Τίτλος (Ελλ.)	Τίτλος (Αγγλ.)	Υπεύθυνος	Διδάσκοντες
Εξελιγμένα και Αυτόνομα Οχήματα και Μηχανήματα	Enhanced and Autonomous Machinery and Vehicles	ΛΟΥΚΑΤΟΣ	ΛΟΥΚΑΤΟΣ, ΑΡΒΑΝΙΤΗΣ, ΦΟΥΝΤΑΣ, ΠΡΟΣΚΕΚΛΗΜΕΝΟΙ ΕΙΣΗΓΗΤΕΣ

Περιγραφή

These lecture series are dedicated in communicating the fundamentals of Enhanced and Autonomous Machinery and Vehicles, with emphasis on their agricultural exploitation.

The areas being covered include but are not limited to:

Justifying the need for smarter machines and vehicles in agriculture. Electromechanical requirements and automatic control methods. Guidelines for the selection of sensor, actuator, microcontroller and networking equipment. Techniques for handling heterogeneous signals in real-time environments. Cyber-physical system basics. Methods for selecting the participating components. Automatic control fundamentals. Energy efficiency and sustainability guidelines. Ergonomics and security. Evaluation techniques. Exemplification with actual robots for agricultural purposes.

WEEK	Course Contents
1ST	Defining the role of smarter machines in agriculture
2ND	Electromechanical requirements and implementation directions
3RD	Automatic control fundamentals (I)
4TH	Automatic control fundamentals (II)
5TH	Selecting sensor, actuator, microcontroller and network elements
6TH	Adding intelligence to the robots
7TH	Handling heterogeneous signals in real-time conditions
8TH	Emphasizing on camera and GPS sensor assisted vehicles for fluent navigation
9TH	Incorporating directions for energy efficiency and sustainable operation
10TH	Recording and evaluating the behavior of the robotic machines
11TH	Addressing security and ergonomics issues
12TH	Testing diverse implementations using custom agricultural robotic vehicles
13TH	Experimentation with emphasis on agricultural applications

Μέθοδος Αξιολόγησης

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