

## 30373 - Network Interconnection

### Syllabus Information

**Academic Year:** 2020/21

**Subject:** 30373 - Network Interconnection

**Faculty / School:** 110 - Escuela de Ingeniería y Arquitectura

**Degree:** 581 - Bachelor's Degree in Telecommunications Technology and Services Engineering

**ECTS:** 6.0

**Year:** 2

**Semester:** First semester

**Subject Type:** Compulsory

**Module:** ---

### 1.General information

#### 1.1.Aims of the course

#### 1.2.Context and importance of this course in the degree

#### 1.3.Recommendations to take this course

### 2.Learning goals

#### 2.1.Competences

#### 2.2.Learning goals

#### 2.3.Importance of learning goals

### 3.Assessment (1st and 2nd call)

#### 3.1.Assessment tasks (description of tasks, marking system and assessment criteria)

### 4.Methodology, learning tasks, syllabus and resources

#### 4.1.Methodological overview

The methodology followed in this course is oriented towards the achievement of the learning objectives. A wide range of teaching and learning tasks are implemented, such as lectures (M1), practice sessions (M8), lab sessions (M9), assessment (M11), tutorials (M10), autonomous work and study (M13, M14 and M15).

#### 4.2.Learning tasks

This is a 6 ECTS course organized as follows:

**A01/A02 Lectures (20 hours) and practice sessions (10 hours).** The teacher explains the course contents and solves representative applied problems. Additional practice sessions may require previous work from the students.

**A03 Laboratory sessions (20 hours).** 10 Sessions of two hours. It may require previous work from the students.

**A06 Tutorials.** Teacher's office hours allow students to solve questions and discuss unclear course contents. It is advisable to come with clear and specific questions.

**A07 Autonomous work.** Preparation of the practice sessions, lectures, problem-solving exercises, and study.

**A08 Assessment.** Students will complete assignments and exams related to concepts seen in laboratory sessions and lectures.

#### 4.3.Syllabus

The course will address the following topics:

1. End-to-end communications: IP based services

1. General concepts. Architecture paradigm
  2. Study of application services
  3. Transport protocols: general concepts, TCP protocol, UDP protocol
2. Network interconnection: IP level
    1. Internet Protocol version 4 (IPv4): addressing, PDU and primitives, fragmentation and reassembly, routing and control.
    2. Internet Protocol version 6 (IPv6): introduction to IPv6 and co-existence with IPv4, addressing, PDU and extension headers, self-configuration, routing
3. Network security
    1. Security in communications: general concepts, tools and basic practices.

#### **4.4.Course planning and calendar**

Further information concerning the timetable, classroom, office hours, assessment dates and other details regarding this course, will be provided on the first day of class or please refer to the EINA website (<http://eina.unizar.es>).

#### **4.5.Bibliography and recommended resources**

[http://biblos.unizar.es/br/br\\_citas.php?codigo=30373&year=2020](http://biblos.unizar.es/br/br_citas.php?codigo=30373&year=2020)