Course code and name	EE445-2: Special Topic in Control
Credits units	2 Credit units
Contact hours	4 Contact hours: 1 lecture, 1 tutorial and 2 practical
Instructor name	
Textbook	Roland S. Burns, Advanced Control Engineering, Library of Congress Cataloguing in Publication Data, ISBN 7506 5100 8
Other supplemental materials	-
Specific course information	
a. Course description	This course will give the students a sufficient background on the Expert and Fuzzy Control, Variable Structure Control, Neural Network Control.
b. Prerequisite	EE444-3
c. Required / Elective	Elective
Course Learning Outcomes	

CLO of the Lecture Activities:

CLO1: Understand fundamental limits of control & estimation.

CLO2: Use advanced mathematical techniques to formulate and solve control problems.

CLO3: Appreciate issues of robustness, optimality, architecture and uncertainty in control problems.

CLO4: Identify practical challenges in posing control problems.

CLO of the Laboratory Activities:

CLO1: Verify theory and to improve knowledge learned in class.

CLO2: Formulate and solve problems related to theory.

CLO3: Design and safety conducts an experimental procedure.

CLO4: Independently perform accurate quantitative measurements, interpret experimental results, perform calculations on these results and draw a reasonable,

accurate conclusion.

CLO5: Communicate critical analysis of scientific information through written reports.

CLO6: Be integrated inside a group of work and respect the team working.

Brief list of topics to be covered

- Review of linear control systems

- Static constrained optimization

- Calculus of variations

- Dynamic optimization

- Bellman's principle of optimality

- Two-point boundary value problems and Rickety equations

- Linear quadratic regulator

- Learning and adaptation in controllers

Mapping Course Learning Outcomes to Student Outcomes								
		Lecture Activities						
		SO1	SO2	SO3	SO4	SO5	SO6	SO7
	CLO1							
	CLO2							
	CLO3							
	CLO4							
		Laboratory Activities						
		SO1	SO2	SO3	SO4	SO5	SO6	SO7
	CLO1							
	CLO2							

CLO3							
CLO4							
CLO5							
CLO6							