  - A. IP Addressing and Subnetting**
    - B. Role of DNS in Router Configurations
    - C. Assigning New Subnet Numbers to the Semester 2 Topology.
    - D. Assigning Subnet Numbers to a Real Network

- IX. Routing
  - A. Basics of Routing**
  - B. Why Routing Protocols are Necessary.
  - C. Basics of Distance-Vector Routing
  - D. Basics of Link-State Routing
  - E. Context of Different Routing Protocols
- X. Routing Protocols
  - A. Static Routing and Default Routes
  - B. Interior and Exterior Routing Protocols
  - C. RIP
  - D. IGRP
  - E. Routes
  - F. Routing Loops
  - G. Routing Loops Prevention

**Course Structure:**

Instruction in this course will be composed of lecture, discussion, and hands-on activities to enhance the learning experience. Assignments will be made during each class meeting. Students will have one (1) week from the date the assignment is made to turn it in to the instructor, this giving adequate time for completion. Portions of the course will be web enhanced. Instruction in web media will be given prior to web assignments.

**Technology/Media Component:**

Utilization of Cisco Class Site and Cisco online tools is a required portion of the course that will be utilized. Specific instruction will be given.

**Service-Learning:**

**Course Requirements and Evaluation:**

Cisco Exams	1000 points
Student Labs	500
Total Points	1500

**Grading Policy:**

100 – 90	A
89 – 80	B
79 – 70	C
69 – 60	D
59 – Below	E

**Attendance Policy:**

You have 5 class days to miss with no harm to your grade done. After the fifth class period missed your final grade in the class will be reduced by 25 percent. On the 7<sup>th</sup> day of missed class your grade will be reduced by another 25percent at which point passing the course will be impossible.

**Missed Exam Policy:**

No exams or homework are accepted late. It is the students responsibility to make arrangements for missed class time prior to the due date of any assignment

**Late Assignment Policy:**

No late work is accepted.

**Withdrawal Policy:**

Students can officially withdraw from a class up to midterm and receive a grade of “W”. After midterm, students wishing to withdraw can do so at the instructor’s discretion and earn a “W” depending on the student’s performance in the course up to that point.

**ARTICLE II - ACADEMIC POLICIES AND PROCEDURES**

<http://www.kctcs.edu/student/studentcodeofconduct.pdf>

(Referenced in the Rules of the Community College Senate, Section VII and in the Rules of the Technical College Senate, Section VII). The following information is available on the BSCTC Homepage:

[www.Bigsandy.kctcs.edu](http://www.Bigsandy.kctcs.edu) go to Current Students and under Right to Know click on Student Code of Conduct. Paper copies of all the documents listed under Right to Know are also available upon request at the Admissions Office or Library on the Mayo, Pikeville and Prestonsburg Campuses.

**2.1 Academic Honesty Policy**

2.2.1 Information about course content criteria

2.2.3 Contrary opinion

2.2.5 Academic records ability

**2.3 Student Academic Offenses and Academic Sanctions**

2.3.1.1 *Plagiarism*

2.3.1.3 *Student Co-Responsibility Academic Records*

2.3.2 Academic Sanctions/Penalties of Students

**2.4 Student Appeals and Responsibilities**

**2.4.1.1 *Responsibility Involving Academic Rights of Students (section 2.0)***

Please refer to flowchart: [Appeals in Cases of an Alleged Violation of Student Academic Rights Figure 1](#) **2.4.1.2 *Responsibility Involving Academic Offenses (section 2.3)*** When a student is believed to be guilty of any of the four academic offenses (2.3.1.1 – 2.3.1.4), a student will find information concerning responsibilities of college personnel in section 2.5.2.

**2.2 Academic Rights of Students**

2.2.2 Information about course grading

2.2.4 Academic evaluation

2.2.6 Evaluation of student character and

2.3.1 KCTCS Academic Offenses

2.3.1.2 *Cheating*

2.3.1.4 *Misuse or Student Falsification of*

2.3.2.2 *Other Academic Sanctions*

**2.4.1 Student Responsibilities**

**Safety and Security** - The following information is available on the BSCTC Homepage at:

[http://www.bigsandy.kctcs.edu/safety\\_security/index.html](http://www.bigsandy.kctcs.edu/safety_security/index.html)

Safety Handbook v. 08-09, KCTCS Emergency Notification System Guidelines, Emergency Management in the Instructional Setting, and [Opt-in for SNAP](#) Safety Notification and Alert Process.

**Center for Enrichment Resources**

[http://www.bigsandy.kctcs.edu/student\\_support/cer/](http://www.bigsandy.kctcs.edu/student_support/cer/)

The BSCTC Center for Enrichment Resources (CER) offers students academic assistance in all subject areas. Campus Locations: **Prestonsburg Campus:** Magoffin Building 219; **Pikeville Campus:** N204; **Mayo Campus:** C200 and 202.

**Additional Information Available at the Current Student Portal**

[http://www.bigsandy.kctcs.edu/current\\_students](http://www.bigsandy.kctcs.edu/current_students)

Online Access  
Information

Student Services

Registration

College Life

Academic Information

Right to Know

**Americans with Disabilities Act (ADA) Statement**

[http://www.bigsandy.kctcs.edu/student\\_support/disability](http://www.bigsandy.kctcs.edu/student_support/disability)

Students with disabilities: If you are in need of an accommodation because of a documented disability, you are required to register with Disability Support Services each semester.

Contact: **Janie Beverley, Coordinator for Disability Support Services; Student Center Room 103; Ph: (606) 886-7359; Toll-free 888-641-4132, ext. 67359; Email:**

[janie.beverley@kctcs.edu](mailto:janie.beverley@kctcs.edu)