

Communication Services and Security Teaching Guide

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Curs 2022 - 2023



General Information

Staff

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- Language: English
- Hours: Thursday (18:15-21:00), Friday (17:15-18:30)



Objectives

- To understand flow control mechanisms in current data communications networks
- To understand different quality of service mechanisms in current data communications networks
- To configure and test quality of service solutions in network devices
- To understand wireless communication technologies
- To understand and analyze security mechanisms in wireless communications
- To deploy and configure common communication services: authentication, DNS, DHCP, VoIP, ...
- To design, configure and test wireless deployments



Contents

- 1 Network congestion control
 - TCP operations
 - TCP flow control
 - TCP congestion control
 - Service policies
- 2 Quality of Service (QoS)
 - Traffic classification
 - Congestion management
 - Congestion avoidance
 - Policing and shaping
 - RSVP
- 3 Wireless networks
 - Wireless LAN
 - Security
 - Deployments
- 4 VoIP
 - Telephony essentials
 - Digital telephony
 - Solutions. Asterisk



Evaluation

- Week 3. Exercise 1 (5/42)
- Week 3. Exercise 2 (5/42)
- Week 6. Exercise 3 (6/42)
- Week 8. Exercise 4 (6/42)
- Week 10. Exercise 5 (5/42)
- Week 11. Exercise 6 (5/42)
- Week 12. Practical case (10/42)

Each of the above items are not mandatory. More than a 50% required to pass the subject



Bibliography

- **Internetworking with TCP/IP: Volume I.** Douglas E. Comer. Prentice Hall, 1991
- **TCP/IP Illustrated, Volume I.** William R. Stevens. Addison-Wesley, 1994
- **802.11 Wireless Networks: The Definitive Guide.** Matthew Ed. O'Reilly, 2002.
- **Implementing 802.1x. Security Solutions for Wired and Wireless Networks.** Jim Geier. Wiley Publishing, 2008.
- **Switching to VoIP.** Ted Wallingford. O'Reilly, 2005
- **Asterisk: The Future of Telephony.** Jim Van Meggelen, Leif Madsen & Jared Smith. O'Reilly, 2007

