

Course Title: A+ Computer Troubleshooting
Schools Offered: Elko County School District
Grade Level: 11,12
District Text Adoption: Computer Service and Repair by Richard Roberts
Publisher: Goodheart Wilcox
Student ISBN: 1-59070-335-9
Student Lab Manual ISBN: 1-59070-336-7
Teacher ISBN: 1-59070-337-5

Course Description:

This is a computer troubleshooting and repair class. It has a hardware section and a software section. The curriculum is designed to prepare the student to take the CompTIA A+ Certification Exam. We have an articulation agreement with GBC where students gain 3 semester hours for their A+ Hardware Class for completion of the entire year at EHS.

The course is both hands on work with the computer trainers and bookwork. Students complete self paced labs, perform different jobs, take computer practice tests, and install various software. There is an opportunity to tune up home systems and even order parts to upgrade or build a personal system for those with money. Students who enjoy this class like solving problems. They will have the opportunity to work with customers outside of the program and school. No prerequisite is required, but a high level of trust and the maturity to do self-paced work is necessary.

General Course Competencies:

Students shall, at the completion of this course be able to:

1. State the purpose and parameters of the class.
2. Report on various career opportunities related to the field of computer troubleshooting.
3. Work with efficiency and use of proper protocols.
4. Solve complex problems requiring multiple steps and strategies over an extended period of time.
5. Demonstrate familiarity with related computer hardware and software.
6. Demonstrate the work habits and attitude that will benefit future employers.
7. Create a repair notebook of solutions, codes and other procedural solutions.
8. Be able to find and download drivers, updates, and patches from the internet.
9. Demonstrate competency in all office software.

10. Retain a personal electronic file of drivers which can be used in the future.
11. Import and export files between different software.
12. Demonstrate a commitment to growth by studying and reading trade journals.

Course Outline:

Unit I- Basic PC Hardware

1. Complete assembly of computer
2. Knowledge of different system board types
3. Install peripheral boards
4. Knowledge of different port connector types
5. Knowledge of different CPUs
6. Knowledge of expansion buses
7. Knowledge of different power supply types and voltages
8. Knowledge of RAM types
9. Proper memory and CPU installation

Unit II- I/O Systems and Peripherals

1. Manage interrupts
2. Configure all types of ports
3. Configure and set up USB and Firewire buses
4. Install various peripheral devices

Unit III- Storage Systems

1. Hard drive installation and configuration
2. Removable storage disk drive set up and configuration
3. Set up boot device and slaves

Unit IV- Data Communication

1. Basic network concepts

2. Work with LAN
3. Set up device on LAN with cables and wireless
4. Set up a modem
5. Configuration for Internet
6. Set up computer for VPN

Unit V- Printers

1. Dot matrix service
2. Ink jet service
3. Laser jet service
4. Install and set up printers

Unit VI- Installing and Working With Operating Systems

1. General boot up
2. BIOS and CMOS set up and configuration
3. MSDOS file management
4. Install Windows 95
5. Install Windows 98
6. Install Windows ME
7. Install and set up Windows NT
8. Install and set up Windows 2000
9. Install and set up Windows XP

Unit VII- Mechanical and System Troubleshooting

1. Use diagnostic software
2. Identify error codes and beeps
3. Perform hardware tests

4. Demonstrate proper troubleshooting protocol
5. Use system board map
6. Use Internet resources for troubleshooting
7. Create boot disks
8. Identify start up problems
9. Use technical help line

Unit VIII- Preventative Maintenance

1. Hard drive maintenance
2. Install and configure virus protection software
3. Install power line protection
4. Install various software filters and spy ware removers
5. Open cabinet and remove dust

Unit IX- Portable Devices

1. Laptop memory upgrade
2. Laptop service and diagnostics
3. PDA interface with PC

Unit X- Office Application Software

1. Install MS Office
2. Install Corel Office Suite
3. Install CADD software
4. Install 3-D Software