1st Term of Computer Networks

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By previous appointment only

Outline

- Subject Presentation
- Subject Assessment
- Today's Lecture

Course Goals

- The main goal of the Computer Networks subject is that you understand functions and protocols within TCP/IP architecture layers, understand how layers fit together and finally understand how the Internet works.
- The aim of the 1st term of the course is to learn the basic concepts behind most computer networks, paying special attention to TCP/IP architecture.

Chapters

1. Computer Networks and the Internet.
2. Application Layer.
3. The Sockets interface (*).
4. Transport Layer.
5. Security in Computer Networks.

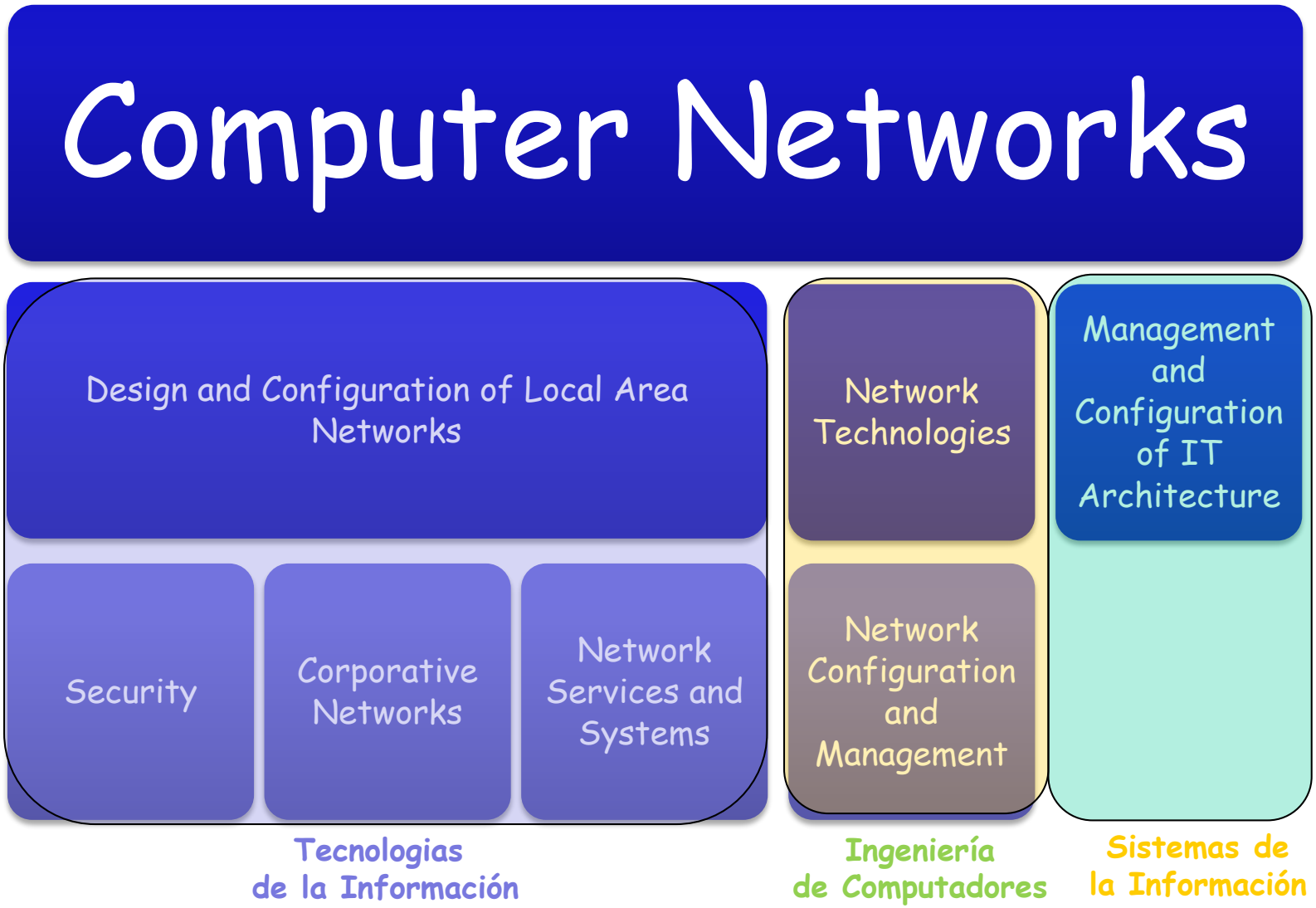
1st Term

6. Network Layer.
7. Link Layer and Local Area Networks.
8. Physical layer

2nd Term

* Unit 3 will be taught during the lab sessions.

Network Subjects in next courses



Lectures Schedule

- Where?
  - 1E, 1.0
- When?
  - Friday from 9:00h to 11h
  - I am teaching also the group A (language: Valencian)
    - Thursday from 10:30h to 12:30 (1G,1.5)

Lectures Schedule

Data	Topic	Syllabus / Activities
07/09/2018	T1	What's the Internet?
14/09/2018	Introduction to Computer	Communication Protocols. Packet Switching
21/09/2018	Networks and Internet	Circuit Switching, and Network Architecture
28/09/2018		Principles of Network Applications
05/10/2018	T2	The Web and HTTP
19/10/2018	Network Applications	Electronic Mail
26/10/2018		DNS: The Internet's Directory Service
~~02/11/2018~~	26/11/2018	Introduction and Transport- Layer Services. Application identification.
09/11/2018	T4	Principles of Reliable Data Transfer
16/11/2018	Transport Layer	TCP Segment Structure. Reliable Data Transfer
23/11/2018		Flow Control. TCP Connection Management
30/11/2018		Congestion Control
~~07/12/2018~~	21/12/2018	Network security. Symmetric key cryptography
14/12/2018	Network security	Public Key Cryptography. Integrity of messages Digital signature. Authentication. Secure TCP connections

Labs Schedule

- Where?
  - Lab of Operative Systems (1G, 2S-17)
- When?
  - Wednesday from 9:30h to 11h
- Schedule of the sessions:

Session	Date	Topic	Practice
1	03-oct.	T2	P1 - Introduction to wireshark_v5
2	10-oct.	Application Layer	P2 - Basic Tools and HTTP
2	17-oct.		P3 -Sockets
3	24-oct.	T3	P4 -Telnet and ssh, SMTP / POP3, DNS and FTP
4	31-oct.	Java Sockets	P5 - Sequential TCP Servers
5	07-nov.		P6 - Concurrent TCP Servers
6	14-nov.		P7 - Web Server
7	21-nov.		P7 - UDP sockets
8	28-nov.		P8 - Multiprotocol Servers
9	12-dic.	T4 Transport Layer	TCP Performance Analysis
10	19-dic.		Labs retake

Assessment

- Your grade will be based on your performance in the lecture exams, laboratory exam and 1st term exam, according to the following distribution:
  - Lecture exams (20% = 2 points of the final 1st term grade):
    - at the end of each unit you will have an exam based on material from the unit lectures

Assessment

- Lab exams (20% = 2 points of the final 1st term grade):
  - 3 questions test each lab session (40% = 0.8 points)
    - you should answer individually a test of 3 questions each lab session.
    - the test will be available in PoliformaT at the end of the lab session
  - Lab exam (60% = 1.2 points)
    - Date: 16/01/2019
    - It will be based on material from lab sessions

Assessment

- Final 1st Term Exam (60% = 6 points of the final 1st term grade) :
  - The final 1st term exam will be based on material from the lectures and Lab sessions
  - Written exam of open questions
    - a **minimum mark** of 4 over 10 between the 1st and 2nd term exam is required
  - No documents allowed
  - No electronic equipment (including calculators) is allowed

Assessment

- Each term grade= Lecture grade (20%) + Labs grade (20%) + Term Final Exam grade (60%)
- Final term grade = (1^{st} term grade + 2^{nd} term grade)/2
- Important dates:

1^{st} Term Exam	16/01/19	Afternoon
Retake 1^{st} Term Exam	11/02/19	Morning
2^{nd} Term Exam	03/06/19	Afternoon
Retake 2^{nd} Term Exam	13/06/19	Afternoon

Textbook

- *Computer Networking: A Top Down Approach* 7th edition. Jim Kurose, Keith Ross. Addison-Wesley, 2013.