



**DOCTORAL PROGRAMME
IN
ELECTRICAL AND COMPUTER
ENGINEERING**

2009-2010

**Annual Annex to the Document
Programme Guidelines**

Scientific Committee

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1 INTRODUCTION

This document is the 2009-2010 annex to the general document "PROGRAMME GUIDELINES". This annex presents relevant and specific information for the academic year 2009-2010, including:

- Important dates, fees and other information
- Calendar
- Streams and courses offered in 2009-2010

1.1 Important dates for application to the programme

For 2009 -2010 academic year, the application deadline is August 28, 2009. However, the application process is permanently opened through the academic year with monthly evaluations. The candidates will be informed of the admission to the programme within one month after the deadline. The accepted candidates should start the studies in the semester immediately after being notified.

1.2 Fees

The annual fee is 3.000,00 Euros.

1.3 How to apply

For application the candidates should submit electronically through the FEUP website <http://www.fe.up.pt>. The application should include the following documents:

- Education certificates
- Curriculum Vitae
- Copy of the passport or other identity document
- 2 letters of recommendation
- Photograph

The selection criterion is based on the CV of the candidate and on the overall marks in the undergraduate courses. A minimum of 16 out of 20 is required. All other cases will be evaluated by the PDEEC Scientific Committee in a case by case analysis. An overall mark in the range 14/20 to 16/20 will require a strong recommendation letter. The other cases can be exceptionally considered if strongly recommended by a Professor of the DEEC-FEUP.

For any additional information you may contact the PDEEC Secretariat.

PDEEC Secretariat:

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2 Streams and Courses offered in 2009-2010

PDEEC courses are organized in two semesters. First year students typically select two main streams plus two electives. Each main stream is composed of two courses (one course per semester). The electives are chosen within PDEEC or other doctoral programmes at FEUP. Seminars and Individual Topics are additional courses intended to help the student start the research work, and to prepare the thesis research plan under the supervision of a professor. Students must find a thesis supervisor during the first semester. The research plan needs to be discussed and approved by the Supervisory Committee at the end of the first year.

The general organisation of the programme is as follows:

1 st Semester	2 nd Semester
Seminars	Individual Topics
Main Stream 1 (two courses)	
Main Stream 2 (two courses)	
Elective 1	Elective 2

The PDEEC courses offered for 2009-2010 are shown in the following table. The student's course plan needs to be approved by the PDEEC Scientific Committee.

The streams opened in 2009-2010 are the following:

- Energy Markets (**ENMAR**)
- Power System Dynamics and Control (**PSDCO**)
- Systems and control (**SYCON**)
- Discrete Event and Hybrid Systems (**DEHSY**)
- Image Recognition and Machine Learning (**IMRML**)
- Microelectronics and Microsystems (**MICRO**)
- Test Technology and Design for Testability (**TTDTE**)
- Operations Research (**OPRES**)
- Robotics (**ROBOT**)
- Embedded Real-Time Systems (**ERTS**)

The students can select as Electives the courses in the other streams or from other Doctoral Programmes at FEUP with similar number of ECTS, namely:

1. Doctoral Programme on Sustainable Energy Systems (PDSSE)
<http://paginas.fe.up.pt/~pdsse/>
2. Doctoral Programme in Informatics Engineering
<http://paginas.fe.up.pt/~prodei/site/presentation.php>
3. Doctoral Programme in Telecommunications (MAP-TELE)
<http://www.map.edu.pt/tele>

This selection needs approval from the PDEEC Scientific Committee and requires acceptance from the PhD Programme from which the student has selected the elective(s).

The courses offered in 2009-2010 are listed in the following table.

STREAM	COURSES	
	Course coordinator, Other lecturers	
	1 st Semester	2 nd Semester
Energy Markets (ENMAR)	Markets and Regulation J. Tomé Saraiva	Market Simulation Gerald Scheblé
Power System Dynamics and Control (PSDCO)	Signals, Dynamics and Control J. Peças Lopes Maria Helena Vasconcelos	Systems with Renewables J. Peças Lopes Cláudio Monteiro
Systems and Control (SYCON)	Vector Space Methods Maria do Rosário Pinho Aníbal Matos	Measure Theory and Stochastic Processes Paulo Lopes dos Santos, Fernando Fontes
Discrete Event and Hybrid Systems (DEHSY)	Discrete Event Systems Fernando Lobo Pereira	Hybrid Systems Fernando Lobo Pereira João Sousa
Image Recognition and Machine Learning (IMRML)	Machine Learning Jaime Cardoso Aurélio Campilho	Image Analysis and Recognition Aurélio Campilho Ana Maria Mendonça
Microelectronics and Microsystems (MICRO)	Microelectronic and Microelectromechanical Technologies José Machado Silva Luís Rocha	Advanced Microelectronic Systems Design José Carlos Alves João Canas Ferreira
Test Technology and Design for Testability (TTDTE)	Test and Design for Testability José Martins Ferreira José Machado Silva, Hélio Mendonça	Instrumentation and Systems Testing José Machado Silva José Martins Ferreira, Hélio Mendonça
Operations Research (OPRES)	Decision Support Maria Antónia Carravilla José Fernando Oliveira	Optimization Techniques José Fernando Oliveira Maria Antónia Carravilla Maria Cristina Ribeiro
Robotics (ROBOT)	Robotic Manipulators António Paulo Moreira Paulo Costa	Mobile Robotics Paulo Costa António Paulo Moreira, Aníbal Matos
Embedded Real-Time Systems (ERTS)	Real-Time Embedded Systems Luís Almeida, Stefan Petters, Arvind Easwaran	Parallel and Distributed Embedded Systems Eduardo Tovar, Bjorn Andersson, Pedro Souto
ELECTIVES		
	Computational Intelligence and Power Systems Vladimiro Miranda	Grid Computing A. Pimenta Monteiro
	Signal Analysis, Classification and Processing José Carlos Príncipe, Aníbal Ferreira, Diamantino Freitas	Non-linear Control Fernando Lobo Pereira Maria Paula Malonek
	Ubiquitous Embedded Systems João Barros, Mário Alves, Shashi Prabh	Hardware/Software System Development José Carlos Alves, João Canas Ferreira, João Cardoso
	Special Topics Lecturers to be defined	Reliable and concurrent software Special Topics Miguel Pinho, Mário Sousa, Paulo Portugal Lecturers to be defined
INDIVIDUAL TOPICS		
	Seminars Jaime Cardoso, Ricardo Morla	Individual Topics Aurélio Campilho

3 Lecturers in 2009-2010

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