Network Troubleshooting and Support (ITNW 2335)

Credit: 3 semester credit hours (2 hours lecture, 4 hours lab)

Prerequisite/Co-requisite: None

Course Description

Troubleshoot and support networks with emphasis on solving real world problems in a hands-on environment. Topics include troubleshooting and research techniques, available resources, and network management hard/software.

Required Textbook and Materials

1. *Exam 70-688 Managing and Maintaining Windows 8* by Microsoft Official Academic Course, Wiley, 2013.

    a. ISBN number for print book is 978-1-118-59193-2

    b. ISBN number for CourseSmart E-book is 978-1-118-69277-6

    c. ISBN for lab manual E-book is 978-1-118-59199-4

2. Computer Networking and Troubleshooting Technology students are required to have one portable external Hard Drive with a capacity of 500GB or larger to be used for the duration of the time to complete their respective degree.

Course Objectives

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

1. Utilize research tools to assist in network support

2. Create or revise documentation of network physical layouts, software installations, licensing, and network operation logs

3. Demonstrate capability to identify and resolve network problems

Course Outline

A. Designing an Operating System Installation Strategy
   1. Creating a Windows To Go Workspace
   2. Virtualizing Operating Systems
   3. Configuring a Native VHD Boot File
   4. Configuring a Multi-Boot System
   5. Upgrading Versus Migrating to Windows 8

B. Designing an Application Strategy for Desktop Applications
   1. Working with Client Hyper-V

   2. Exploring Remote Desktop Services
   3. Working with the Application Compatibility Tool (ACT) Kit
   4. Virtualizing Application Using App-V
   5. Managing Application Updates
   6. Protecting Your System with Smartscreen
   7. Customizing Internet Explorer 10 Using IEAK 10

C. Designing an Application Strategy for Cloud Applications

Approved 1/2014

1. Working with Windows Store Applications
2. Restricting Access to the Windows Store Using Group Policy
3. Using AppLocker to Manage Applications
4. Using Microsoft Office 365
5. Using Skydrive to Manage Files/Folders

D. Designing a Solution for User Settings
1. Managing User Accounts
2. Deploying User Profiles
3. Virtualizing the User Experience

E. Designing for Network Connectivity
1. Designing for Network Connectivity

F. Designing for Remote Access
1. Providing Off-Network Use and Management
2. Exploring Virtual Private Networks
3. Exploring Remote Access Using Direct Access and Routing and Remote Access (RRAS)
4. Using Connection Manager and the Connection Manager Administration Kit (CMAK)
5. Using the Getting Started Wizard in Windows 8
6. Managing VPN Clients Using Windows PowerShell
7. Performing Remote Administration
8. Exploring Metered Networks

G. Designing for Authentication and Authorization
1. Designing for Authentication and Authorization

H. Managing Data Storage
1. Resolving Data Storage Issues
2. Managing Storage Pools and Storage Spaces
3. Managing Data Availability and Using BranchCache

I. Managing Data Security
1. Managing Share Permissions and NTFS Security on Storage Spaces
2. Configuring The Encrypting File System (EFS)
3. Configuring Security for Removable Media

4. Managing BitLocker and BitLocker To Go

J. Managing Hardware and Printers
1. Resolving Hardware and Device Issues
2. Synchronizing Devices and Resolving Synch Issues
3. Monitoring and Managing Print Servers

K. Managing Mobile Devices
1. Managing Mobile Access to your Network
2. Exploring Exchange active Sync/Mobile Device Policies in Exchange Server
3. Exploring System Center Configuration Manager (SCCM) 2012 Mobile Device Management
4. Managing Mobile Device Policies
5. Resolving Mobility Issues

L. Designing s Recovery Solution
1. Designing a Recovery Solution
2. Using PC Refresh, Reset, and recimg.exe
3. Scheduling a Windows 7 File Recovery
4. Creating a Windows 8 File Recovery Drive
5. Performing a System Restore
6. Using File History to Recover User Files/Local Files
7. Exploring Third-Party Tools/Cloud Backup
8. Recovering User Profile Settings
9. Recovering Application Settings

M. Managing Endpoint Security
1. Managing Endpoint Security
2. Managing Updates Using Windows Update
3. Managing Windows Server Update Services (WSUS) 4.0 Using Windows Server 2012
4. Managing Client Security Using Windows Defender
5. Managing Client Security Using SCCM Endpoint Protection Client
6. Configuring Application Reputation
7. Resolving Endpoint Security Issues

N. Managing Clients by Using Windows Intune
1. Introducing Windows Intune
2. Exploring Windows Intune Configurations and Requirements
3. Managing Updates and Update Groups
4. Configuring the Company Portal
5. Monitoring On-Network and Off-Network Machines
6. Managing Asset Inventory In Windows Intune

O. Managing Public Cloud
1. Introducing Public Cloud Services
2. Managing Windows Live Services
3. Implementing Office 2013 Using Office 365
4. Managing Office 365

P. Managing and Maintaining Clients by Using MDOP
1. Remediating Startup Issues Using Dart 8
2. Monitoring Clients Using Desktop Error Monitoring
3. Managing the App-V Client
4. Managing BitLocker and BitLocker To Go Using MBAM

Grade Scale

90 – 100	A
80 – 89	B
70 – 79	C
60 – 69	D
0 – 59	F

Course Evaluation

Final grades will be calculated according to the following criteria:

1. Labs	30%
2. Study Guides	10%
3. Module Tests	30%
4. Final Exam	30%

Course Requirements

1. Demonstrate proficiency through hands-on labs as assigned.

2. Complete Study Guides and work sheets as assigned

Course Policies

1. No food, drinks, or use of tobacco products in class.

2. Beepers, telephones, headphones, and any other electronic devices must be turned off while in class.

3. Do not bring children to class.

4. No late assignments will be accepted.

5. Certification. If s student passes the certification test that is associated with this class you will receive an "A" on the final exam and credit for 25% of your labs. If you have missed a previous test you must still take the final exam to substitute for that grade.

6. Attendance Policy. Three absences are allowed. If a student is tardy to class or departs early three (3) times, it will be equal to one (1) absence. Each absence beyond three absences will result in a 2 point deduction from your final grade.

7. If you wish to drop a course, the student is responsible for initiating and completing the drop process. If you stop coming to class and fail to drop the course, you will earn an 'F' in the course.

8. Labs. Due dates will be announced by the instructor.

9. Tools. Return all tools and/or software to their designated place.

10. A grade of 'C' or better must be earned in this course for credit toward degree requirement.

11. Additional class policies as defined by the individual course instructor.

Disabilities Statement

The Americans with Disabilities Act of 1992 and Section 504 of the Rehabilitation Act of 1973 are federal anti-discrimination statutes that provide comprehensive civil rights for persons with disabilities. Among other things, these statutes require that all students with documented disabilities be guaranteed a learning environment that provides for reasonable accommodations for their disabilities. If you believe you have a disability requiring an accommodation, please contact the Special Populations Coordinator at (409) 880-1737 or visit the office in Student Services, Cecil Beeson Building.

Course Schedule

Week of	Topic	Reference
Week 1	Course introduction and policies	
	Chapter 1: Designing an Operating System Installation Strategy	pp. 1-36
Week 2	Chapter 2: Designing an Application Strategy for Desktop Applications	pp. 37-60
Week 3	Chapter 3: Designing an Application Strategy for Cloud Applications	pp. 61-87
Week 4	Chapter 4: Designing a Solution for User Settings	pp. 81-102
	Exam Chapters 1-4	
Week 5	Chapter 5: Designing for Network Connectivity	pp. 113-143
	Chapter 6: Designing for Remote Access	pp. 144-182
Week6	Chapter 7: Designing for Authentication and Authorization	pp. 183-199
	Chapter 8: Managing Data Storage	pp. 200-218
Week 7	Chapter 9: Managing Data Security	pp. 219-241
	Exam Chapters 5-8	

Week of	Topic	Reference
Week 8	Chapter 10: Managing Hardware and Printers	pp. 242-265
Week 9	Chapter 11: Managing Mobile Devices	pp. 266-288
Week 10	Chapter 12: Designing a Recovery Solution	pp. 289-313
Week 11	Chapter 13: Managing Endpoint Security Exam Chapters 9-12	pp. 314-350
Week 12	Chapter 14: Managing Clients by Using Windows Intune	pp. 351-388
Week 13	Chapter 15: Managing Public Cloud Services	pp. 389-408
Week 14	Chapter 16: Managing and Maintaining Clients by Using MDOP	pp. 409-439
Week 15	Review Chapters 13-16	
Week 16	Final Exam	

Contact Information:

Program Director:	Lauri Arnold Program Director Computer Networking and Troubleshooting Technology
Office:	Office 103C, TA-4
Telephone:	(409) 839-2050
E-mail:	lauri.arnold@lit.edu

Additional Course Policies

Additional policies may be determined by individual course instructors. These policies will be indicated in the syllabus that is issued at the start of the course.