Program	09TT- Engineering in Telecommunication Technologies and Services

Course number and name	
Number	95000005
Name	Fundamentals of Telematic Systems Fundamentos de los Sistemas Telemáticos
Semester	Y1-S1

Credits and contact hours	
ECTS Credits	4.5
Contact hours	54

Coordinator's name	Enrique Vázquez Gallo

Specific course information

Description of course content

Client-server architecture and the Web. Information representation. Structure and functioning of computers. Operating systems. Databases. Internet services and applications.

List of topics to be covered

0. Introduction: telematic systems, computers, networks, protocols. 1. Operating Systems: components, services, user interface. 2. Data representation. Compression algorithms. Files and directories. 3. Processor architecture. Types of programming languages. Language processors. 4. Computer networks. Internet. Layered protocol architectures. Network applications. Examples: Web, DNS. 5. Relational databases. SQL.

Prerequisites or co-requisites

None.

Course category in the program

X R (required)	__ E (elective)	__ SE (selective elective)

Specific goals for the course

Specific outcomes of instruction

RA1. The students understand the need and functions of operating systems. They are able to work with computer files and directories. They are able to use basic Unix commands.
RA2. The students understand different formats for the binary representation of

information. They understand the principles of data compression and error detection procedures.

RA3. The students understand the basics of computer architecture, hardware and software processors, and the execution of machine code instructions in a processor. They are able to write and understand simple programs in a markup language, and to understand simple programs in an scripting language.

RA4. The students understand the general organisation of the Internet and well-known applications. They understand the basic concepts of protocols and services. They are able to use a protocol analyzer and basic tools to extract information about networks.

RA5. The students understand the concept of databases. They are able to use the SQL language to create and work with simple databases.

RA6. The students are able to understand the architecture of a basic telematics service, to configure an IaaS-cloud based one, and to publish it on the Internet.

Student outcomes addressed by the course

CEB2, CECT2, CECT3, CECT13

Bibliography and supplemental materials

- J.F. Kurose, K.W. Ross: Computer Networking: A Top-Down Approach. Pearson.
- J. Glenn Brookshear: Introducción a la computación. Pearson.
- N. Dale, J. Lewis. Computer Science Illuminated. Jones & Bartlett Learning.

Teaching methodology

_X_ lectures	_X_ problem solving sessions	__ collaborative actions	_X_ laboratory sessions
Other:			