

Cape Girardeau Career and Technology Center

Course Syllabus

Course Title: Computer Technology I

School Year: 2006-2007 Room Number: 207/209

Class Meets: 8:30am to 10:55am, Monday thru Friday

Instructor: Bill Link

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Office Hours: 7:30am to 8:30am and 2:15pm to 3:00pm

I. RATIONALE/PHILOSOPHY AND GRADUATE GOALS:

This is the first 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 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 network administrator.

Students will also be guided 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, first-year students in this program will learn basic computer technician/networking fundamentals and skills. Successful completion of the first two semesters of the Cisco Academy curriculum will provide a solid foundation in Networking Basics during semester one and Routers and Routing Basics during semester two. Students will use supplementary materials and receive additional assignments throughout the year to develop skills necessary to maintain, upgrade, and repair workstation and server computer hardware and software and solve common problems. Intermediate to in-depth experience with both legacy and latest versions of business applications, such as Microsoft Office, and computer operating systems, from MS-DOS through Windows XP and beyond, will also be gained.

III. PREREQUISITE:

Successful completion of courses in Keyboarding and Computer Applications is strongly recommended. *Students lacking this prerequisite will need instructor approval before enrolling in the course.*

IV. OBJECTIVES:

Upon completion of Cisco CCNA Curriculum, Semesters 1 & 2, students will be able to perform tasks related to the following:

1. Networking mathematics, terminology, and models
2. Networking media such as copper, optical, and wireless
3. Testing and cabling LANs and WANs
4. Ethernet Operation and 10/100/1000/10 G versions of Ethernet
5. Ethernet Switching
6. IP addressing and subnetting
7. IP, TCP, UDP, and application layer protocols
8. Routers and their roles in WANs
9. Cisco IOS
10. Router configuration
11. Router file management
12. RIP and IGRP routing protocols
13. TCP/IP error and control messages
14. Router troubleshooting
15. Intermediate TCP
16. Access Control Lists

Upon successful completion of IT Essentials I: PC Hardware and Software. The students' acquired competencies include:

1. Build, configure, upgrade, and maintain a personal computer system.
2. Diagnose and resolve problems of a personal computer system.
3. Install and configure various computer peripheral devices.
4. Setup, configure, and maintain a local area network.
5. Resolve network connectivity problems on a local area network using a systematic troubleshooting approach.
6. Install, configure, upgrade, and maintain Microsoft Windows operating systems.
7. Diagnose and resolve problems using Microsoft Windows system tools.
8. Utilize relevant workplace safety and environmental standards during computer maintenance.
9. Effectively utilize a customer-oriented approach to resolve user problems.
10. Provide computer hardware and software support based upon a set of standard and systematic diagnostic principles.

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. Group projects and presentations.
6. Maintaining a class notebook.

VI. COURSE MATERIALS:

1. Cisco Systems Networking Academy On-Line Curriculum, “CCNA 1: Networking Basics v3.1”
2. Cisco Systems Networking Academy On-Line Curriculum, “CCNA 2: Routers and Routing Basics v3.1.1”
3. Cisco Systems Networking Academy On-Line Curriculum, “IT Essentials I: PC Hardware and Software v3.1”
4. Text: *Cisco Systems, et al.*, (2004) Cisco Networking Academy Program IT Essentials I: PC Hardware and Software Companion Guide. *Cisco Press, 2nd Ed.*
5. Other materials as deemed appropriate by instructor may also be introduced and used.

VII. EVALUATION OF STUDENT PROGRESS AND ACHIEVEMENT:

(Students who earn a passing grade will receive one and one-half units of Practical Arts credit per semester toward High School Graduation)

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 units of the curriculum. *(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 router and computer configuration labs, and hands-on computer technician experiences 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, MS Front Page, 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 may be used as a review for final examinations and for vendor certification tests. *(The notebook will be evaluated several times per semester 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%
A-	92 to 95%
B+	89 to 91%
B	85 to 88%
B-	82 to 84%
C+	78 to 81%
C	74 to 77%
C-	70 to 73%
D+	67 to 69%
D	63 to 66%
D-	60 to 62%
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 approach 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/0506CHSSStudentHandbook.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 the aforementioned 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 (Subject to Change as needed):

A. CCNA Curriculum, Semester One:

1. Chapter 1, “*Introduction to Networking*”.
2. Chapter 2, “*Networking Fundamentals*”.
3. Chapter 3, “*Networking Media*”.
4. Chapter 4, “*Cable Testing*”.
5. Chapter 5, “*Cabling LANs and Wans*”.
6. Chapter 6, “*Ethernet Fundamentals*”.
7. Chapter 7, “*Ethernet Technologies*”.
8. Chapter 8, “*Ethernet Switching*”.
9. Chapter 9, “*TCP/IP Protocol Suite and IP Addressing*”.
10. Chapter 10, “*Routing Fundamentals and Subnets*”.
11. Chapter 11, “*TCP/IP Transport Layer and Application Layer*”.
12. Review for CCNA Semester One Final Exam.

B. CCNA Curriculum, Semester Two:

1. Chapter 1, “*WANs and Routers*”.
2. Chapter 2, “*Introduction to Routers*”.
3. Chapter 3, “*Configuring a Router*”.
4. Chapter 4, “*Learning about Other Devices*”.
5. Chapter 5, “*Managing Cisco IOS Software*”.
6. Chapter 6, “*Routing and Routing Protocols*”.
7. Chapter 7, “*Distance Vector Routing Protocols*”.
8. Chapter 8, “*TCP/IP Suite Error and Control Messages*”.
9. Chapter 9, “*Basic Router Troubleshooting*”.
10. Chapter 10, “*Intermediate TCP/IP*”.
11. Chapter 11, “*Access Control Lists*”.
12. Review for CCNA Semester two Final Exam.

C. *IT Essentials I:*

1. Chapter 1, "*Information Technology Basics*".
2. Chapter 2, "*How Computers Work*".
3. Chapter 3, "*Assembling a Computer*".
4. Chapter 4, "*Operating System Fundamentals*".
5. Chapter 5, "*Windows 9x Operating Systems*".
6. Chapter 6. "*Windows NT/2000 Operating Systems*".
7. Chapter 7. "*Windows XP Operating Systems*".
8. Chapter 8, "*Multimedia Capabilities*".
9. Chapter 9, "*Advanced Hardware Fundamentals for Servers*".
10. Chapter 10, "*Networking Fundamentals*".
11. Chapter 11, "*Printers and Sharing*".
12. Chapter 12. "*Preventive Maintenance*".
13. Chapter 13. "*Troubleshooting PC Hardware*".
14. Chapter 14. "*Troubleshooting Software*".
15. Review for Final Exam.