EE215-3: Measurements

Course code and name	EE215-3: Measurements
Credits units	3 Credit units
Contact hours	5 Contact hours: 2 lecture, 1 tutorial and 2 practical
Instructor name	Dr. Slim Abid
Textbook	Prithwiraj Purkait, ''Electrical and Electronics Measurements and Instrumentation'' Copyright©2013, by McGraw Hill Education (India) Private Limited ISBN (13): 978-1-25-902959-2.
Other supplemental materials	K. Sawhney, ''Electrical and Electronic Measurements Instruments and instrumentation'', India 2014.
	Specific course information
a. Course description	This course will give the students a sufficient background on the concepts of electrical and electronic measurements. All the detail of electrical and electronic measurements instruments are presented for Analog circuits level 6^{th}.
b. Prerequisite	EE271-3
c. Required / Elective	Required
	Course Learning Outcomes

CLO of the Lecture Activities:

CLO1: Recognize the different types of errors in measurement, calibration process and standards.

CLO2: Calculate the error associated to the measuring devices, and perform error analysis.

CLO3: Use AC and DC bridges for measuring the unknown parameter of the Electrical circuit.

CLO4: Explain different types of measuring instruments; their construction, operation and characteristics.

CLO5: Calculate multipliers or shunts values to obtain specific meter ranges of voltage and current.

CLO6: Recognize the main different types of transducer (construction, operation and characteristics) and their uses.

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

- Measurements and Generalized Measurements System
- Measurement of Resistance
- DC Meters
- AC Current meters
- Alternating-current Bridges
- Digital instrument
- Measurement of Power and energy
- Transducers

Mapping Course Learning Outcomes to Student Outcomes

	Lecture Activities						
	SO1	SO2	SO3	SO4	SO5	SO6	SO7
CLO1							
CLO2							
CLO3							
CLO4							
CLO5							
CLO6							
	Laboratory Activities						
	SO1	SO2	SO3	SO4	SO5	SO6	SO7

CLO1							
CLO2							
CLO3							
CLO4							
CLO5							
CLO6							