Computer Networks

Academic Year: **(2023 / 2024)**   **Review date: 11-04-2023**

Department assigned to the subject: Telematic Engineering Department

Coordinating teacher: BAGNULO BRAUN, MARCELO GABRIEL

Type: Compulsory ECTS Credits : 6.0

Year : 1 Semester : 2

DESCRIPTION OF CONTENTS: PROGRAMME

1. Introduction to packet networks
a. Layer model for communication systems
b. TCP/IP reference model (Internet)
2. Introduction to the application layer in the Internet
a. Example of application level protocols
3. Introduction to the Transport Layer in the Internet
4. UDP services
5. TCP services
6. Network layer in the Internet
7. The Internet Protocol
8. IP network design
9. NATs
10. Manual and automatic configuration
11. Link layer
a. Shared medium technologies
b. Addressing
c. Link layer topologies and devic

LEARNING ACTIVITIES AND METHODOLOGY

AF1: THEORETICAL-PRACTICAL CLASSES. In this classes, we will present the knowledge that students should acquire. Students will receive the class notes and will have basic texts of reference to facilitate the follow-up of the classes and the development of the subsequent work. Exercises, practical problems on the part of the student will be solved and workshops and evaluation test will be held to acquire the necessary skills.
AF3: INDIVIDUAL OR GROUP WORK.
AF8: WORKSHOPS AND LABORATORIES.
AF9: FINAL EXAM. In which the knowledge, skills and abilities acquired throughout the course will be assessed globally.
MD1: THEORY CLASS. Presentations in class with support of computer and audiovisual media, in which the main concepts of the subject are developed and the materials and bibliography are provided to complement the students' learning.
MD2: PRACTICES. Resolution of practical cases, problems, etc. raised by the teacher individually or in groups.
MD3: TUTORIALS. Individualized assistance (individual tutorials) or group (collective tutorials) to students by the teacher.
MD6: LABORATORY PRACTICES. Applied / experimental teaching to workshops and laboratories under the supervision of a tutor.

ASSESSMENT SYSTEM

SE1: FINAL EXAMINATION In which the knowledge, skills and abilities acquired throughout the course will be assessed globally.
SE2: CONTINUOUS EVALUATION. Work, presentations, debates, exhibitions in class, exercises, practices and work in the workshops throughout the course will be evaluated.

% end-of-term-examination: 30

% of continuous assessment (assigments, laboratory, practicals…):   70

BASIC BIBLIOGRAPHY

- KUROSE, JAMES F., Keith W. Ross. Computer Networks, a top-down approach, Pearson, 2017

ADDITIONAL BIBLIOGRAPHY

- STEVENS,W.R. TCP/IP illustrated. Vol 1. The protocols , Addison. Wesley.

- TANENBAUM, ANDREW S. Computer Networks, Prentice Hall International. .

BASIC ELECTRONIC RESOURCES

- J. Kurose . Computer Networking: a Top Down Approach book website:
https://gaia.cs.umass.edu/kurose_ross/index.html