

<b>Program</b>	<b>09TT- Engineering in Telecommunication Technologies and Services</b>
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<b>Course number and name</b>	
<b>Number</b>	95000050
<b>Name</b>	Corporate Networks Redes Corporativas
<b>Semester</b>	Y4-S7

<b>Credits and contact hours</b>	
<b>ECTS Credits</b>	6
<b>Contact hours</b>	60

<b>Coordinator's name</b>	Ángel Fernández del Campo
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<b>Specific course information</b>
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**Description of course content**

The general objectives of the course are:

- Knowing the relevant architectures and protocols for the provision of communication services to corporate networks, the Network Service Providers applicable to them, and the use of Software Defined Networks (SDN).
- Knowing the modeling of QoS agreements (SLA / SLS) between service providers and enterprises.
- Knowing the tools for the analysis of availability, reliability and maintainability (RAM), and the basic mechanisms for the design of "high availability".
- Applying Tele-traffic to corporate networks.

**List of topics to be covered**

1. Introduction to Tele-Traffic
  - 1.1. Services Characterization.
  - 1.2. Review of services and applications.
  - 1.3. Review of WAN architectures.
  - 1.4. Traffic Analysis.
2. Architectures in corporate networks. "All Ethernet" Networks.
  - 2.1. Automatic VLAN.
  - 2.2. Routing in Ethernet.
  - 2.3. Ethernet in "Carrier Ethernet" (CE).
  - 2.4. CE operator networks.
  - 2.5. CE Services and architectures.
3. Integration of operator services.
  - 3.1. Virtual Private Networks.
  - 3.2. Layer 123 Integration Models.
  - 3.3. Introduction to SDN.

<b>Prerequisites or co-requisites</b>		
None, but it will be assumed that students have knowledge in computer networks.		
<b>Course category in the program</b>		
<input type="checkbox"/> R (required)	<input checked="" type="checkbox"/> E (elective)	<input type="checkbox"/> SE (selective elective)

<b>Specific goals for the course</b>	
<b>Specific outcomes of instruction</b>	
<p>RA83 - Ability to design, deploy and manage network architectures and services, access networks, core and private, both fixed and mobile environments, using analytical tools and network dimensioning.</p> <p>RA84 - Ability to apply technical quality of service (QoS) and traffic engineering (MPLS, ..) to adapt the requirements of different traffic flows to the services provided by the network.</p> <p>RA88 - Ability to specify, program, validate and optimize communication protocols and interfaces at different levels of protocols, both the core network and end to end.</p> <p>RA91 - Ability to track technological innovation of transmission systems, switching and process to improve the networks and services.</p>	
<b>Student outcomes addressed by the course</b>	
CE-TL1, CE-TL2, CE-TL3, CE-TL4, CE-TL5, CE-TL6 CG1-6, CG9	

<b>Bibliography and supplemental materials</b>	
Computer Networks: A Systems Approach, Larry L. Peterson, Bruce S. Davie, Morgan Kaufmann; 5 edition (March 25, 2011).	
TELETRAFFIC ENGINEERING and NETWORK PLANNING, Villy B. Iversen, DTU Course 34340, <a href="http://www.fotonik.dtu.dk">http://www.fotonik.dtu.dk</a> , Technical University of Denmark, Revised May 20, 2010.	
Comparing, Designing, and Deploying VPNs, 2006. Safari, CISCO.	
<a href="#">Metro Ethernet Services - A Technical Overview</a>	
Andrew. S. Tanenbaum. Computer Networks. 5/ed. Prentice Hall. 2011	
<a href="#">ONS OpenFlow Tutorial</a>	
<a href="#">Original Standford White Paper on OF</a>	

<b>Teaching methodology</b>			
<input checked="" type="checkbox"/> lectures	<input checked="" type="checkbox"/> problem solving sessions	<input type="checkbox"/> collaborative actions	<input checked="" type="checkbox"/> laboratory sessions
<b>Other:</b>			