

Seminar on Embedded Systems

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The Seminar on Embedded Systems will happen in the last lectures of the semester and will consist on presentations by the students about the themes listed in the following section.

Each presentation will have a 30 minutes period:

- 20 minutes for the presentation and
- 10 minutes for questions or debate.

- A. Operating Systems and Communication
- B. Application Fields and Sensing
- C. Embedded Systems Languages
- D. Languages for Modeling

- A1. Operating systems for sensors in networks
 - Operating systems and run-time platforms for sensor networks. Consider its functionalities and programming model (avoid tinyOS)
- A2. Real-time operating systems
 - Operating systems for real time applications. Consider its functionalities and programming model.
- A3. Networks for embedded systems
 - Types of networks used in embedded systems.

- B1. Computing systems architectures in automotive platforms
 - The software architectures used in today automobiles, buses and trucks.
- B2. Computing systems architectures in avionics
 - The software architectures used in today airborne platforms.
- B3. Computing systems architectures in digital TV
 - The software architectures used in today TV sets and set-top boxes.
- B4. Computing systems architectures in home appliances
 - The software architectures used in today home appliances.
- B5. Medical
 - Embedded systems applied in medical devices and its software architectures.
- B6. NFC devices and identifiers
 - Devices for identification and tagging based on near field communication (NFC) protocols. Programming interfaces.

- C1. SystemC
 - Where is used, its characteristics, its advantages and shortfalls
- C2. B#
 - Where is used, its characteristics, its advantages and shortfalls

- D1. Rhapsody
 - Where is used, its characteristics, its advantages and shortfalls, and how it compares with UML
- D2. Vertaf
 - Where is used, its characteristics, its advantages and shortfalls, and how it compares with UML
- D3. Sysml
 - Where is used, its characteristics, its advantages and shortfalls, and how it compares with UML

- The themes are to be developed and presented by groups of two students.
- The groups are the same as for the project
- Each group must register for the themes of his preference by e-mail, with the following information:
 - Subject: [ASE] ...
 - 4 preferred themes, clearly identifying the order of preference
 - Students numbers and names

Each group must prepare and submit a paper until 27th of November, 23h59:

- Paper with 4 pages max.
- Structured as a research paper.
- In pdf format

The presentations, in ppt or pdf format, must be sent by e-mail until 12 PM the day before.

The relevant dates are the following:

- October 5: Presentation and publication of the themes
- October 5-7: Groups of students choose the preferred themes
- October 9: Publication of the distribution of themes by the groups of students
- November 27, 23h59: Papers submission by e-mail.
- November 30, December 1: (Preliminary, to be confirmed)
Seminar sessions