



## GENERAL INFORMATION

Data of the subject	
Subject name	Network Planning and Operation
Subject code	DTC-MIT-528
Main program	<a href="#">Máster Universitario en Ingeniería de Telecomunicación por la Universidad Pontificia Comillas</a>
Involved programs	Grado en Administración y Dirección de Empresas y Máster Univ. en Ingeniería de Telecomunicación [Fifth year] Grado en Análisis de Negocios/Business Analytics y Máster Universitario en Ingeniería de Telecom. [Fifth year] Máster Universitario en Ingeniería de Telecomunicación y Mást. Univ. en Administración de Empresas [First year] Máster Universitario en Ingeniería de Telecomunicación [First year] Máster Universitario en Ingeniería de Telecomunicación y Máster en Ciberseguridad [First year] Máster Universitario en Ingeniería de Telecomunicación y Mást. Univ. en Administración de Empresas [First year] Máster Universitario en Ingeniería de Telecomunicación + Máster Big Data.Tecnología y Anal. Avanzada [First year] Máster Universitario en Ingeniería de Telecomunicación + Máster in Smart Grids [First year]
Level	Postgrado Oficial Master
Quarter	Semestral
Credits	6,0 ECTS
Type	Obligatoria
Department	Department of Telematics and Computer Sciencies
Coordinator	Silvia Ortega González

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## DESCRIPTION OF THE SUBJECT

### Contextualization of the subject

### Prerequisites

The alumn must know about the main foundations of principals telecommunication network technologies. Specifically IP, Ethernet, and optic fiber

## Course contents

### Contents

#### Topic 1: COMMUNICATION NETWORK PLANNING & OPERATIONS GENERAL CONCEPTS

- 1.1 – Introduction
- 1.2 – Telecommunication Equipments and Devices
- 1.3 – Telecommunication Networks
- 1.4 – Introduction to Network Planning
- 1.5 – Introduction to Network Operation

#### Topic 2: ACCESS NETWORKS PLANNING AND OPERATION

- 2.1 – Introduction, motivation and goals
- 2.2 – Cupper Access Networks
- 2.3 – Optic Fiber Access Networks

#### Topic 3: CONNECTIVITY NETWORKS PLANNING AND OPERATION

- 3.1 – Introduction, motivation and goals
- 3.2 – Packet Switching Networks (Ethernet, IP, MPLS)
- 3.3 – Transmission Networks (Electric and Photonic Switching)

#### Topic 4: NETWORK FUNCTION VIRTUALIZATION

- 4.1 Introduction to the virtualization new paradigm in telco networks
- 4.2 NFV (Network Function Virtualization) Impact in the traditional planning and operation
- 4.3 SDN (Software Defined Network) Impact in the traditional planning and operation



## EVALUATION AND CRITERIA

Evaluation activities	Evaluation criteria	Weight
Final Test	To be taken into account 5 over 10 must be achieved	90 %
Partial Test	To be taken into account 5 over 10 must be achieved	50 %
Practical Uses Cases	Content 80% Presentation 20%	30 %
Practical Uses Cases Presentation and Debates	Knowledge 50% Participation 50%	30 %

## Grading

Ordinary & Extraordinary Call Calification Weights

- 50% Final Test
- 20% Partial Test
- 30% Practical Uses Cases

At least a 4 points over 10 must be achieved in each part to be taken into account in the final calification other case will mean suspend subject

## WORK PLAN AND SCHEDULE

Activities	Date of realization	Delivery date
Contents Comprehension and Study	During all the teaching period	
Practical Uses Cases	During all the teaching period	Final Test Date
Group Exercises	During and after the proposal date	Informed when presented
Final Test preparation	During all the teaching period	May

## BIBLIOGRAPHY AND RESOURCES



# COMILLAS

UNIVERSIDAD PONTIFICIA

ICAI

ICADE

CIHS

**Syllabus**  
**2023 - 2024**

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<https://servicios.upcomillas.es/sedelectronica/inicio.aspx?csv=02E4557CAA66F4A81663AD10CED66792>