CTS 155
TECH SUPPORT FUNCTIONS

COURSE DESCRIPTION:

Prerequisites: None
Corequisites: None

This course introduces a variety of diagnostic and instructional tools that are used to evaluate the performance of technical support technologies. Emphasis is placed on technical support management techniques and support technologies. Upon completion, students should be able to determine the best technologies to support and solve actual technical support problems. This course will focus on Windows troubleshooting and malware. Course Hours Per Week: Class, 2. Lab, 2. Semester Hours Credit, 3.

LEARNING OUTCOMES:

Upon completion of the course, the student will be able to:

a. Communicate clearly, effectively and respectfully both orally and in writing
b. Identify the basic troubleshooting strategies used to diagnose PC issues
c. Utilize various Windows components, Services and Registry Editors to optimize the PC
d. Utilize various OS and third party back up utilities to ensure data and registry retention
e. Identify and explain the types of malware threats in today’s PC environment
f. Employ various methods for preventing infection including system and application updates, anti-virus programs, and other third party scanning and safeguard utilities
g. Employ various strategies and utilities to safely and anonymously analyze and research malware threats
h. Employ various strategies to safely remove Malware and Spyware.

OUTLINE OF INSTRUCTION:

I. Troubleshooting Strategies
   a. Common strategies
   b. Using and editing the Registry
   c. Services, MSConfig, and Safe Mode
   d. Recovery Console and Disk Utilities
   e. Performance Tools
   f. System Restore

II. Best Practices for protecting systems
   a. Isolating Suspected Malware
   b. Using Virtual Machines to Analyze Malware
c. Using Sandboxes or other Protected Environments
d. Setting a Baseline
e. Safe Researching Strategies

III. Backing Up the System
   a. Backing Up the System using OS Tools
   b. Backing Up the Registry
   c. Imaging

IV. Protecting the System
   a. System and Application Updates
   b. Installing and Maintaining Anti-Virus Software
   c. Other Third Party AntiVirus Anti-Malware or Lock-down Utilities
   d. The Windows Explorer Phishing Utility
   e. The Windows Firewall

V. Understanding Slow Systems
   a. MultiTasking / RAM
   b. Virtual Memory
   c. Defragmentation of non SSD drives
   d. ReadyBoost
   e. Setting number of CPUs
   f. Using the Windows 7 Performance Troubleshooter
   g. Disabling Unneeded Services
   h. Memory Leaks

VI. Understanding and Identifying Malware
   a. Types of Malware
      i. Virus
      ii. Worm
      iii. Trojan Horse
      iv. Rootkit
      v. Backdoor
   b. Sandboxes
   c. Malware Analysis
      i. Static
      ii. Dynamic
      iii. Hashes

VII. Removing Malware
   a. Automated Solutions
   b. Manual Removal Strategies
REQUIRED TEXTBOOK AND MATERIALS:

Text to be assigned by the instructor each semester