

Course Unit Description - (EFENE)

(Energy Efficiency in Buildings)

(Mestrado em Engenharia Electrotécnica - Sistemas Eléctricos de Energia)

Academic year: 2009/2010

Subject group: Sistemas de Energia

	Semestral	Optional
Mode of study	Diurno	Hours/Week T-Teórica
Year	1 ^o	PL-Prática-Laboratorial
Semester	1 ^o	OT-Orientação Tutorial
ECTS	7.5	

Objectives

Buildings are responsible for a considerable share of world energy consumption, as well as for the CO₂ emission associated with that consumption, as the stage for many of the activities developed by the humans. Conceiving and developing sustainable buildings represents a relevant contribution, not only for minimization of the kind of impacts already referred, but also in which respects with things like quality of life, work productivity or competitiveness.

Course Contents

- Energy, Environment and Sustainable Development – Buildings perspective;
- Holistic approach to the sustainable building problem and the construction of models as a starting point for energy simulation and the application of directives;
- The Portuguese Energy and Indoor Air Quality Certification Scheme – Directives and Simulation;
- Different certification and recognition schemes;
- Energy simulation systems;
- New strategies and technologies for energy supply on buildings.

Recommended reading

- Decretos-Lei 78 a 80 de 4 de Abril de 2006
- Directiva comunitária 2002/91/CE
- www.adene.pt
- <http://www.usgbc.org/>
- <http://www.eere.energy.gov/buildings/>
- <http://www.bre.co.uk/>

Teaching Methods

The course will have a series of lectures, which will give the knowledge basis for the development of laboratory and tutorial classes. Some research and development activities will also be developed.

Assessment methods

Assessment will be based in a research and development project, and a written exam. Final grade corresponds on 40% to the research and development project and 60% to the written exam, with a minimum grade of 10 (out of 20) for each of them.

	Name
Teacher responsible:	Luis Filipe Caeiro Castanheira (LCC)
Lecturer:	Luis Filipe Caeiro Castanheira (LCC)