

PhD Program in Electrical and Computer Engineering

Course: ADVANCED TOPICS IN COMPUTATIONAL AND PERCEPTIONAL SYSTEMS (2018-2019)

SCOPE

- 1) Select (at least) two units of the following proposed units (see syllabus document):
 - Structure and dynamics of complex Systems;
 - Modeling formalisms for embedded systems and cyber-physical systems;
 - Knowledge Discovery and Data Mining;
 - Image Processing;
 - Globally asynchronous locally synchronous (GALS) Systems;
 - Other approaches in perception
- 2) For the selected units perform a joint work, whose assessment will be made by the corresponding professors (of the selected units).
- 3) The work may take the following forms:
 - a. Development of a prototype and corresponding report
 - b. Realization of field work (e.g. in an external research group) and corresponding report
 - c. Preparation of a monography on a specific topic.
- 4) The written outcome should include references to bibliography, main research groups and current hot topics on the chosen area.
- 5) Prepare 1- 4 pages synthesis of the work per unit.
- 6) Prepare a Powerpoint presentation (40 min).

EVALUATION CRITERIA

The evaluation criteria will take into account:

- Demonstration of the level of understanding of the area and capacity to structure, interlink and synthesize concepts, trends and challenges. [30%]
- Synthesis and critical spirit capabilities. [20%]
- Quality of identified bibliographic references. [15%]
- Identification of main players and research agenda in the area (main research groups and current hot topics). [10%]
- Quality of the presentation and discussion. [25%]

TIMING

- The presentation seminar will take place in June or July 2019.
- The presentation will include up to 40 min presentation and 20 min discussion.
- All presentations (of all students) will take place in the same day

Responsible professor: Luis Gomes

Other professors involved: J. M. Fonseca, R. Gonçalves, P. Sousa, J. P. Pimentão, A. Costa,
A. Mora, P. Maló, F. Moutinho.