


Course Outline	
COMP6121 Server Technology (4)	
Effective Date 01 September 2016	Study Program Computer Science Revision 0

1. Course Description

This course educates students on the Windows Server 2012 R2 Installation, Configuration, Maintenance and Performance tuning

2. Graduate Competency

Each course in the study program contributes to the graduate competencies that are divided into employability and entrepreneurial skills and study program specific outcomes, in which students need to have demonstrated by the time they complete their course.

BINUS University employability and entrepreneurial skills consist of planning and organizing, problem solving and decision making, self management, team work, communication, and initiative and enterprise.

2.1. Employability and Entrepreneurial Skills

Aspect	Key Behaviour

2.2. Study Program Specific Outcomes

Study Program Specific Outcomes
Able to depict trend mobile technologies in the future
Able to construct a solution by applying current technologies

3. Topics

- Install Windows Server 2012 R2
- Configure Network Service
- Plan and Install Active Directory
- Configure Windows Server 2012 R2
- Administer Active Directory
- Manage GPOs
- Manage Security
- Configure TCP/IP
- Use Virtualization in Windows Server 2012
- Review 1
- Manage and Maintain Server
- Manage File Service
- Configure DNS
- Configure Routing and Remote Access
- Configure a Network Policy Server Infrastructure
- Configure and Manage Active Directory
- Configure and Manage Group Policy
- Configure and Manage High Availability
- Configure File and Storage Solutions
- Review 2

- Implement Business Continuity and Disaster Recovery
- Configure Advanced Network Services
- Configure the Active Directory Infrastructure
- Configure Access and Information Protection Solutions
- Review 3
- Review 4

4. Learning Outcomes

On successful completion of this course, student will be able to:

- LO 1: Explain Computer Network and Server Concept and Technique
- LO 2: Identify Services in a Server
- LO 3: Demonstrate Installing, Configuring, and Administering a Server

5. Teaching And Learning Strategies

In this course, the lecturers might deploy several teaching learning strategies, including Lecture, Problem Solving, and Presentation.

6. Textbooks and Other Resources

6.1 Textbooks

1. William Panek. (2015). *MCSA Windows Server 2012 R2 Complete Study Guide: Exams 70-410, 70-411, 70-412, and 70-417*. 02. Sybex. ISBN: 9781118859919.

The book in the first list is a must to have for each student.

6.2 Other Resources

1. <http://youtu.be/D9nwf8x944>
2. [http://technet.microsoft.com/en-us/library/jj574177\(v=ws.11\).aspx](http://technet.microsoft.com/en-us/library/jj574177(v=ws.11).aspx)
3. [http://technet.microsoft.com/en-us/library/hh801901\(v=ws.11\).aspx](http://technet.microsoft.com/en-us/library/hh801901(v=ws.11).aspx)
4. [http://technet.microsoft.com/en-us/library/cc753298\(v=ws.11\).aspx](http://technet.microsoft.com/en-us/library/cc753298(v=ws.11).aspx)
5. <http://technet.microsoft.com/en-us/library/dn761715.aspx>
6. [http://technet.microsoft.com/en-us/library/jj556313\(v=ws.11\).aspx](http://technet.microsoft.com/en-us/library/jj556313(v=ws.11).aspx)
7. [http://technet.microsoft.com/en-us/library/jj643306\(v=ws.11\).aspx](http://technet.microsoft.com/en-us/library/jj643306(v=ws.11).aspx)
8. [http://technet.microsoft.com/en-us/library/hh801901\(v=ws.11\).aspx](http://technet.microsoft.com/en-us/library/hh801901(v=ws.11).aspx)
9. [http://technet.microsoft.com/en-us/library/hh846766\(v=ws.11\).aspx](http://technet.microsoft.com/en-us/library/hh846766(v=ws.11).aspx)
10. [http://technet.microsoft.com/en-us/library/hh831701\(v=ws.11\).aspx](http://technet.microsoft.com/en-us/library/hh831701(v=ws.11).aspx)
11. <http://www.microsoftpressstore.com/articles/article.aspx?p=2216993>
12. [http://technet.microsoft.com/en-us/library/dn313100\(v=ws.11\).aspx](http://technet.microsoft.com/en-us/library/dn313100(v=ws.11).aspx)
13. [http://technet.microsoft.com/en-us/library/cc732054\(v=ws.10\).aspx](http://technet.microsoft.com/en-us/library/cc732054(v=ws.10).aspx)
14. [http://technet.microsoft.com/en-us/library/dn281793\(v=ws.11\).aspx](http://technet.microsoft.com/en-us/library/dn281793(v=ws.11).aspx)
15. [http://technet.microsoft.com/en-us/library/cc759186\(v=ws.10\).aspx](http://technet.microsoft.com/en-us/library/cc759186(v=ws.10).aspx)
16. [http://technet.microsoft.com/en-us/library/cc731673\(v=ws.10\).aspx](http://technet.microsoft.com/en-us/library/cc731673(v=ws.10).aspx)
17. [http://technet.microsoft.com/en-us/library/hh831410\(v=ws.11\).aspx](http://technet.microsoft.com/en-us/library/hh831410(v=ws.11).aspx)
18. [http://technet.microsoft.com/en-us/library/cc732284\(v=ws.11\).aspx](http://technet.microsoft.com/en-us/library/cc732284(v=ws.11).aspx)
19. <http://technet.microsoft.com/library/hh801901.aspx>
20. [http://technet.microsoft.com/en-us/library/dd560651\(v=ws.10\).aspx](http://technet.microsoft.com/en-us/library/dd560651(v=ws.10).aspx)
21. [https://http://technet.microsoft.com/en-us/library/hh801901\(v=ws.11\).aspx](https://http://technet.microsoft.com/en-us/library/hh801901(v=ws.11).aspx)
22. [http://technet.microsoft.com/en-us/library/cc770654\(v=ws.10\).aspx](http://technet.microsoft.com/en-us/library/cc770654(v=ws.10).aspx)
23. [http://technet.microsoft.com/en-us/library/cc816889\(v=ws.10\).aspx](http://technet.microsoft.com/en-us/library/cc816889(v=ws.10).aspx)
24. [http://technet.microsoft.com/en-us/library/hh831360\(v=ws.11\).aspx](http://technet.microsoft.com/en-us/library/hh831360(v=ws.11).aspx)
25. [http://technet.microsoft.com/en-us/library/hh831669\(v=ws.11\).aspx](http://technet.microsoft.com/en-us/library/hh831669(v=ws.11).aspx)
26. [http://technet.microsoft.com/en-us/library/hh831791\(v=ws.11\).aspx](http://technet.microsoft.com/en-us/library/hh831791(v=ws.11).aspx)

7. Schedule

Theory

Session/ Mode	Related LO	Topics	References
1 F2F	LO 1 LO 2 LO 3	Install Windows Server 2012 R2 - Features and Advantages of Windows Server 2012 and Server 2012 R2 - Planning the Windows Server 2012 R2	- Windows Server 2012 R2 Installation - MCSA Windows Server 2012 R2 Complete Study Guide:

		Installation - Understanding Features On Demand - Storage in Windows Server 2012 R2 - Summary	Exams 70-410, 70-411, 70-412, and 70-417, Chapter 1 - Microsoft Windows Server 2012 :: 70-410 :: 01 Installing and Configuration, http://youtu.be/D9nwf8x944
2 F2F	LO 1 LO 3	Configure Network Service - Introducing DNS - Introducing DNS Database Zones - Advantages of DNS in Windows Server 2012 R2 - Introducing DNS Record Types - Configuring DNS - Monitoring and Troubleshooting DNS - Overview of DHCP - Installing and Authorizing DHCP - Creating and Managing DHCP Scopes - Summary	- Configure Network Service - MCSA Windows Server 2012 R2 Complete Study Guide: Exams 70-410, 70-411, 70-412, and 70-417, Chapter 2 - Configure Network Services and Access, http://www.microsoftpressstore.com/articles/article.aspx?p=2216993
3 F2F	LO 2 LO 3	Plan and Install Active Directory - Verifying the File system - Verifying Network Connectivity - Understanding Domain and Forest Functionality - Planning the Domain Structure - Installing Active Directory - Verifying Active Directory Installation - Creating and Configuring Application Data Partitions - Configuring DNS Integration with Active Directory - Summary	- Plan and Install Active Directory - MCSA Windows Server 2012 R2 Complete Study Guide: Exams 70-410, 70-411, 70-412, and 70-417, Chapter 3 - Installing AD DS from Media, http://technet.microsoft.com/en-us/library/cc770654(v=ws.10).aspx
4 F2F	LO 1 LO 3	Configure Windows Server 2012 R2 - Understanding File Servers - Configuring File Servers - Configuring Disk Quotas - Configuring Print Services - Configuring Remote Management - Summary	- Configure Windows Server 2012 R2 - MCSA Windows Server 2012 R2 Complete Study Guide: Exams 70-410, 70-411, 70-412, and 70-417, - Install and Configure Windows Server 2012 R2, http://technet.microsoft.com/en-us/library/dn281793(v=ws.11).aspx
5 F2F	LO 1 LO 3	Administer Active Directory - An Overview of OUs - Planning the OU Structure - Creating OUs - Managing OUs - Troubleshooting OUs - Creating and Managing Active Directory Objects - Publishing Active Directory Objects - Using the Command Prompt for Active Directory Configuration - Summary	- Administer Active Directory - MCSA Windows Server 2012 R2 Complete Study Guide: Exams 70-410, 70-411, 70-412, and 70-417, Chapter 5 - Active Directory Administrative Center: Getting Started, http://technet.microsoft.com/en-us/library/dd560651(v=ws.10).aspx
6 F2F	LO 1 LO 3	Manage GPOs - Introducing Group Policy - Planning a Group Policy Strategy - Implementing Group Policy - Managing Group Policy - Deploying Software Through a GPO	- Manage Group Policies - MCSA Windows Server 2012 R2 Complete Study Guide: Exams 70-410, 70-411, 70-412, and 70-417, Chapter 6 - Group Policy Management

		<ul style="list-style-type: none"> - Implementing Software Deployment - Configuring Software Deployment Settings - Troubleshooting Group Policies - Summary 	Console, http://technet.microsoft.com/en-us/library/cc753298(v=ws.11).aspx
7 GSLC	LO 1 LO 2 LO 3	Manage Security <ul style="list-style-type: none"> - Managing Security - Implementing an Audit Policy - Configuring Windows Firewall Options - Summary 	<ul style="list-style-type: none"> - Manage Security - MCSA Windows Server 2012 R2 Complete Study Guide: Exams 70-410, 70-411, 70-412, and 70-417, Chapter 7 - Secure Windows Server 2012 R2 and Windows Server 2012, http://technet.microsoft.com/en-us/library/hh831360(v=ws.11).aspx
8 GSLC	LO 1 LO 3	Configure TCP/IP <ul style="list-style-type: none"> - Understanding TCP/IP - Understanding IP Addressing - Subnetting a Network - Understanding IPv6 - Summary 	<ul style="list-style-type: none"> - Configure TCP/IP - MCSA Windows Server 2012 R2 Complete Study Guide: Exams 70-410, 70-411, 70-412, and 70-417, Chapter 8 - Configure TCP/IP settings, http://technet.microsoft.com/en-us/library/cc731673(v=ws.10).aspx
9 F2F	LO 1 LO 2 LO 3	Use Virtualization in Windows Server 2012 <ul style="list-style-type: none"> - Hyper-V Overview - Hyper-V Installation and Configuration - Configuring Virtual Machines - Summary 	<ul style="list-style-type: none"> - Use Virtualization in Windows Server 2012 - MCSA Windows Server 2012 R2 Complete Study Guide: Exams 70-410, 70-411, 70-412, and 70-417, Chapter 9 - Install Hyper-V and create a virtual machine, http://technet.microsoft.com/en-us/library/hh846766(v=ws.11).aspx
10 F2F	LO 1 LO 2 LO 3	Review 1 <ul style="list-style-type: none"> - Review 	<ul style="list-style-type: none"> - Review - MCSA Windows Server 2012 R2 Complete Study Guide: Exams 70-410, 70-411, 70-412, and 70-417, Chapter 1-9 - Windows Server 2012 R2 and Windows Server 2012 Technical Library, http://technet.microsoft.com/library/hh801901.aspx
11 F2F	LO 2 LO 3	Manage and Maintain Server <ul style="list-style-type: none"> - Using Windows Deployment Services - Configuring Windows Server Update Services - Overview of Windows Server 2012 R2 - Using Windows Server 2012 R2 Performance Tools - Summary 	<ul style="list-style-type: none"> - Manage and Maintain Server - MCSA Windows Server 2012 R2 Complete Study Guide: Exams 70-410, 70-411, 70-412, and 70-417, Chapter 10 - Server Roles and Technologies in Windows Server 2012 R2 and Windows Server 2012, http://technet.microsoft.com/

			en-us/library/hh831669(v=ws.11).aspx
12 F2F	LO 2 LO 3	<p>Manage File Service</p> <ul style="list-style-type: none"> - Configuring File Server Resource Manager - Configure File and Disk Encryption - Configuring Distributed File System - Implementing an Audit Policy - Making Active Directory Objects Available to Users 	<ul style="list-style-type: none"> - Manage File Server - MCSA Windows Server 2012 R2 Complete Study Guide: Exams 70-410, 70-411, 70-412, and 70-417, Chapter 11 - File Server Resource Manager Overview, http://technet.microsoft.com/en-us/library/hh831701(v=ws.11).aspx
13 F2F	LO 1 LO 3	<p>Configure DNS</p> <ul style="list-style-type: none"> - Introducing DNS - Introducing DNS Database Zones - Advantages of DNS in Windows Server 2012 R2 - Introducing DNS Record Types - Configuring DNS - Monitoring and Troubleshooting DNS - Summary 	<ul style="list-style-type: none"> - Configure DNS - MCSA Windows Server 2012 R2 Complete Study Guide: Exams 70-410, 70-411, 70-412, and 70-417, Chapter 11 - Configure a DNS Server for Use with Active Directory Domain Services, http://technet.microsoft.com/en-us/library/cc732284(v=ws.11).aspx
14 F2F	LO 1 LO 3	<p>Configure Routing and Remote Access</p> <ul style="list-style-type: none"> - Overview of Dial-Up Networking - Overview of Virtual Private Networks - Configuring Your Remote Access Server - Understanding a VPN - Configuring a VPN - Managing Your Remote Access Server - Configuring a VPN Client - Configuring a Web Application Proxy - Understanding DirectAccess - Summary 	<ul style="list-style-type: none"> - Configure Routing and Remote Access - MCSA Windows Server 2012 R2 Complete Study Guide: Exams 70-410, 70-411, 70-412, and 70-417, Chapter 13 - Step 2: Configure the Remote Access Server, http://technet.microsoft.com/en-us/library/jj574177(v=ws.11).aspx
15 F2F	LO 1 LO 3	<p>Configure a Network Policy Server Infrastructure</p> <ul style="list-style-type: none"> - Overview of Wireless Access - Remote Access Security - Configuring User Access - Configuring Security - Summary 	<ul style="list-style-type: none"> - Configure a Network Policy Server Infrastructure - MCSA Windows Server 2012 R2 Complete Study Guide: Exams 70-410, 70-411, 70-412, and 70-417, Chapter 14 - Network Policy Server Infrastructure, http://technet.microsoft.com/en-us/library/cc732054(v=ws.10).aspx
16 F2F	LO 1 LO 3	<p>Configure and Manage Active Directory</p> <ul style="list-style-type: none"> - Active Directory Security Overview - Implementing Active Directory Security - Using Group Policy for Security - Managing Multiple Domains - Maintain Active Directory - Summary 	<ul style="list-style-type: none"> - Configure and Manage Active Directory - MCSA Windows Server 2012 R2 Complete Study Guide: Exams 70-410, 70-411, 70-412, and 70-417, Chapter 15 - Introduction to Administering Active Directory Domain Services, http://technet.microsoft.com/

			en-us/library/cc816889(v=ws.10).aspx
17 GSLC	LO 1 LO 3	Configure and Manage Group Policy <ul style="list-style-type: none"> - Introducing Group Policy Objects - Planning a Group Policy Strategy - Implementing Group Policy - Managing Group Policy - Deploying Software Through a GPO - Implementing Software Deployment - Configuring Software Deployment Settings - Troubleshooting Group Policies - Summary 	<ul style="list-style-type: none"> - Configure and Manage Group Policy - MCSA Windows Server 2012 R2 Complete Study Guide: Exams 70-410, 70-411, 70-412, and 70-417, Chapter 16 - Group Policy Overview, http://technet.microsoft.com/en-us/library/hh831791(v=ws.11).aspx
18 GSLC	LO 1 LO 3	Configure and Manage High Availability <ul style="list-style-type: none"> - Components of High Availability - Achieving High Availability - Configure Network Load Balancing - Achieving High Availability with Failover Clustering - Windows Server 2012 R2 Clustering Features - Summary 	<ul style="list-style-type: none"> - Configure and Manage High Availability - MCSA Windows Server 2012 R2 Complete Study Guide: Exams 70-410, 70-411, 70-412, and 70-417, Chapter 17 - Install and Configure High Availability Printing, http://technet.microsoft.com/en-us/library/jj556313(v=ws.11).aspx
19 F2F	LO 2 LO 3	Configure File and Storage Solutions <ul style="list-style-type: none"> - Configure Advanced File Services - Implement Dynamic Access Control - Configure and Optimize Storage - Summary 	<ul style="list-style-type: none"> - Configure File and Storage Solution - MCSA Windows Server 2012 R2 Complete Study Guide: Exams 70-410, 70-411, 70-412, and 70-417, Chapter 18 - Windows Storage Server 2012: Planning and Deployment, http://technet.microsoft.com/en-us/library/jj643306(v=ws.11).aspx
20 F2F	LO 1 LO 2 LO 3	Review 2 <ul style="list-style-type: none"> - Review 	<ul style="list-style-type: none"> - Review - MCSA Windows Server 2012 R2 Complete Study Guide: Exams 70-410, 70-411, 70-412, and 70-417, Chapter 10-16 - Windows Server 2012 R2 and Windows Server 2012 Technical Library, https://http://technet.microsoft.com/en-us/library/hh801901(v=ws.11).aspx
21 GSLC	LO 2 LO 3	Implement Business Continuity and Disaster Recovery <ul style="list-style-type: none"> - Protecting the System - Backup and Recovery of Active Directory - Understanding Shadow Copies - Using Advanced Boot Options - Configure Site-Level Fault Tolerance - Using the Startup Repair Tool 	<ul style="list-style-type: none"> - Implement Business Continuity and Disaster Recovery - MCSA Windows Server 2012 R2 Complete Study Guide: Exams 70-410, 70-411, 70-412, and 70-417, Chapter 19 - What's New in Hyper-V for

		- Summary	Windows Server 2012, http://technet.microsoft.com/en-us/library/hh831410(v=ws.11).aspx
22 GSLC	LO 3	Configure Advanced Network Services - Working with Advanced DHCP Configuration Options - The Ins and Outs of DNS - IPAM Administration 101 - Summary	- Configure Advanced Network Services - MCSA Windows Server 2012 R2 Complete Study Guide: Exams 70-410, 70-411, 70-412, and 70-417, Chapter 20 - What's New in Networking, http://technet.microsoft.com/en-us/library/dn313100(v=ws.11).aspx
23 F2F	LO 1 LO 2 LO 3	Configure the Active Directory Infrastructure - Overview of Network Planning - Overview of Active Directory - Implementing Sites and Subnets - Configuring Replication - Monitoring and Troubleshooting Active Directory Replication - Reasons for Creating Multiple Domains - Creating Domain Trees and Forests - Demoting a Domain Controller - Managing Multiple Domains - Summary	- Configure the Active Directory Structure - MCSA Windows Server 2012 R2 Complete Study Guide: Exams 70-410, 70-411, 70-412, and 70-417, Chapter 21 - Active Directory Structure and Storage Technologies, http://technet.microsoft.com/en-us/library/cc759186(v=ws.10).aspx
24 F2F	LO 2 LO 3	Configure Access and Information Protection Solutions - What's New in Windows Server 2012 R2 with Active Directory Certificate Services? - Implement Active Directory Federation Services - Workplace Join - Active Directory Rights Management Services - Summary	- Configure Access and Information Protection Solutions - MCSA Windows Server 2012 R2 Complete Study Guide: Exams 70-410, 70-411, 70-412, and 70-417, Chapter 21 - Access and Information Protection, http://technet.microsoft.com/en-us/library/dn761715.aspx
25 F2F	LO 1 LO 2 LO 3	Review 3 - Review	- Review - MCSA Windows Server 2012 R2 Complete Study Guide: Exams 70-410, 70-411, 70-412, and 70-417, - Windows Server 2012 R2 and Windows Server 2012, http://technet.microsoft.com/en-us/library/hh801901(v=ws.11).aspx
26 F2F	LO 1 LO 2 LO 3	Review 4 - Review	- Review - MCSA Windows Server 2012 R2 Complete Study Guide: Exams 70-410, 70-411, 70-412, and 70-417, - Windows Server 2012 R2 and Windows Server 2012, http://technet.microsoft.com/en-us/library/hh801901(v=ws.11).aspx

).aspx
--	--	--	--------

8. Evaluation

Theory

Assessment Activity	Weight	Learning Outcomes		
		1	2	3
Assignment	20%	√	√	√
Mid Exam	30%	√	√	√
Final Exam	50%	√	√	√

Practicum

-





Final Evaluation Score

Aspects	Weight
Theory	100%
Practicum	0%



9. A. Assessment Rubric (Study Program Specific Outcomes)

LO	Indicators	Proficiency Level			
		Excellent (85 – 100)	Good (75 – 84)	Average (65 – 74)	Poor (<= 64)
LO 1	1.1. Ability to explain computer network	The concept of computer network is explained clearly and completely	The concept of computer network is explained competently	The concept of computer network is not complete	The concept of computer network is inadequate and not in logical consistency
	1.2. Ability to explain server concept	The concept is explained clearly and completely	The concept is explained competently	The concept is not explained completely	The concept is inadequate and not in logical consistency
LO 2	2.1. Ability to identify services	The services are completely identify correctly	The services identified miss max two services	The services identified miss a few services	The services identified miss a most services
	2.2. Ability to identify server components	The server components are completely identify correctly	The server components identified miss max two components	The server components identified miss a few components	The server components identified miss a most components
LO 3	3.1. Ability to demonstrate server installation and configuration.	The installation and configuration are completely correct	The installation and configuration have two minor error maximum	The installation and configuration have few minor error or two major error maximum	The installation and configuration have more than two major error maximum
	3.2. Ability to demonstrate server administration.	The administratio n is completely correct.	The administratio n has two minor error maximum	The administratio n has a few minor error or two major error	The administratio n has more than two major error

<p>Prepared by</p>  <p>D3366 - Bayu Kanigoro, S.Kom., M.T.</p>	<p>Checked by</p>  <p>D3366 - Bayu Kanigoro, S.Kom., M.T. Acting as Subject Content Specialist</p>
<p>Approved by</p>  <p>D3366 - Bayu Kanigoro, S.Kom., M.T. Concentration Content Coordinator</p>	<p>Acknowledged by</p>  <p>D2923 - Yen Lina Prasetio, S.Kom., M.Comp.Sc. Head of Program – Computer Science</p>

