

*EE447-2: Computer Control*

Course code and name	EE447-2: Computer Control
Credits units	2 Credit units
Contact hours	4 Contact hours: 1 lecture, 1 tutorial and 2 practical
Instructor name	
Textbook	Ioan D. Landau and Gianluca Zito, Digital Control Systems Design, Identification and Implementation, Springer, 2006.
Other supplemental materials	-
Specific course information	
a. Course description	This course will give the students a sufficient background on the basic concepts of using computer in modern control systems designs and recognize the difference computer algorithms that are used in programming of digital controller.
b. Prerequisite	EE444-3
c. Required / Elective	Elective
Course Learning Outcomes	
<u>CLO of the Lecture Activities:</u>	
CLO1: Discuss the principles of operation of common sensors and actuators, A/D-D/A converters.	
CLO2: State and apply basic definitions in measurements.	
CLO3: Apply standard design techniques for common control algorithms (PID, feedforward).	
CLO4: Discuss and analyze issues related to controller discretization and signal/parameter quantization.	
CLO5: Use computer software to implement embedded controllers.	

CL0 of the Laboratory Activities:

CL01: Verify theory and to improve knowledge learned in class.

CL02: Formulate and solve problems related to theory.

CL03: Design and safety conducts an experimental procedure.

CL04: Independently perform accurate quantitative measurements, interpret experimental results, perform calculations on these results and draw a reasonable, accurate conclusion.

CL05: Communicate critical analysis of scientific information through written reports.

CL06: Be integrated inside a group of work and respect the team working.

**Brief list of topics to be covered**

- Examples of computer controlled systems
- Instrumentation
- Real-Time and Discretization Issues
- Software and Hardware Platforms
- Actuators
- Control Algorithms and Procedures

**Mapping Course Learning Outcomes to Student Outcomes**

	Lecture Activities						
	S01	S02	S03	S04	S05	S06	S07
CL01							
CL02							
CL03							
CL04							
CL05							

	Laboratory Activities						
	S01	S02	S03	S04	S05	S06	S07
CL01							
CL02							
CL03							
CL04							
CL05							
CL06							