



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
Involved programs	Grado en Ingeniería en Tecnologías de Telecomunicación [Fourth year]
Credits	4,5 ECTS
Type	Obligatoria (Grado)
Department	Department of Telematics and Computer Sciences

Teacher Information	
Teacher	
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Department	Department of Telematics and Computer Sciences
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DESCRIPTION OF THE SUBJECT

Contextualization of the subject
Prerequisites
<ul style="list-style-type: none">Generic notions on communication networks (LAN).Generic notions on the TCP/IP architecture.Generic notions on media coding/decoding techniques.

Course contents

Contents
<ol style="list-style-type: none">1. Introduction<ol style="list-style-type: none">1. Multimedia communications_ state-of-the-art. Network convergence<ol style="list-style-type: none">1. VoIP networks evolution. Soft-switch concept2. All-IP convergent networks2. Quality of service in IP networks (reliability, latency, jitter). Voice quality.3. Advantages of integrated voice and data networks2. Protocols for transport of multimedia information<ol style="list-style-type: none">1. Protocols in WAN networks2. Functions required for multimedia informatio transport over IP networks. Synchronization sources. Streams and sessions.3. Receivers and transmitters in VoIP networks4. 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

Evaluation activities	Evaluation criteria	Weight
Exams: <ul style="list-style-type: none">• Mid-term exam• Final exam	<ul style="list-style-type: none">• Understanding the concepts• Application of concepts to practical problem solving• Analysis and interpretation of results	60 %
Evaluación continua del rendimiento: <ul style="list-style-type: none">• Practical activities. Carried out individually or in group• Problems or challenges resolved individually or in group• Technical challenges.	<ul style="list-style-type: none">• Understanding the concepts• Application of concepts to practical problem solving• Analysis and interpretation of results	20 %
Evaluation of experimental work <ul style="list-style-type: none">• Lab practice reports . Individually or in group	<ul style="list-style-type: none">• 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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2023 - 2024
