Program	09AQ-Master in Telecommunication Engineering

Course number and name	
Number	93000797
Name	Communication Networks Redes de comunicaciones
Semester	1Y-1S

Credits and contact hours	
ECTS Credits	6
Contact hours	48

Coordinator's name	Francisco González Vidal

Specific course information

Description of course content

It aims to train students to address the design of communications networks, taking into account parameters such as the services to be offered, the quality of them , the characteristics of network technologies available , regulatory and economic aspects as well as to anticipate evolution.

List of topics to be covered

Network Model. Access, Metro, Edge, Core, Management and control. Present and convergence.
Market requirements. User characterization and traffic demand. Quality of service.
Technologies: xDSL, FTTx, Wireless, Optical transport netwoks, control: IMS.

Prerequisites or co-requisites

Equivalent to ITC BS degrees.

Course category in the program

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

Specific goals for the course

Specific outcomes of instruction

RA1, The student is able to understand the architecture of a communication network , identify its segments , elements and orders of magnitude of their numbers and capacities.
RA2. The student is able to apply the elements of the architectural model to deployments of specific technologies
RA3.The student understands and is able to quantify the main parameters that define the communication networks , with a cost / quality balance and is able to apply

dimensioning communication networks
RA4. The student is able to do teamworking, for designing , sizing , selecting real equipment , plan the deployment and estimate the cost of a communication network in a real demographic area
RA5. The student is able to understand the structure , features and capabilities of optical transport networks and recognize these elements in real examples
RA6. The student is able to understand the structure , components and networking capabilities of core routing and recognize these elements in real examples
RA7. The student understands the corresponding control paradigms existing network structures and is able to compare and evaluate the performance of similar services on different networks

Student outcomes addressed by the course

CB1, CB2, CB3, CB4, CB5, CT2, CT3, CT4, CT5, CT6, CE4, CE6, CE7, CE8, CE9

Bibliography and supplemental materials

Álvarez-Campana, Manuel y Berrocal Colmenarejo, Julio y González Vidal, Francisco y Pérez Leal, Raquel y Román Martínez, Isabel y Vázquez Gallo, Enrique (2009) Tecnologías de Banda Ancha y Convergencia de Redes. Ministerio de Industria, Turismo y Comercio (España). ISBN 978-84-96275-85-0

Leonid G. Kazovsky, Ning Cheng, Wei-Tao Shaw, David Gutierrez, Shing-Wa Wong, Broadband Optical Access Networks (2011). Wiley, ISBN: 978-0-470-18235-2

Ke-Lin Du; M. N. S. Swamy, (2010), Wireless Communication Systems, Cambridge University Press. ISBN-13: 978-0-521-11403-5

Leonhard Korowajczuk (2011), LTE, WiMAX and WLAN Network Design, Optimization and Performance Analysis, John Wiley & Sons. ,Print ISBN: 978-0-470-74149-8, Web ISBN: 0-470741-49-X, eISBN: 978-1-119-97144-3

Course Moodle page

Teaching methodology

X **lectures**	__ **problem solving sessions**	X **collaborative actions**	__ **laboratory sessions**
Other:			