

Windows System Administration

- 1. Course number and name:** 020ADWES4/020WSAES4 Windows System Administration
- 2. Credits and contact hours:** 4 ECTS credits, 2x1:15 contact hours
- 3. Name of course coordinator:** Nathalie Aouad
- 4. Instructional materials:** Professor handouts, Lab and applied work exercises
- 5. Specific course information**
 - a. Catalog description:**

This course introduces the basic concepts involved in installing, configuring and administering Microsoft Windows Server 2016. The course defines some of the terms involved in systems administration, such as peer-to-peer, client/server, workgroup, and domain. The course also lists the major Operating System releases from Microsoft and lays out the differences between a client and a server operating system. The course focuses on the hardware requirements needed to install Microsoft Windows Server 2016 and then goes through the installation process. It then explains DHCP and DNS operation and how to install and configure a DHCP and a DNS Server. Finally, the course presents an introduction to Active Directory and explains how to enable this role on one or more servers in the network. Some of the basic tasks performed by the network administrator are presented, such as creating user and group accounts, assigning file and folder permissions and setting basic security policies.
 - b. Prerequisites:** None
 - c. Selected Elective for CCE students**
- 6. Educational objectives for the course**
 - a. Specific outcomes of instruction:**
 - Identify if a hardware platform is convenient to install Windows Server 2016
 - Choose the most adequate Windows Server installation method and type given a certain scenario
 - State the network services needed to install and configure Active Directory
 - Analyze the network state and troubleshoot some problems related to DHCP, DNS and Active Directory
 - Plan the creation of user and group accounts
 - Prepare a proper security policy to protect network resources

b. PI addressed by the course:

| PI | 1.1 | 1.2 | 1.3 | 2.3 | 5.1 | 7.1 |
|-----------------|-----|-----|-----|-----|-----|-----|
| Covered | x | x | x | x | | x |
| Assessed | x | x | | x | x | |

7. Brief list of topics to be covered:

- Network Models: Peer-to-peer, client/server, workgroup, domain (4 Lectures)
- Hardware requirements, 32-bit vs 64-bit architecture, CPU socket vs core, virtualization, history of Microsoft Windows releases, client vs server operating system (2 Lectures)
- Installing Windows Server 2016: Listing the different Windows Server 2016 Editions, choosing the proper installation method, installation type, using Server Core, Windows Licensing: per server, per seat, VM and CPU licenses (4 Lectures)
- DHCP: overview of DHCP, DHCP lease generation and renewal process, DHCP Relay Agent, DHCP Reservation, DHCP options, Installing and configuring DHCP (4 Lectures)
- DNS: FQDN, Name Resolution Process, Authoritative vs non-authoritative DNS Server, Recursive vs Iterative query, Primary vs Secondary zone, Active Directory Integrated zone, Forward vs Reverse lookup zone (4 Lectures)
- Active Directory: Forest, Tree, Domain structure, trust between Active Directory domains, Schema (2 Lectures)
- Practice: Installing Windows Server 2016, Configuring user and group accounts, configuring permissions, configuring local security policy, installing and configuring DHCP, installing and configuring DNS (6 Lectures)
- Student Projects Presentations (2 Lectures)