



GENERAL INFORMATION

Data of the subject

Subject name	Network Integration
Subject code	DTC-GITT-422
Main program	Bachelor's Degree in Engineering in Telecommunication Technologies
Credits	4,5 ECTS
Type	Obligatoria (Grado)
Department	Department of Telematics and Computer Sciences

Teacher Information

Teacher

Name	Rogelio Martínez Perea
Department	Department of Telematics and Computer Sciences
EEmail	rmperera@icai.comillas.edu

DESCRIPTION OF THE SUBJECT

Contextualization of the subject

Prerequisites

- Generic notions on communication networks (LAN).
- Generic notions on the TCP/IP architecture.
- Generic notions on media coding/decoding techniques.

Course contents

Contents

1. Introduction
 1. Multimedia communications_ state-of-the-art. Network convergence
 1. VoIP networks evolution. Soft-switch concept
 2. All-IP convergent networks
 2. Quality of service in IP networks (reliability, latency, jitter). Voice quality.
 3. Advantages of integrated voice and data networks
2. Protocols for transport of multimedia information
 1. Protocols in WAN networks
 2. Functions required for multimedia information transport over IP networks. Synchronization sources. Streams and sessions.
 3. Receivers and transmitters in VoIP networks
 4. Voice and video synchronization
 5. Quality of service measurement and reporting
3. VoIP signaling protocols. Multimedia session description .



1. Offer/Answer model
2. Parameter negotiation. Codecs and transport
4. All-IP architectures for multimedia communications .
 1. Session establishment protocol
 2. User mobility
 3. Proxy and registrar concept
 4. VoIP services

EVALUATION AND CRITERIA

The use of AI to produce full assignments or substantial parts thereof, without proper citation of the source or tool used, or without explicit permission in the assignment instructions, will be considered plagiarism and therefore subject to the University's General Regulations.

Evaluation activities	Evaluation criteria	Weight
Exams: • Mid-term exam • Final exam	• Understanding the concepts • Application of concepts to practical problem solving • Analysis and interpretation of results	60
Evaluación continua del rendimiento: • Practical activities. Carried out individually or in group • Problems or challenges resolved individually or in group • Technical challenges.	• Understanding the concepts • Application of concepts to practical problem solving • Analysis and interpretation of results	20
Evaluation of experimental work • Lab practice reports . Individually or in group	• Delivery of lab practice reports • Understanding concepts • Application of concepts to project implementation and problem solving	20

BIBLIOGRAPHY AND RESOURCES

Basic References

- RTP, audio and video for the Internet. Collin Perkins. Addison-Wesley
- Internet Multimedia Communications Using SIP. Rogelio Martinez. Morgan-Kauffman
- Asterisk, the definitive guide. Russell Bryant, Leif Madsen, Jim Van Meggelen. O'Reilly
- Especificaciones del IETF que se indicaran durante el curso



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