

428EE-3 : Applied Control	كهر 3-428 : التحكم التطبيقي
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Program/Department	Electrical Engineering Program	Code	EE
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1. Course number and name	
Course Code	428EE-3
Course Title	Applied Control
2. Credits and contact hours	
Credit Hours	3(3, 0, 1) Credit Hours (theory , Lab/practical , tutorial)
Contact Hours	3 Hours / week for 15 weeks
3. Instructor's or course coordinator's name	
Name of Instructors	Assoc. Prof. Dr. Yousfi Khemissi
Name of coordinator	Assoc. Prof. Dr. Yousfi Khemissi
4. Text book, title, author, and year	
Text Book	"Automatic Control Systems", Kou, Prentice-Hall, 1995.
other supplemental materials	1. Katsuhiko Ogata, "Modern Control Engineering", Prentice Hall 2010. 2. http://ctms.engin.umich.edu/CTMS/index.php?aux=Index_Tutorials
5. Specific course information	
catalog description	Basics of system modeling and analysis; PID controller design; Transducers and actuators; Real time control; Control applications (power systems, robotics, etc.); Control design project.
prerequisites	323EE-3 (Automatic Control)
co-requisites	
indicate whether a required, elective, or selected elective	Core (required)
6. Specific goals for the course	
a. specific outcomes of instruction (student should be able to:)	
CLO1	Define and classify applied control strategies for industrial applications.
CLO2	Model and Analyze different electrical and mechanical systems.
CLO3	Analyze the transient Analysis of different electrical and mechanical systems.
CLO4	Analyses of different control method such as root locus, frequency domain, state space for different electrical and mechanical systems.
CLO5	Design and Analysis of P, PI, and PID controllers using the previous control methods.
CLO6	Compute the PID controller parameters via Matlab Simulink and control toolbox.

b. explicitly indicate which of the student outcomes listed in Criterion 3 or any other outcomes are addressed by the course.	

SO CLO	a	b	c	d	e	f	g	h	i	j	k	
CLO1	1										1	
CLO2	1	1									1	
CLO3	1				1		1				1	
CLO4	1	1			1		1				1	
CLO5	1	1	1	1	1		1				1	
CLO6	1	1	1	1	1		1				1	
7. Brief list of topics to be covered												
Topic 1.	Introduction to control and its industrial applications.											
Topic 2.	The rule of transducers and actuators in open loop and closed loop control systems.											
Topic 3.	Modeling and analysis of dynamic models of different systems such as mechanical and electrical systems including models of motor position and speed, and cruise control systems.											
Topic 4.	Transient analysis of mechanical and electrical systems.											
Topic 5.	Design and analysis of P, PI, and PID control strategies.											
Topic 6.	Application of root locus and frequency domain and state space methods in the design of controllers.											
Topic 7.	Application of Matlab Simulink and control toolbox for dc motor and robot controller design.											