EE431-2: High voltage applications

Course code and name	EE431-2: High voltage applications
Credits units	2 Credit units
Contact hours	4 Contact hours: 1 lecture, 1 tutorial and 2 practical
Instructor name	
Textbook	Mazen Abdel-Salam, Hussein Anis, Ahdab El-Morshedy, and Roshdy Radwan, High-Voltage Engineering, Theory and Practice, Second Edition, Revised and Expanded, Marcel Dekker, inc.New York,Basel, 2000
Other supplemental materials	-
	Specific course information
a. Course description	This course will give the students an introduction to the applications of High Voltage engineering , high-voltage power supplies , high-voltage presence and applications in industrial (Electrostatic Precipitation, Electrostatic Painting/Coating- Electrostatic Printing, etc.), high voltage to initiate ionization in dielectric materials (ignition in internal combustion engines, gas-discharge Lamps, etc.) live working in high voltage, Grounding of high voltage power systems Hazards And Safety.
b. Prerequisite	EE426-3 and EE429-3
c. Required / Elective	Elective
	Course Learning Outcomes
CLO of the Lecture Activities: CLO1: Describe and apply knowledge of mathematics, science and electrical engineering to the solution of high voltage fundamentals, principles and applications. CLO2: Solve complex high voltage industrial problems. CLO3: Design selected high voltage complex components and subsystems with appropriate consideration for public safety.	

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

- Introduction to High Voltage and Electrical Field
- Electrical Breakdown Theory
- Over-voltages in Electrical Systems
- Insulation Coordination
- Electrical Discharges
- Introduction to High Voltage Generation and Measurement

Mapping Course Learning Outcomes to Student Outcomes

	Lecture Activities						
	SO1	SO2	SO3	SO4	SO5	SO6	SO7
CLO1							
CLO2							
CLO3							
	Laboratory Activities						
	SO1	SO2	SO3	SO4	SO5	SO6	SO7
CLO1							
CLO2							
CLO3							

CLO4							
CLO5							
CLO6							