Course Name : Server Maintenance							
Course Code	**Course Type**	**Regular Semester**	**Lecture (hours/week)**	**Seminar (hours/week)**	**Lab. (hours/week)**	**Credits**	**ECTS**
CMP 321	B	Fall	2.00	0.00	2.00	3.00	6.00

Lecturer	Elton Kaziu, Msc
Assistant	
Course language	Albanian
Course level	Bachelor
Description	With the help of lectures, lab work, and practice the student will gain the knowledge needed to plan, configure, use, and administer Windows Server systems. Basics for key knowledge of installation, management, "troubleshooting", as well as the use of basic services for Windows Server systems will be provided for the version of Windows Server 2019. In the second part of the course will be explained theoretically and practically, through virtual laboratories, migration to Windows Server 2019 version. Essential parts will be the new specifications of Windows Server 2019, as well as new work practices by new administrators. The finalization of the course will be the presentation of infrastructure and management innovations for the latest version; Windows Server 2019
Objectives	1. Installation and Configuration: Understand the process of installing and configuring Windows Server 2019, including selecting appropriate installation options, configuring hardware, and setting up necessary roles and features. 2. User and Group Management: Administer user accounts and groups effectively by creating, modifying, and managing user accounts, assigning appropriate permissions, and implementing security policies. 3. Active Directory Management: Manage Active Directory services, including domain controllers, organizational units (OUs), group policy objects (GPOs), and maintaining a healthy directory service environment. 4. File and Storage Management: Administer file systems and storage by configuring and managing disks, volumes, file sharing, and implementing storage solutions like Storage Spaces and iSCSI. 5. Networking: Manage network services and protocols, configure networking settings, implement DHCP, DNS, and manage network access, including firewalls and remote access services. 6. Server Maintenance and Monitoring: Perform regular maintenance tasks such as installing updates, monitoring system performance, managing backups, and ensuring system reliability and availability. 7. Security Implementation: Implement security measures to protect the server environment, including configuring firewalls, implementing encryption, managing certificates, and ensuring compliance with security best practices. 8. Virtualization and Hyper-V: Manage virtual machines using Hyper-V, including creating, configuring, and maintaining virtual machines, as well as implementing high availability and disaster recovery solutions. 9. Troubleshooting and Problem Resolution: Identify and resolve common issues related to server configurations, services, networking, and system performance to maintain optimal server functionality. 10. Automation and Scripting: Utilize PowerShell and other scripting tools to automate administrative tasks, streamline processes, and improve efficiency in server management.
Core Concepts	1. Installing Windows Server 2019. 2. Introduction to Server Roles. 3. Comparison of Physical Servers and Virtual Servers. 4. Selection of harware resources on the Server 5. Identify methods for installing Windows Server ... etc.

Course Outline

Week	Topic
1	1 Server overview • A brief history and general knowledge of the subject. • Explains the importance of servers in day-to-day operations and in the future.

2	2 Server room physical infrastructure • Elements of Physical Infrastructure
3	3 Manage Windows Server 2019 • Manage equipment and equipment drivers. • Manage services • Use the control panel
4	4 Storage space management • Identification of "storage" technologies • Access to Redundant Arrays for Independent Disks • Understand the structure of Disk
5	5 Monitoring and troubleshooting problems on the server • Understand performance • Use Event Viewer • Boot-up / System boot • Introduction to business continuity • Introduction to problem solving methodology.
6	6 Backup and recovery processes • Types of Backups • Backup Rotations • Shadow Copies • Pre-Boot Recovery Tools / Pre-Boot Recovery Utilities
7	7 Essential Services in Windows Server 2019 • See objects • Introduction to groups • Introduction to Introducing Domains, Trees and Forests, Organizational Units • Access to Directory services in Active Directory • Introduction to Group policies
8	8 Semi-final exam
9	9 File and printing services • Access to separate NTFS drivers and folders • An overview of printers • Activation of audit
10	10 Most Common Network Services in Windows and Applications • Web Server access • Understand remote access • Introduction to remote administration • Understand server virtualization
11	11 Understanding Active Directory • Introduction to AD
12	12 Services Directory AD / Active Directory Domain Services (AD DS) • Active Directory Domain Services (DS) / Services in AD domains
13	13 Active Directory Certificate Services (AD CS) • Active Directory Certificate Services (CS) / AD certificate services
14	14 Active Directory federated services (AD FS) • Active Directory Federation Services (FS) / AD federated services • Active Directory Rights Management Services (RMS) / AD service management rights • Active Directory Lightweight Directory Services (LDS) / Services directory "lightweight" AD
15	15 Scheduling and automation of works
16	Final Exam
Prerequisites	The student must attend the course at a minimum rate of 75%.
Literature	• Windows Server Administration Fundamentals Microsoft® Official Academic Course
References	• Bazat e Menaxhimit Windows Server 2019

Course Outcome

1	Në përfundim të këtij kursi studentët do të jenë në gjendje, për të planifikuar, konfiguruar, përdorur dhe administruar sistemet Windows Server.
2	Të instalojmë dhe mirmbajmë driverat e pajisjeve dhe shërbimet, gjithashtu praktikimi i aksesit në largesi / remote access.
3	Familjarizimi me teknologjitë "storage", të kuptojmë si funkisonojnë llojet e RAID. Të kuptojm llojet e disqeve.
4	Të arrijmë të monitorojmë performancën, të kuptojmë log-et dhe alertet. Të identifikojmë hapat në procesin e startup-it
5	Te kuptojmë shërbimet web, si dhe virtualizimin e Serverit
6	Të kuptojmë vazhdimësinë e biznesit. Të ndjekim metodologjinë e zgjidhjes së problemeve

Course Evaluation

In-term Studies	Quantity	Percentage
Midterms	1	30
Quizzes	0	0
Projects	0	0
Term Projects	1	20
Laboratory	0	0
Class Participation	1	10
Total in-term evaluation percent		**60**
Final exam percent		**40**
Total		**100**

ECTS Workload (Based on Student Workload)

Activities	Quantity	Duration (hours)	Total (hours)
Course duration (Including the exam week: 16x Total hours of the course)	16	4	64
Study hours outside the classroom (Preparation, Practice, etc.)	14	6	84
Duties	1	3	3
Midterms	1	2	2
Final Exam	1	3	3
Other	0	0	0
Total Work Load			**156**
Total Work Load / 25 (hours)			**6.24**
ECTS			**6.00**