

ITT Technical Institute

NT2730

Advanced Server Operating Systems

Onsite and Online Course

SYLLABUS

Credit hours: 3


Contact/Instructional hours: 40 (20 Theory Hours, 20 Lab Hours)

Prerequisite(s) and/or Corequisite(s):

Prerequisite: NT2670 Email and Web Services or equivalent

Course Description:

This course is an intensive study of the server operating system including installation, configuration, management, core infrastructure services, policies and permissions, and virtualization. This course examines the concepts found in the Microsoft Certified Professional Installing and Configuring Windows Server 2012 certification exam.



COURSE SUMMARY

COURSE DESCRIPTION

This course is an intensive study of the server operating system including installation, configuration, management, core infrastructure services, policies and permissions, and virtualization. This course examines the concepts found in the Microsoft Certified Professional Installing and Configuring Windows Server 2012 certification exam.

MAJOR INSTRUCTIONAL AREAS

1. Windows Server
2. Server Roles
3. File Storage
4. Active Directory
5. Hyper-V
6. Group Policy
7. Network Services
8. Security

COURSE LEARNING OBJECTIVES

By the end of this course, you should be able to:

1. Install and configure Windows server.
2. Configure server roles and features.
3. Implement file and storage solutions.
4. Implement virtualization.
5. Implement core network services.
6. Implement Active Directory Domain Services.
7. Implement policies, permissions, and protection solutions.

COURSE OUTLINE

MODULE 1: INTRODUCTION TO WINDOWS SERVER

COURSE LEARNING OBJECTIVES COVERED

- Install and configure Windows server.

TOPICS COVERED

- Server Roles and Role Migration
- Microsoft Windows Server 2012 R2 Hardware Requirements
- Windows Server 2012 R2 Installation
- Windows Server 2012 R2 Services Configuration
- Redundant Array of Independent Disks (RAID) Volumes
- Virtual Hard Disk Creation and Configuration
- Microsoft Windows PowerShell

MODULE LEARNING ACTIVITIES	GRADED	OUT-OF-CLASS TIME
Reading: ITT Tech Virtual Library> Basic Search> <i>MCSA Windows Server 2012 Complete Study Guide: Exam 70-410, Exam 70-411, Exam 70-412, Exam 70-417</i> , Chapter 1.	No	2 hr
Reading: ITT Tech Virtual Library> Basic Search> Browse> Browse by Format> Books> Books24x7> <i>Mastering Windows Server 2012 R2</i> , Chapters 1–3.	No	6 hr
Lesson: Study the lesson for this module.	No	1.5 hr
Lab 1: Complete the lab titled “Windows Server 2012 R2 Installation.”	Yes	N/A
Lab 2: Complete the lab titled “PowerShell Commands.”	Yes	N/A
Exam: Prepare for Exam 1.	No	3 hr

Total Out-Of-Class Activities: 12.5 Hours

MODULE 2: SERVER ROLES AND FEATURES

COURSE LEARNING OBJECTIVES COVERED

- Configure server roles and features.
- Implement file and storage solutions.

TOPICS COVERED

- Work Folders Creation and Configuration
- New Technology File System (NTFS) Permissions
- Printer Installation, Sharing, and Publishing
- WinRM Configuration
- Remote Management of Server Core Machines

MODULE LEARNING ACTIVITIES	GRADED	OUT-OF-CLASS TIME
Reading: ITT Tech Virtual Library> Basic Search> <i>MCSA Windows Server 2012 Complete Study Guide: Exam 70-410, Exam 70-411, Exam 70-412, Exam 70-417</i> , Chapter 4.	No	3 hr
Reading: ITT Tech Virtual Library> Basic Search> Browse> Browse by Format> Books> Books24x7> <i>Mastering Windows Server 2012 R2</i> , Chapters 13 and 16.	No	6 hr
Lesson: Study the lesson for this module.	No	2 hr
Lab 1: Complete the lab titled “Server Manager.”	Yes	N/A
Lab 2: Complete the lab titled “Access Control.”	Yes	N/A
Lab 3: Complete the lab titled “Printer Installation and Sharing.”	Yes	N/A
Exam: Take Exam 1.	Yes	N/A
Exam: Prepare for Exam 2.	No	3 hr

Total Out-Of-Class Activities: 14 Hours

MODULE 3: VIRTUAL MACHINES, STORAGE, AND NETWORKS

COURSE LEARNING OBJECTIVES COVERED

- Implement virtualization.

TOPICS COVERED

- Hyper-V
- Dynamic Memory
- Virtual Hard Disk Creation and Configuration
- Network Virtualization Using Hyper-V
- Media Access Control (MAC) Addresses and Network Isolation Configuration
- Virtual Network Adapter Configuration

MODULE LEARNING ACTIVITIES	GRADED	OUT-OF-CLASS TIME
Reading: ITT Tech Virtual Library> Basic Search> <i>MCSA Windows Server 2012 Complete Study Guide: Exam 70-410, Exam 70-411, Exam 70-412, Exam 70-417</i> , Chapter 8.	No	2 hr
Reading: ITT Tech Virtual Library> Basic Search> Browse> Browse by Format> Books> Books24x7> <i>Mastering Windows Server 2012 R2</i> , Chapters 27 and 28.	No	6 hr
Lesson: Study the lesson for this module.	No	2 hr
Discussion: Participate in the discussion titled “Memory Utilization in Virtual Machines.”	Yes	1 hr
Lab 1: Complete the lab titled “Virtual Hard Disk Creation and Configuration.”	Yes	N/A
Lab 2: Complete the lab titled “Virtual Network Creation and Configuration.”	Yes	N/A
Exam: Take Exam 2.	Yes	N/A
Exam: Prepare for Exam 3.	No	3 hr

Total Out-Of-Class Activities: 14 Hours

MODULE 4: NETWORK SERVICES

COURSE LEARNING OBJECTIVES COVERED

- Implement core network services.

TOPICS COVERED

- Concepts of TCP/IP
- IPv4 Addressing
- IPv6 Addressing
- Dynamic Host Configuration Protocol (DHCP) Server Installation and Configuration
- DHCP Scopes and Options
- Domain Name System (DNS) Installation in Windows Server 2012
- DNS Server Configuration

MODULE LEARNING ACTIVITIES	GRADED	OUT-OF-CLASS TIME
Reading: ITT Tech Virtual Library> Basic Search> <i>MCSA Windows Server 2012 Complete Study Guide: Exam 70-410, Exam 70-411, Exam 70-412, Exam 70-417</i> , Chapters 2 and 8.	No	5 hr
Reading: ITT Tech Virtual Library> Basic Search> Browse> Browse by Format> Books> Books24x7> <i>Mastering Windows Server 2012 R2</i> , Chapters 4 and 6.	No	5 hr
Lesson: Study the lesson for this module.	No	2 hr
Discussion: Participate in the discussion titled “IP Addressing.”	Yes	1 hr
Lab 1: Complete the lab titled “DHCP Server Configuration.”	Yes	N/A
Lab 2: Complete the lab titled “DNS Configuration.”	Yes	N/A
Exam: Take Exam 3.	Yes	N/A
Exam: Prepare for Exam 4.	No	4 hr

Total Out-Of-Class Activities: 17 Hours

MODULE 5: ACTIVE DIRECTORY

COURSE LEARNING OBJECTIVES COVERED

- Install and configure Windows server.
- Configure server roles and features.
- Implement file and storage solutions.
- Implement virtualization.
- Implement core network services.
- Implement Active Directory Domain Services.

TOPICS COVERED

- The Building Blocks of Active Directory
- Domain Controllers
- Forests and Domains
- User and Computer Accounts
- Organizational Units Creation and Management

MODULE LEARNING ACTIVITIES	GRADED	OUT-OF-CLASS TIME
Reading: ITT Tech Virtual Library> Basic Search> <i>MCSA Windows Server 2012 Complete Study Guide: Exam 70-410, Exam 70-411, Exam 70-412, Exam 70-417</i> , Chapters 3 and 5.	No	4 hr
Reading: ITT Tech Virtual Library> Basic Search> Browse> Browse by Format> Books> Books24x7> <i>Mastering Windows Server 2012 R2</i> , Chapters 7 and 8.	No	4 hr
Lesson: Study the lesson for this module.	No	2 hr
Discussion: Participate in the discussion titled “Operation Masters.”	Yes	1 hr
Lab 1: Complete the lab titled “Domain Controller Configuration.”	Yes	N/A
Lab 2: Complete the lab titled “Active Directory Domain Controller Management.”	Yes	N/A
Exam: Take Exam 4.	Yes	N/A
Final Exam: Prepare for the final exam.	No	5 hr

Total Out-Of-Class Activities: 16 Hours

MODULE 6: SECURITY POLICIES AND FIREWALL

COURSE LEARNING OBJECTIVES COVERED

- Install and configure Windows server.
- Configure server roles and features.
- Implement file and storage solutions.
- Implement virtualization.
- Implement core network services.
- Implement Active Directory Domain Services.
- Implement policies, permissions, and protection solutions.

TOPICS COVERED

- Group Policy
- Security Options
- User Rights
- Active Directory Services Audit
- Software Restriction Policies
- AppLocker Rules
- Windows Firewall

MODULE LEARNING ACTIVITIES	GRADE D	OUT-OF- CLASS TIME
Reading: ITT Tech Virtual Library> Basic Search> <i>MCSA Windows Server 2012 Complete Study Guide: Exam 70-410, Exam 70-411, Exam 70-412, Exam 70-417</i> , Chapters 6 and 7.	No	4 hr
Reading: ITT Tech Virtual Library> Basic Search> Browse> Browse by Format> Books> Books24x7> <i>Mastering Windows Server 2012 R2</i> , Chapter 9.	No	2 hr
Lesson: Study the lesson for this module.	No	2 hr
Lab: Complete the lab titled “Security Configuration.”	Yes	N/A
Final Exam: Take the final exam.	Yes	N/A

Total Out-Of-Class Activities: 8 Hours

EVALUATION AND GRADING

EVALUATION CRITERIA

The graded assignments will be evaluated using the following weighted categories:

CATEGORY	WEIGHT
Discussion	10%
Lab	30%
Exam	35%
Final Exam	25%
TOTAL	100%

GRADE CONVERSION

The final grades will be calculated from the percentages earned in the course, as follows:

GRADE	PERCENTAGE
A (4.0)	90–100%
B+ (3.5)	85–89%
B (3.0)	80–84%
C+ (2.5)	75–79%
C (2.0)	70–74%
D+ (1.5)	65–69%
D (1.0)	60–64%
F (0.0)	<60%

LEARNING MATERIALS AND REFERENCES

REQUIRED RESOURCES

OTHER ITEMS

- External USB hard disk drive to host the virtual machines specifically required for this program
- Microsoft Office
- VMware Player 5.2 (or later)
(https://my.vmware.com/web/vmware/free#desktop_end_user_computing/vmware_player/6_0)
- Microsoft Visio 2003 (or later)
- Microsoft Windows Server 2012 R2

Note: You can download Microsoft Visio and Microsoft Windows Server 2012 R2 from the DreamSpark website. Refer to the DreamSpark Installation Guide for download instructions.

RECOMMENDED RESOURCES

- ITT Tech Virtual Library (accessed via Student Portal | <https://studentportal.itt-tech.edu>)
 - Basic Search>
 - Panek, W. (2013). *MCSA Windows Server 2012 complete study guide: Exam 70-410, exam 70-411, exam 70-412, exam 70-417*. Hoboken, NJ: Sybex.
 - Basic Search> Browse> Browse by Format> Books> Books24x7>
 - Minasi, M. (2014). *Mastering Windows Server 2012 R2*. Indianapolis, IN: Sybex.

INSTRUCTIONAL METHODS AND TEACHING STRATEGIES

The curriculum employs a variety of instructional methods that support the course objectives while fostering higher cognitive skills. These methods are designed to encourage and engage you in the learning process in order to maximize learning opportunities. The instructional methods include but are not limited to lectures, collaborative learning options, use of technology, and hands-on activities.

To implement the above-mentioned instructional methods, this course uses several teaching strategies, such as labs and discussions based on real-life scenarios. Your progress will be regularly assessed through a variety of assessment tools including labs, discussions, exams, and a final exam.

OUT-OF-CLASS WORK

For purposes of defining an academic credit hour for Title IV funding purposes, ITT Technical Institute considers a quarter credit hour to be the equivalent of: (a) at least 10 clock hours of classroom activities and at least 20 clock hours of outside preparation; (b) at least 20 clock hours of laboratory activities; or (c) at least 30 clock hours of externship, practicum or clinical activities. ITT Technical Institute utilizes a “time-based option” for establishing out-of-class activities which would equate to two hours of out-of-class activities for every one hour of classroom time. The procedure for determining credit hours for Title IV funding purposes is to divide the total number of classroom, laboratory, externship, practicum and clinical hours by the conversion ratios specified above. A clock hour is 50 minutes.

A credit hour is an artificial measurement of the amount of learning that can occur in a program course based on a specified amount of time spent on class activities and student preparation during the program course. In conformity with commonly accepted practice in higher education, ITT Technical Institute has institutionally established and determined that credit hours awarded for coursework in this program course (including out-of-class assignments and learning activities described in the “Course Outline” section of this syllabus) are in accordance with the time-based option for awarding academic credit described in the immediately preceding paragraph.

ACADEMIC INTEGRITY

All students must comply with the policies that regulate all forms of academic dishonesty or academic misconduct. For more information on the academic honesty policies, refer to the Student Handbook and the School Catalog.

INSTRUCTOR DETAILS

Instructor Name	
Office Hours	
Contact Details	

(End of Syllabus)