Course Unit Description - (LASIR)

(Robotic Systems Laboratory)

(Mestrado em Engenharia Electrotécnica e de Computadores)

Academic year: 2008/2009

isep

Subject group: Automação e Robótica

	Semestral	**Compulsory**			
Mode of study	Diurno	**Hours/Week**	**PL-**Prática-Laboratorial		9
Year	1º				
Semester	2º				
		ECTS	9		

Objectives

This course intends to provide the practical background for the usage, selection, application or development of mobile robots and control architectures for autonomous systems.

Course Contents

The course uses an engineering problem to be solved involving a mobile robot as a setup to develop and integrate the students knowledge and skills.
The students therefore analyze and specify a particular complex engineering problem in the multiple robotics area, and design a solution. This solution is implemented and validated resulting in a functional prototype.

Recommended reading

Art of Systems Architecting, Eberhardt Rechtin, Mark Maier, CRC Press, 2002
Systems Analysis and Design, Alan Dennis, Roberta M. Roth, John Wiley & Sons 2005
Introduction to Autonomous Mobile Robots, Roland Siegwart, Illah R. Nourbakhsh, MIT Press 2004
Embedded Microprocessor Systems (Embedded Technology Series): Real World Design Stuart Ball, Elsevier Books, 2002

Teaching Methods

Development of an engineering project comprising the phases: requirements analysis, project design and implementation. The necessary technical documentation is also developed.

Assessment methods

The assessment will be performed though the evaluation of the final project presentation (prototype and documentation) along with partial evaluation of the requirements analysis and solution design phases.

	Name
Teacher responsible:	Alfredo Manuel Oliveira Martins (AOM)
Lecturer:	Alfredo Manuel Oliveira Martins (AOM) Eduardo Alexandre Pereira da Silva (EPS) José Miguel Soares de Almeida (JSA) José Manuel Andrade de Matos (JMA)