Course Outline for CNT 54

ADMINISTERING WINDOWS CLIENT

Effective: Spring 2018

I. CATALOG DESCRIPTION:
   CNT 54 — ADMINISTERING WINDOWS CLIENT — 4.00 units

   In this class, students learn to install, configure, and manage the current Windows client workstation for a professional business network using virtualization and/or online using virtual labs. Course content follows the Microsoft Official Academic course curriculum and is intended to prepare students to take the Microsoft client component of the Microsoft Certified Solutions Associate (MCSA) or the Microsoft Certified Solutions Expert (MCSE) certification exam. Topics include configuring device drivers, access control, networking, storage, apps, remote management, updates, data recovery, authentication, and advanced management tools.

    3.00 Units Lecture 1.00 Units Lab

   Strongly Recommended
   CNT 52 - Networking Fundamentals

   CNT 51 - CompTIA's A+ Certification Computer Technician

   Grading Methods:
   Letter or P/NP

   Discipline:

	MIN
Lecture Hours:	54.00
Lab Hours:	54.00
Total Hours:	108.00

II. NUMBER OF TIMES COURSE MAY BE TAKEN FOR CREDIT: 1

III. PREREQUISITE AND/OR ADVISORY SKILLS:

   Before entering this course, it is strongly recommended that the student should be able to:

   A. CNT52
      1. evaluate the importance of addressing and naming schemes at various layers of data networks in IPv4 and IPv6 environments;
      2. describe the major functions of LAN hardware protocols such as Ethernet; and WAN protocols such as T-series, DSL, ATM, and Frame Relay;
      3. identify the responsibilities of a LAN system administrator;
      4. draw typical network diagrams, using software tools such as Microsoft Visio;
      5. monitor the network activity using monitoring tools to view packets and analyze traffic.
   B. CNT51

IV. MEASURABLE OBJECTIVES:
   Upon completion of this course, the student should be able to:

   A. Prepare for installation requirements
   B. Install Windows
   C. Configure devices and device drivers
   D. Perform post-installation configuration
   E. Implement Windows in an enterprise environment
   F. Configure networking
   G. Configure storage
   H. Configure data access and usage
   I. Implement apps
   J. Configure remote management
   K. Configure updates
   L. Monitor Windows
   M. Configure system and data recovery
   N. Configure authorization and authentication
   O. Configure advanced management tools

V. CONTENT:
  A. Implement Windows (SLO)

  1. Prepare for installation requirements

      a. Determine hardware requirements and compatibility;

      b. Choose between an upgrade and a clean installation;

      c. Determine appropriate editions according to device type;

      d. Determine requirements for particular features, such as Hyper-V, Cortana, Miracast, Virtual Smart Cards, and
         Secure Boot;

      e. Determine and create appropriate installation media

  2. Install Windows

      a. Perform clean installations,

      b. Upgrade using Windows Update,

      c. Upgrade using installation media,

      d. Configure native boot scenarios,

      e. Migrate from previous versions of Windows,

      f. Install to virtual hard disk (VHD),

      g. Boot from VHD,

      h. Install on bootable USB,

      i. Install additional Windows features,

      j. Configure Windows for additional regional and language support

  3. Configure devices and device drivers

      a. Install, update, disable, and roll back drivers;

      b. Resolve driver issues;

      c. Configure driver settings, including signed and unsigned drivers;

      d. Manage driver packages;

      e. Download and import driver packages;

      f. Use the Deployment Image Servicing and Management (DISM) tool to add packages

  4. Perform post-installation configuration

      a. Configure and customize start menu, desktop, taskbar, and notification settings, according to device type;

      b. Configure accessibility options;

      c. Configure Cortana;

      d. Configure Microsoft Edge;

      e. Configure Internet Explorer;

      f. Configure Hyper-V;

      g. Configure power settings

  5. Implement Windows in an enterprise environment

      a. Provision with the Windows Imaging and Configuration Designer (ICD) tool;

      b. Implement Active Directory–based activation;

      c. Implement volume activation using a Key Management Service (KMS);

      d. Query and configure activation states using the command line;

      e. Configure Active Directory, including Group Policies;

      f. Configure and optimize user account control (UAC)

  B. Configure and support core services (SLO)

  1. Configure networking

      a. Configure and support IPv4 and IPv6 network settings;

      b. Configure name resolution;

      c. Connect to a network;

      d. Configure network locations;

      e. Configure Windows Firewall;

      f. Configure Windows Firewall with Advanced Security;

      g. Configure network discovery;

      h. Configure Wi-Fi settings;

i. Configure Wi-Fi Direct;

  j. Troubleshoot network issues;

  k. Configure VPN, such as app-triggered VPN, traffic filters, and lockdown VPN;

  l. Configure IPsec;

  m. Configure Direct Access

2. Configure storage

  a. Configure disks, volumes, and file system options using Disk Management and Windows PowerShell;

  b. Create and configure VHDs;

  c. Configure removable devices;

  d. Create and configure storage spaces;

  e. Troubleshoot storage and removable devices issues

3. Configure data access and usage

  a. Configure file and printer sharing and HomeGroup connections;

  b. Configure folder shares, public folders, and OneDrive;

  c. Configure file system permissions;

  d. Configure OneDrive usage;

  e. Troubleshoot data access and usage

4. Implement apps

  a. Configure desktop apps,

  b. Configure startup options,

  c. Configure Windows features,

  d. Configure Windows Store,

  e. Implement Windows Store apps,

  f. Implement Windows Store for Business,

  g. Provision packages, create packages,

  h. Use deployment tools,

  i. Use the Windows Assessment and Deployment Kit (ADK)

5. Configure remote management

  a. Choose the appropriate remote management tools;

  b. Configure remote management settings;

  c. Modify settings remotely by using the Microsoft Management Console (MMC) or Windows PowerShell;

  d. Configure Remote Assistance, including Easy Connect;

  e. Configure Remote Desktop; configure remote PowerShell

C. Manage and maintain Windows (SLO)

1. Configure updates

  a. Configure Windows Update options;

  b. Implement Insider Preview, Current Branch (CB), Current Branch for Business (CBB), and Long Term Servicing Branch (LTSB) scenarios;

  c. Manage update history;

  d. Roll back updates;

  e. Update Windows Store apps

2. Monitor Windows

  a. Configure and analyze Event Viewer logs,

  b. Configure event subscriptions,

  c. Monitor performance using Task Manager,

  d. Monitor performance using Resource Monitor,

  e. Monitor performance using Performance Monitor and Data Collector Sets,

  f. Monitor system resources,

  g. Monitor and manage printers,

  h. Configure indexing options,

  i. Manage client security by using Windows Defender,

  j. Evaluate system stability using Reliability Monitor,

  k. Troubleshoot performance issues

 3. Configure system and data recovery

  a. Configure a recovery drive,

  b. Configure a system restore,

  c. Perform a refresh or recycle,

  d. Perform a driver rollback,

  e. Configure restore points,

  f. Resolve hardware and device issues,

  g. Interpret data from Device Manager,

  h. Restore previous versions of files and folders,

  i. Configure File History,

  j. Recover files from OneDrive,

  k. Use Windows Backup and Restore,

  l. Perform a backup and restore with WBAdmin,

  m. Perform recovery operations using Windows Recovery

 4. Configure authorization and authentication

  a. Configure Microsoft Passport,

  b. Configure picture passwords and biometrics,

  c. Configure workgroups,

  d. Configure domain settings,

  e. Configure HomeGroup settings,

  f. Configure Credential Manager,

  g. Configure local accounts,

  h. Configure Microsoft accounts,

  i. Configure Device Registration,

  j. Configure Windows Hello,

  k. Configure Device Guard,

  l. Configure Credential Guard,

  m. Configure Device Health Attestation,

  n. Configure UAC behavior

 5. Configure advanced management tools

  a. Configure services,

  b. Configure Device Manager,

  c. Configure and use the MMC,

  d. Configure Task Scheduler,

  e. Configure automation of management tasks using Windows PowerShell

VI. METHODS OF INSTRUCTION:
  A. **Lecture** -
  B. **Discussion** -
  C. Collaborative Learning
  D. **Lab** - Laboratory assignments
  E. Internet assignments

VII. TYPICAL ASSIGNMENTS:
  A. Install Windows 10 as a Virtual Machine
   1. Create four users with limited permissions
   2. Create two groups and add above users as members
  B. Do e-Lab: Create a new domain controller computer
   1. Add two workstations to the domain you created

VIII. EVALUATION:
  A. **Methods**

   1. Exams/Tests
   2. Quizzes
   3. Projects
   4. Class Participation

     5. Lab Activities
  B. **Frequency**
     1. Chapter practice quizzes, one mid-term and one final examination
     2. Weekly hands-on lab activity computer projects covering common operating system functions from the text book and from instructor handouts.
     3. Weekly attendance and/or participation.
     4. One project that will engage students in appling the concepts in class.

IX. TYPICAL TEXTS:
     1. Microsoft Official Academic Course. *70-698 Installing and Configuring Windows 10.*, Microsoft Official Academic Course, 2016.
     2. Microsoft Official Academic Course. *Microsoft Virtual Labs.*, Wiley Higher Education, 2016.
     3. Panek, William. *MCSA Windows 10 Study Guide: Exam 70-698.* 1 ed., Sybex, 2017.
     4. Berrany, Andrew, and Andrew Warren. *Exam Ref 70-698 Installing and Configuring Windows 10.* 1 ed., Microsoft Press, 2016.
     5. Virtual lab account
     6. Bland CD, DVD or USB to store class materials

X. OTHER MATERIALS REQUIRED OF STUDENTS: