

Τίτλος (Ελλ.)	Τίτλος (Αγγλ.)	Υπεύθυνος	Διδάσκοντες
Ενσωματωμένα Συστήματα και Συστήματα Πραγματικού Χρόνου	Embedded and Real-Time Systems	ΑΡΒΑΝΙΤΗΣ	ΑΡΒΑΝΙΤΗΣ, ΛΟΥΚΑΤΟΣ, ΠΡΟΣΚΕΚΛΗΜΕΝΟΙ ΕΙΣΗΓΗΤΕΣ

Περιγραφή

These lecture series are dedicated in communicating the fundamentals of Embedded and Real-Time Systems, with emphasis on their agricultural exploitation.

The areas being covered include but are not limited to:

Basic digital and analog circuit principles, basic microcontroller architectures, the role of registers, memory, interrupts. Arduino and raspberry pi boards as platforms for application development, experimentation and learning. Special hardware acceleration modules. Linux shell commands and script programming, python and C exemplification. Interconnection between different systems, sensors and actuators. Exploitation of tablet and smart phone devices. Performance evaluation measurements.

WEEK	Course Contents
1 ST	Analog and digital electronic circuits (I)
2 ND	Analog and digital electronic circuits (II)
3 RD	Microcontroller architectures and functions (I)
4 TH	Microcontroller architectures and functions (II)
5 TH	Arduino and raspberry pi boards as basis for experimentation
6 TH	Connecting specific-purpose hardware modules on the main unit
7 TH	C and python languages as tools for embedded system programming
8 TH	Operating systems for embedded and real-time environments
9 TH	Asynchronous events and interrupt handling
10 TH	Synchronization and time management
11 TH	Tablets and smart phones for facilitating the interaction with the embedded devices
12 TH	Measurement and performance evaluation techniques
13 TH	Field experimentation paradigm with emphasis on agricultural applications

Μέθοδος Αξιολόγησης

Assessment method: A combination of written exams and project assignments during the semester