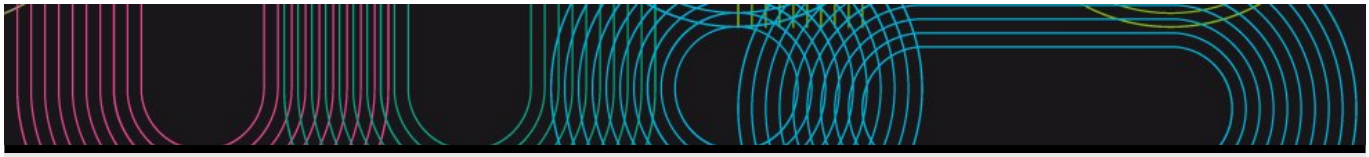

IDENTIFYING DATA				
Computer networks 2				
Subject	Computer networks 2			
Code	O06G150V01505			
Study programme	(*)Grao en Enxeñaría Informática			
Descriptors	ECTS Credits	Choose	Year	Quadmester
	6	Mandatory	3rd	1st
Teaching language	Spanish Galician			
Department				
Coordinator	Diaz-Cacho Medina, Miguel Ramón			
Lecturers	Diaz-Cacho Medina, Miguel Ramón Sotelo Martínez, José Manuel			
E-mail	mcacho@uvigo.es			
Web	http://moovi.uvigo.gal			
General description	(*)Redes de computadores teórico/práctica, centrada en ferramentas de deseño, configuración e administración de redes LAN, inalámbricas e acceso a Internet. A web da materia está baixo o sistema FAITIC da Unversidade de Vigo, accesible ao alumnado matriculado da materia. A materia impartirase fundamentalmente en castelán e galego, existindo documentación en inglés.			

Competencies	
Code	
A1	Students will have shown they have sufficient knowledge and understanding of an area of study, starting after completion of general secondary education, and normally reaching a level of proficiency that, being mostly based on advanced textbooks, will also include familiarity with some cutting-edge developments within the relevant field of study.
A2	Students will be able to apply their knowledge and skills in their professional practice or vocation and they will show they have the required expertise through the construction and discussion of arguments and the resolution of problems within the relevant area of study.
A4	Students will be able to present information, ideas, problems and solutions both to specialist and non-specialist audiences.
A5	Students will acquire the learning skills that are required to pursue further studies with a high degree of independence.
B6	Ability to conceive and develop centralized or distributed computing systems and architectures, integrating hardware, software and networks, according to the knowledge and training acquired.
B8	Knowledge of the essential subjects and technologies that will allow students to learn and develop new methods and technologies, as well as those that will endow them with versatility to adapt to new situations.
B9	Ability to solve problems by taking the initiative, making decisions and acting independently and creatively. Ability to communicate the knowledge contents, skills and abilities of the Computer Science Engineer profession.
C17	Knowledge and application of the characteristics, functions and structure of Distributed Systems, Computer Networks and the Internet and design and implementation of applications based on them.
C27	Ability to solve problems of integration according to available strategies, standards and technologies.
C29	Ability to identify, assess and deal with associated risks that could potentially arise.
C32	Ability to select, design, implement, integrate, assess, build, manage, exploit and maintain hardware, software and network technologies, within the appropriate costs and quality requirements.
C34	Ability to select, design, implement, integrate and manage networks and communications infrastructures in organizations.
C35	Ability to select, design, implement, integrate and manage information systems that meet the needs of organizations, once the costs and quality criteria have been identified.
C36	Ability to design systems, applications and services based on network technologies, including the Internet, web, e-commerce, multimedia, interactive services and mobile computing.
C37	Ability to understand, apply and manage the security and safety of computing systems.
D4	Analysis, synthesis and evaluation capacity

D5	Organizational and planning skills
D6	Ability to abstract: ability to create and use models that reflect real situations
D7	Ability to search, relate and structure information from various sources and to integrate ideas and knowledge.
D8	Ability to work in situations of lack of information and / or under pressure
D9	Ability to quickly integrate and work efficiently in unidisciplinary teams and to collaborate in a multidisciplinary environment
D10	Interpersonal relationship skills.
D11	Critical thinking
D14	Have motivation for quality and continuous improvement

Learning outcomes

Expected results from this subject			Training and Learning Results	
New	A5		C17 C35	D7
New	A5		C17 C27	D9 D11
New		B8	C27 C37	D8 D10
New	A2		C34 C35 C36	D10
New	A2	B9	C27	D6 D9 D10 D11 D14
New	A1 A4	B8	C29 C37	D7 D9
New	A1	B8	C17	
New	A1	B6	C17 C27 C32 C34 C35 C37	D4 D5 D7 D9 D10 D11

Contents

Topic	
Block 1. Introduction.	Subject 1: Introduction to the communications and networks of computers. Architectures of protocols. Subject 2: Means of transmission. Topologies and structures of network. Subject 3: Structure of Internet. Topology. Critical protocols of Internet.
Block 2: Networks and access services	Subject 4: Access networks: *xDSL, *CaTV, *MetroEthernet, *RTC, *RDSI, *Wifi/*Wimax, *LMDS, Satellite, mobile Networks. Subject 5: *Access routing: *DNAT/*SNAT, *PROXY. Subject 6: Networks *LAN. *Wifi. *VLAN.
Block 3: WAN networks	Subject 7:Switched networks. Switching circuits, *Packet switching. Subject 8: Technologies of virtual circuit. *MPLS. Subject 9: Advanced IP routing *RIP, *OSPF, *BGP. Subject 10. New generation IP. IPv6

Planning

	Class hours	Hours outside the classroom	Total hours
Workshops	12	32	44
Laboratory practical	14	26	40
Introductory activities	2	0	2
Lecturing	20	40	60
Objective questions exam	3	0	3
Essay questions exam	1	0	1

*The information in the planning table is for guidance only and does not take into account the heterogeneity of the students.

Methodologies

	Description
Workshops	They are practical exercises and suppositions that expose and develop in laboratory of nets.

Laboratory practical	They are practical close of work in surroundings of real net in laboratory.
Introductory activities	They produce fundamentally to the beginning of the *impartición of the subject, to put in value the contents that vain to give and look for and stimulate the passion by the same by means of it *confrontación of the contained with situations in the real life.
Lecturing	Theoretical explanation by part of the teaching staff of the contained of the subject

Personalized assistance

Methodologies	Description
Workshops	It Will give bear customized to the student during them practical
Laboratory practical	It Will give bear customized to the student during them practical

Assessment

	Description	Qualification	Training and Learning Results			
Objective questions exam	Realization of a proof type test envelope the contents learnt along the course Following competitions will be evauated: FROG01,FROG02,FROG03,FROG04,FROG05,FROG06,FROG07,FROG08.	65	A1 A2 A5	B6 B8	C17 C27 C29 C32 C34 C35 C36 C37	D4 D5 D6 D7 D8 D9 D10 D11
Essay questions exam	Formulation of a supposed to resolve. Following competitions will be evauated: FROG06,FROG07,FROG08	35	A1 A4	B6 B8 B9	C17 C27 C29 C32 C34 C35 C36 C37	D5 D6 D7 D9 D10 D11 D14

Other comments on the Evaluation

Sources of information

Basic Bibliography

Kurose J., **Redes de Computadoras**, ISBN-10: 8478291199 ., 6ª, Pearson Education, 2012

Complementary Bibliography

Stallings W., **Comunicaciones y Redes de Computadores**, ISBN: 978-84-205-4110-5, 7ª,

Tannenbaum, **Redes de Ordenadores**, 9789702601623,

Shroder C., **Redes en Linux**, 9788441524743, 1ª,

Recommendations

Subjects that continue the syllabus

Final Year Dissertation/O06G150V01991

Subjects that are recommended to be taken simultaneously

Operating systems 2/O06G150V01405
Data centres/O06G150V01601

Subjects that it is recommended to have taken before

Computer networks 1/O06G150V01404

Contingency plan

Description

=== EXCEPTIONAL MEASURES SCHEDULED ===

STAGE 1: MIXED TEACHING
Because of the exceptional situation, due the impossibility to teach in person, the teaching will be performed in an online way.

For the online teaching, we will use the tools provided by the University, at present the "Remote Campus" and FAITIC tools.

Nevertheless it will be able to be complemented by using other means.

STAGE 2: TEACHING COMPLETELY ONLINE.

Because of the exceptional situation, due the impossibility to teach in person, the teaching will be perform in an online way.

All the teaching will use the tools provided by the University, at present the "Remote Campus" and FAITIC tools.
Nevertheless it will be able to be complemented by using other means.

=== ADAPTATION OF THE METHODOLOGIES ===

For the laboratory practices, we will substitute the practices that require specific equipment by virtualized practices or simulated ones. Eventually, other similar practices will be proposed that are able to be performed online or at home. The practices will be able to have an autonomous format to prevent conciliation problems and/or connectivity problems.

Tutoring sessions (attention to the students) will be done using telematic tools (Email, FAITIC forums, Remote Campus), that will be complemented by using other means. In some cases an appointment will be necessary.

=== ADAPTATION OF THE EVALUATION ===

The evaluation will make by means of on-line proofs using Remote Campus and *FAITIC.