

# **Cape Girardeau Career and Technology Center**

## **Course Syllabus**

### **Course Title: Computer Technology II**

**School Year: 2008-2009 Room Number: 207/209**

**Class Meets: 12:15pm to 2:40pm, Monday thru Friday**

**Instructor: Bill Link**

**Phone: 573/334-0826 Email: [linkb@cape.k12.mo.us](mailto:linkb@cape.k12.mo.us)**

**Office Hours: 7:35am to 8:20am and 2:45pm to 3:15pm**

#### **I. RATIONALE/PHILOSOPHY AND GRADUATE GOALS:**

This is the second year of a two-year program designed to prepare students for a technical career in a rapidly changing, technologically driven society and world. Students will continue to develop keen and adaptable technical skills and acquire broad background knowledge which will provide the basis for a sustained career experience as a computer technician and/or computer network administrator.

Students will continue to develop workplace skills and values that will make them effective employees, team members, and leaders. Using a combination of challenging written curriculum and hands-on experiences, students will work both independently and in teams to enhance the development of both academic and practical skills as well as the ability to work both independently and in collaboration with others.

#### **II. COURSE DESCRIPTION:**

Through participation in the Cisco Networking Academy in combination with other curricular opportunities and experiences, second-year students in this program will learn advanced computer technician and networking skills.

Motivated students who wish to do additional self-study and review will be encouraged to take the Cisco CCNA Certification Exam and/or the Comptia A+/Network+ exams after completion of semester four.

Students will use supplementary materials and receive additional assignments throughout the year to develop more advanced skills in maintaining, upgrading, and repairing workstation and server computer hardware and software and solving common problems.

Experience with Microsoft Active Directory Networks and Server Operating Systems will also be gained.

### III. PREREQUISITE:

Successful completion of Computer Technology I. (No exceptions will be made)

### IV. OBJECTIVES:

After successful completion of the third semester of Cisco CCNA Discovery Curriculum, *Introducing Routing and Switching in the Enterprise* (first semester of this course), students will demonstrate the following skills:

- Implement a LAN for an approved network design
- Configure a switch with VLANs and inter-switch communication
- Implement access lists to permit or deny specified traffic
- Implement WAN links
- Configure routing protocols on Cisco devices
- Perform LAN, WAN, and VLAN troubleshooting using a structured methodology and the OSI model

The fourth semester of Cisco's CCNA Discovery Curriculum, *Designing and Supporting Computer Networks*, is a last important step toward achieving CCNA certification. Upon completion of this, students will demonstrate the following skills:

- Gather customer requirements
- Design a simple Internetwork using Cisco technology
- Design an IP addressing scheme to meet LAN requirements
- Create an equipment list to meet LAN design requirements
- Create and present a proposal to a customer
- Install and configure a prototype Internetwork
- Obtain and upgrade Cisco IOS Software in Cisco devices

Upon successful completion of IT Essentials II Curriculum: *Network Operating Systems*, the students' acquired competencies include:

- Network Operating System basics
- Network Operating System components
- Network design and topology
- Media types and effectiveness
- Internet connection
- Network services including remote access and directory services
- NIC and IP address configuration
- NOS installation planning
- Windows 2000 installation
- Linux installation and troubleshooting
- Network security plan development

## V. TEACHING AND LEARNING STRATEGIES:

1. Reading and analysis of written materials.
2. Class discussion and lectures.
3. Written assignments.
4. Hands-on labs and projects.
5. Assist in repair and maintenance of district computers
6. Group and Individual projects and presentations.
7. Maintaining a class notebook.

## VI. COURSE MATERIALS:

1. Cisco Systems Networking Academy On-Line Curriculum, “CCNA Discovery: *Introducing Routing and Switching in the Enterprise*”
2. Cisco Systems Networking Academy On-Line Curriculum, “CCNA Discovery: *Designing and Supporting Computer Networks*”
3. Cisco Systems Networking Academy On-Line Curriculum, “IT Essentials II: *Network Operating Systems v3.0*”.
4. Text: *Cisco Systems, et al., (2004) Cisco Networking Academy Program IT Essentials II: Network Operating Systems Companion Guide. Cisco Press, 2<sup>nd</sup> Ed*
5. Other materials as deemed appropriate by instructor will be introduced and used.

## VII. EVALUATION OF STUDENT PROGRESS AND ACHIEVEMENT:

*(High School Students who earn a passing grade will receive one and one-half units of Practical Arts credit per semester toward High School Graduation. Additionally, College Credit may be granted to both Adult students and Secondary School Students who satisfy requirements through Articulation with Mineral Area College. Interested students should inquire about this program in the Career Center Guidance Office.)*

1. **Examinations:** There will be an on-line examination at the end of each module of the on-line Cisco Networking Academy curriculum and an on-line final examination at the end of each semester of the academy curriculum. Students should achieve an average mastery level of 70% on the module exams and 70% on the final exam in order to proceed to the next semester of the curriculum. There may be additional required skills-based assessments for successful completion of some semesters of the curriculum. Other written and skills-based assessments pertaining to the *IT Essentials* texts, and other materials, may also be given as deemed appropriate by the instructor. ***(Exams will count as 30% of the final grade).***
2. **Written Assignments:** There will be numerous worksheets, study guides, and short research papers assigned throughout the course. ***(Written Assignments will count as 30% of the final grade).***

3. **Labs:** Required network configuration labs are part of the overall curriculum and students will receive points for their performance. *(Labs will count as 20% of the final grade).*
4. **Group Projects and Presentations:** The instructor will periodically assign team projects, some of which will be presented to the class using MS PowerPoint or other common applications. *(Projects will count as 20% of the final grade).*
5. **Class Notebook:** The student will maintain a three-ring binder of all materials worked on in the class which will reflect their progress throughout the class. The notebook will be ultimately be used as a review for final examinations and vendor certification tests. *(The notebook will be evaluated periodically and will be part of the student's Project Grade).*
6. **Participation:** Students will receive points toward their final grade based on the instructor's observation of their attitude and overall willingness to participate in the required activities of the course. As a member of the class "team", part of their participation points will reflect their ability and willingness to contribute to the overall achievement and progress of all members of the class. *(Participation points will count as part of the student's Project Grade).*

#### **VIII. CAPE GIRARDEAU PUBLIC SCHOOLS GRADING SCALE:**

A	96 to 100%	C	74 to 77%
A-	92 to 95%	C-	70 to 73%
B+	89 to 91%	D+	67 to 69%
B	85 to 88%	D	63 to 66%
B-	82 to 84%	D-	60 to 62%
C+	78 to 81%	F	0 to 59% (No credit granted)

#### **IX. LATE WORK POLICY:**

Assignments which are not submitted to the teacher on the stated due date will receive a point deduction of 10% of the total points of the assignment for each day the assignment is late to a maximum of three days late. On the fourth day after the assignment is due, any work that has not been turned in will receive zero credit.

Allowances of extra time to make up work in cases of legitimate illnesses and emergencies will be made at the teacher's discretion, but it is the responsibility of the student, not the teacher, to make arrangements for making up work under any and all circumstances.

**X. STUDENT CONDUCT AND CLASSROOM RULES:**

All students, regardless of their sending school, are expected to adhere to the expectations and policies stated in the Cape Central High School Student Handbook and Student Code of Conduct. This publication covers all aspects of student behavioral expectations including discipline, rules, behavior in and out of the classroom, academic honesty, and attendance.

The publication may be accessed and viewed on the web at [www.cape.k12.mo.us/chs/office/Handbook/0809CHSSStudentHandbook.pdf](http://www.cape.k12.mo.us/chs/office/Handbook/0809CHSSStudentHandbook.pdf) Printed copies of the publication are available in the Central High School office. The office can be contacted at 573/335-8228. The only exception to the policies stated in this publication will be with regard to the granting of credit based on attendance. Students from sending schools will be granted credit under the terms of their home school attendance policy, which may vary.

Additionally, all students are expected to follow all rules and requests which pertain to the class including the “Equipment Usage Policies” contract (see attached) which is to be signed by both student and parent and returned to the teacher during the first week of class. A student who violates any of the rules of this contract (or any other rule or request made by the teacher at any time) will be subject to disciplinary action.

## **XI. MAJOR ASSIGNMENTS:**

### **A. CCNA Discovery Curriculum, “Introducing Routing and Switching in the Enterprise”:**

1. Chapter 1, “Networking in the Enterprise”.
2. Chapter 2, “Exploring the Enterprise Network Infrastructure”.
3. Chapter 3, “Switching in an Enterprise Network”.
4. Chapter 4, “Addressing in an Enterprise Network”.
5. Chapter 5, “Routing with a Distance Vector Protocol”.
6. Chapter 6, “Routing with a Link-State Protocol”.
7. Chapter 7, “Implementing Enterprise WAN Links”.
8. Chapter 8, “Filtering Traffic Using Access Control Lists”.
9. Chapter 9, “Troubleshooting an Enterprise Network”.
10. Chapter 10, “Course Summary: Putting it All Together”

### **B. CCNA Discovery Curriculum, “Designing and Supporting Computer Networks”:**

1. Chapter 1, “Introducing Network Design Concepts”.
2. Chapter 2, “Gathering Network Requirements”.
3. Chapter 3, “Characterizing the Existing Network”.
4. Chapter 4, “Identifying Application Impacts on Network Design”.
5. Chapter 5, “Creating the Network Design”.
6. Chapter 6, “Using IP Addressing in the Network Design”.
7. Chapter 7, “Prototyping the Campus Network”.
8. Chapter 8, “Prototyping the WAN”.
9. Chapter 9, “Preparing the Proposal”.
10. Chapter 10, “Course Summary: Putting it All Together”.

### **C. IT Essentials II Curriculum: “Network Operating Systems”:**

1. Chapter 1, “Operating System Fundamentals”.
2. Chapter 2, “Introduction to Networking”.
3. Chapter 3, “Physical Components of a Network”.
4. Chapter 4, “TCP/IP Networking”.
5. Chapter 5, “Overview of Network Services”.
6. Chapter 6. “Introduction to Network Operating Systems”.
7. Chapter 7. “Installation and Boot Process Overview”.
8. Chapter 8, “Windows 2000 Professional”.
9. Chapter 9, “Linux Installation Procedures”.
10. Chapter 10, “Linux”.
11. Chapter 11, “Advanced NOS Administration”.
12. Chapter 12. “Installing and Maintaining Hardware in a Linux Environment”.
13. Chapter 13. “Troubleshooting the Operating System”.
14. Chapter 14. “Network Security”.