

EEX3410 Introduction to Electrical Engineering

Level	3
Course Code	EEX3410
Course Title	Introduction to Electrical Engineering
Credit value	4
Core/Optional	Core
Course Aim/s	Aim of this course is to provide basic principles of Electrical Engineering and its applications
Course Learning Outcomes (CLO):	<p>At the completion of this course student will be able to:</p> <p>CLO1: Perform analysis of simple capacitor circuits computing electrostatic interactions</p> <p>CLO2: Describe basic circuit theories of electricity by using first order passive circuits</p> <p>CLO3: Analyse DC and AC circuits using the basic circuit theories</p> <p>CLO4: Analyse linear magnetic and electro-magnetic circuits using basic magnetic circuit theories</p> <p>CLO5: Describe the operating principles of electrical machines using electro-magnetic principles</p> <p>CLO6: Describe generation and transmission of electric energy and the safe & efficient use in the household</p> <p>CLO7: Describe characteristics of ideal and real semiconductor diodes and its applications</p> <p>CLO8: Describe the use of basic transistor circuits for amplification and switching</p> <p>CLO9: Perform laboratory experiments accurately and safely using appropriate measuring instruments</p>
Content (Main topics, sub topics)	<p>Outline Syllabus:</p> <p>Unit 1: Electrostatics Session 01: Introduction to Electrostatics Session 02: Electric Flux & Electric Potential Session 03: Capacitors</p> <p>Unit 2: DC Circuits Session 04: Voltage-Current relationship in DC circuits Session 05: Kirchhoff's Laws Session 06: Circuit Theories</p> <p>Unit 3: Electromagnetism Session 07: Introduction to Magnetism Session 08: Magnetic Flux Session 09: Effects of Magnetic Flux Session 10: Magnetic circuits Session 11: Electromagnetic Induction Session 12: Transients in DC circuits</p> <p>Unit 4: AC Circuits Session 13: Fundamentals of Waveforms Session 14: Voltage-Current relationship in AC circuits Session 15: RLC circuit calculations Session 16: Power in AC circuits</p> <p>Unit 5: Electrical Machines Session 17: Basics of Rotating Machines</p>

	<p>Session 18:Transformers</p> <p>Unit 6: Electrical Measurements</p> <p>Session 19:Principles of Measuring Instruments</p> <p>Session 20:Operating Measuring Instruments</p> <p>Unit 7: Electrical Power Generation & Transmission</p> <p>Session 21:Generation of Electrical Power</p> <p>Session 22:Transport of Electric Energy</p> <p>Unit 8: 3-phase Systems</p> <p>Session 23:Introduction to Three-phase Systems</p> <p>Session 24:Three-phase Power</p> <p>Unit 9: Electrical Installations</p> <p>Session 25:Electrical Safety</p> <p>Session 26:Domestic Wiring</p> <p>Unit 10: Electronics</p> <p>Session 27:Semiconductor Diode</p> <p>Session 28:Diode circuits</p> <p>Session 29:Transistors</p> <p>Session 30:Transistor applications</p>
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