

Course guide

330235 - XC - Communication Networks

Last modified: 29/05/2023

Unit in charge: Manresa School of Engineering
Teaching unit: 750 - EMIT - Department of Mining, Industrial and ICT Engineering.

Degree: BACHELOR'S DEGREE IN ICT SYSTEMS ENGINEERING (Syllabus 2010). (Compulsory subject).

Academic year: 2023 **ECTS Credits:** 6.0 **Languages:** Catalan, Spanish, English

LECTURER

Coordinating lecturer: FRANCISCO DEL AGUILA LOPEZ

Others:

DEGREE COMPETENCES TO WHICH THE SUBJECT CONTRIBUTES

Specific:

1. Knowledge of the architecture of communications networks and their application as well as the ability to design, implement and manage communications networks, especially computer networks.
2. The ability to describe, program, use, evaluate and optimize communication protocols and interfaces for the different levels of a network architecture
3. Knowledge of and the ability to use existing tools and instrumentation for the analysis, design, development and verification of electronic, computer and communication systems
4. Knowledge and ability to use existing tools and instrumentation for the analysis, design, development and verification of electronic, computer and communications systems
5. The ability to perform the typical activities of the degree, taking into account the corresponding standards, rules and regulations.

Transversal:

6. EFFICIENT ORAL AND WRITTEN COMMUNICATION - Level 3. Communicating clearly and efficiently in oral and written presentations. Adapting to audiences and communication aims by using suitable strategies and means.
7. TEAMWORK - Level 3. Managing and making work groups effective. Resolving possible conflicts, valuing working with others, assessing the effectiveness of a team and presenting the final results.
8. EFFECTIVE USE OF INFORMATION RESOURCES - Level 3. Planning and using the information necessary for an academic assignment (a final thesis, for example) based on a critical appraisal of the information resources used.
9. THIRD LANGUAGE. Learning a third language, preferably English, to a degree of oral and written fluency that fits in with the future needs of the graduates of each course.

TEACHING METHODOLOGY

LEARNING OBJECTIVES OF THE SUBJECT

STUDY LOAD

| Type | Hours | Percentage |
|-------------------|-------|------------|
| Hours small group | 30,0 | 20.00 |
| Self study | 90,0 | 60.00 |
| Hours large group | 30,0 | 20.00 |

Total learning time: 150 h



CONTENTS

(ENG) Títol del contingut 1: XARXES DE COMUNICACIÓ

Full-or-part-time: 12h

Theory classes: 4h

Self study : 8h

(ENG) Títol del contingut 2: CAPA D'ENLLAÇ

Full-or-part-time: 34h

Theory classes: 6h

Laboratory classes: 8h

Self study : 20h

(ENG) Títol del contingut 3: XARXES D'ÀREA LOCAL

Full-or-part-time: 27h

Theory classes: 4h

Laboratory classes: 6h

Self study : 17h

(ENG) Títol del contingut 4: XARXES SENSE FILS

Full-or-part-time: 55h

Theory classes: 40h

Laboratory classes: 4h

Self study : 11h

(ENG) Títol del contingut 5: LA CAPA DE XARXA

Full-or-part-time: 31h

Theory classes: 8h

Laboratory classes: 6h

Self study : 17h

(ENG) Títol del contingut 6: LA CAPA DE TRANSPORT

Full-or-part-time: 27h

Theory classes: 4h

Laboratory classes: 6h

Self study : 17h



ACTIVITIES

(ENG) TÍTOL DE L'ACTIVITAT 1: CLASSE EXPOSITIVA I DE PROBLEMES

Full-or-part-time: 26h

Theory classes: 26h

(ENG) TÍTOL DE L'ACTIVITAT 2: ESTUDI DE CONTINGUTS

Full-or-part-time: 20h

Self study: 20h

(ENG) TÍTOL DE L'ACTIVITAT 3: CLASSE DE LABORATORI

Full-or-part-time: 80h

Laboratory classes: 30h

Self study: 50h

(ENG) TÍTOL DE L'ACTIVITAT 4: PROVES

Full-or-part-time: 24h

Theory classes: 4h

Self study: 20h

GRADING SYSTEM

BIBLIOGRAPHY

Basic:

- Kurose, James F.; Ross, Keith W. Computer networking: a top-down approach [on line]. 7th ed. Boston: Pearson, 2017 [Consultation: 31/05/2022]. Available on: <https://ebookcentral-proquest-com.recursos.biblioteca.upc.edu/lib/upcatalunya-ebooks/detail.action?docID=5187270>. ISBN 9781292153599.
- Stallings, William. Comunicaciones y redes de computadores [on line]. 7ª ed. Madrid: Pearson Educación, 2004 [Consultation: 02/06/2022]. Available on: https://www-ingebook-com.recursos.biblioteca.upc.edu/ib/NPcd/IB_BooksVis?cod_primaria=1000187&codigo_libro=1245. ISBN 8420541109.