

## Course Unit Description - (DOMOT)

(Domotics)

(Mestrado em Engenharia Electrotécnica e de Computadores)

Academic year: 2009/2010



### Subject group: Ciências Básicas da Electrotecnia

|               | Semestral      | Compulsory |                           |
|---------------|----------------|------------|---------------------------|
| Mode of study | Diurno         | Hours/Week | T-Teórica 2               |
| Year          | 1 <sup>o</sup> |            | PL-Prática-Laboratorial 2 |
| Semester      | 1 <sup>o</sup> |            | OT-Orientação Tutorial 1  |

ECTS 6

### Objectives

This course seeks to provide the student with knowledge of energy management and building automation (domotics), in residential and services building. At the end of the course, the student should be able to project, to install and commissioning buildings automation using the EIB/KNX technology.

### Course Contents

#### Theoretical

1. Energy Efficiency in Buildings
2. Common FieldBus System
3. Networks and Application Areas
4. KNX – Arguments
5. KNX – Topology
6. KNX – Technology
7. KNX – Telegram
8. KNX - Devices
9. KNX – Radio Frequency
10. KNX – Installation

#### Practical

1. Development of a KNX Electrical Project
2. Introduction of ETS software
3. Practical Applications
4. Project of KNX Home Installation

### Recommended reading

- Lecture notes provided by teachers: overhead transparencies and texts.
- Domingos Santos, "Apoio à Concepção de Sistemas Domóticos EIB para Pessoas com Necessidades Especiais", Chapter 3, Dissertation to obtain the Master degree in Electrical and Computer Engineering, Faculty of Engineering of Porto University, April 2002.
- Siemens, "Instabus EIB – Compact Course", 1997.
- EIBA, "Project Engineering for EIB Installations – Basic Principles", 4th revised edition, 1998, EIBA sc.
- Gunter G. Seip, "Electrical Installations Handbook", Third Edition, 2000, MCD Werbeagentur GmbH, Munique.
- Sauter, Dietrich, Kastner, "EIB – Installation Bus System", 1st ed. 2001, Publicis Corporate Publishing, Erlangen.

### Teaching Methods

In theoretical lessons will be used expositive and interrogatives methods.  
In laboratory lessons will be used preferably active methods of asset, such as working in groups, study cases and learning based on practical problems.

### Assessment methods

The assessment methods will have two components:

- A proof of written assessment to be carried out at the end of the semester with a weight of 60% in the final note.
- A practical work to develop during the semester, with a weight of 40% in the final note.

|                             | <b>Name</b>                                  |
|-----------------------------|--|
| <b>Teacher responsible:</b> | Domingos Salvador Gonçalves dos Santos (DSS) |
| <b>Lecturer:</b>            | Domingos Salvador Gonçalves dos Santos (DSS) |