Washington County Community College

Computer Technology

Course Syllabus

Course No: CTT-255

Course Title: Server Operating Systems

Semester:

Class Location:

Class Schedule:

Instructor:

Email:

Phone:

Office Location:

Office Hours:

# Textbooks:

Greg Tomsho, MCSA Guide to Installing and Configuring Windows Server 2012/R2, Exam 70-410. Cengage Learning, 2015, ISBN-13: 9781285868653.

**Pre-requisites:**

CTT140 and CTT150 passed with a C or better or permission of instructor.

# Course Description:

This course will introduce students to installation, support and troubleshooting of computer server operating systems. Students will focus on Microsoft Windows Server platforms. Other server platforms will also be reviewed.

# Course Objectives:

This coursegives you in-depth coverage of the 70-410 certification exam objectives and focuses on the skills you need to install and configure Windows Server 2012/R2. After you finish this course, you’ll have an in-depth knowledge of Windows Server 2012/R2, including installation, local and remote management, file and storage services, Active Directory, group policies, TCP/IP, networking services, and Hyper-V virtualization. Both the original release of Windows Server 2012 and the R2 release are covered.

# Instructional Methodologies:

This course will be taught in an open lab, lecture, question and answer format.

# Learning Outcomes

Upon completing of this course, students will be able to:

* Describe the role of a server operating system and compare the Windows server 2012/R2 editions.
* Describe Windows Server 2012/R2 core technologies including the NTFS file system, active directory, disk management, and networking.
* Describe server roles and new features in Windows Server 2012/R2.
* Discuss the details of planning a Windows Server 2012/R2 installation.
* Explain how to work with server roles in features and how to configure server modes.
* Understand how to manipulate servers remotely with new server features in server manager.
* Describe storage provisioning, including working with local and virtual disks and using disk partition and format options.
* Implement file and printer sharing.
* Secure access to files by using NTFS permissions and describe how permission inheritance works.
* Describe the role of a directory service in a network and explain how to install Active Directory. Describe Active Directory components, such as schema and Active Directory objects, and the Active Directory structure including forests, trees, and domains.
* Understand the core organizing object in Active Directory: organizational units.
* Describe how to manage user accounts, group accounts, and computer accounts.
* Describe the architecture of group policy and group policy objects (GPOs).
* Understand how group policy replication works and how to create and link GPOs.
* Understand group policy inheritance and precedents, including local GPOs.
* Configure the TCP/IP protocol and its components.
* Understand how to configure TCP/IP addresses and calculates subnet masks for IP V4 addresses.
* Understand IPv6 addresses and how to configure IPv6 autoconfiguration.
* Understand Domain Name System (DNS) and explain how to install DNS and create DNS zones.
* Describe the DHCP protocol and client address leasing process.
* Install and configure the DHCP server including scope configuration, DHCP reservations, and filters.
* Configure virtualization with Hyper-V.
* Create and configure virtual machines and virtual networks, including external, internal, and private virtual switches.
* Understand virtualization features such as checkpoints, dynamic memory, and types of virtual disks.

# Specific topic coverage includes:

* Introducing Windows Server 2012/R2
* Installing Windows Server 2012/R2
* Local and Remote Server Management
* Configuring Server Storage
* File and Printer Services
* Introducing Active Directory
* Managing OUs and Active Directory Accounts
* Configuring Group Policies
* Configuring TCP/IP
* Configuring DNS
* Configuring Dynamic Host Configuration Protocol
* Configuring Virtualization with Hyper-V

**Schedule**

Note: This schedule is subject to some changes/modifications per Instructor -- This offered as only a study guide. The pace of each class differs according to the instructional needs of the students in the class.

| **Unit** | **Topics** | **Chapter**  **Readings** | **Exams** |
| --- | --- | --- | --- |
| 1 | Introducing Windows Server 2012/R2 | Chapter 1 | None |
| 2 | Installing Windows Server 2012/R2 | Chapter 2 | None |
| 3 | Local and Remote Server Management | Chapter 3 | None |
| 4 | Configuring Server Storage | Chapter 4 | None |
| 5 | File and Printer Services | Chapter 5 | None |
| 6 | Introducing Active Directory | Chapter 6 | None |
|  | Review |  | Mid-term Exam |
| 7 | Managing OUs and Active Directory Accounts | Chapter 7 | None |
| 8 | Configuring Group Policies | Chapter 8 | None |
| 9 | Configuring TCP/IP | Chapter 9 | None |
| 10 | Configuring DNS | Chapter 10 | None |
| 11 | Configuring Dynamic Host Configuration Protocol | Chapter 11 | None |
| 12 | Configuring Virtualization with Hyper-V | Chapter 12 | None |
|  | Review |  | Final Exam |

# Grading:

Exams: Midterm – 20%, Final – 30%

Labs, Assessments & Homework: 40%

Attendance and Participation: 10%

# Elements of Success:

| **Element** | **Description** |
| --- | --- |
| Accountability | Those who are accountable stand by their words and actions, taking full responsibility for what they create and for what they contribute to the community. |
| Respect | Community members who respect themselves and others help to create a safe, yet open climate of learning. |
| Responsibility | Students who assume personal responsibility for their education will reach their goals. Responsible students also make contributions to their communities. |
| Critical Thinking | Instructor and students will strive to improve the critical thinking skills of analysis, synthesis, and evaluation. |
| Communication | Communicating effectively in oral and written forms through traditional and new media is a powerful tool for personal and career success. |
| Collaboration | Collaborative teamwork maximizes benefits to individuals and communities. When collaboration is expected, instructors will clearly indicate it. When collaboration is not identified as part of an assignment, students must demonstrate individual skills. |

# Late Assignments:

All assignments must be submitted on-time. No late assignments will be accepted once solutions have been made available to the class for review. The lowest “Labs, Assessments & Homework” grade for each student will be dropped.

# Attendance:

Please refer to the Student Handbook for the WCCC attendance policy. WCCC policy states a student may miss no more than 10% of class hours. Due to the 3 hour block classes for this course, students may not miss more than 1 and ½ sessions.

# Computer Acceptable Use Policy:

Please refer to the Student Handbook for the WCCC Computer Acceptable Use policy. Do not store personal information or classwork on the classroom workstations.

# Accessibility:

WCCC does not discriminate on the basis of disability in admissions to, access to, or operation of its programs, services, or activities. In accordance with Section 504 of the Rehabilitation Act of 1973 (CRF 34 Part 104) and Title II of the Americans with Disabilities Act (ADA) of 1990, WCCC is committed to helping qualified students with disabilities achieve their individual goals. Students with disabilities who may need academic accommodations should bring this to my attention. Also, please contact (Name), the Coordinator of Accessibility Services, at (Contact Info). The office of the Coordinator of Accessibility Services is located in the study center.

This workforce product was funded by a grant awarded by the U.S. Department of Labor’s Employment and Training Administration. The product was created by the grantee and does not necessarily reflect the official position of the U.S. Department of Labor. The Department of Labor makes no guarantees, warranties, or assurances of any kind, express or implied, with respect to such information, including any information on linked sites, and including, but not limited to accuracy of the information or its completeness, timeliness, usefulness, adequacy, continued availability or ownership.

[Creative Commons License](http://creativecommons.org/licenses/by/4.0/)  
Except where otherwise noted, this work by Washington County Community College is licensed under the [Creative Commons Attribution 4.0 International License](http://creativecommons.org/licenses/by/4.0/).