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):	At the completion of this course student will be able to: CLO1: Perform analysis of simple capacitor circuits computing electrostatic interactions CLO2: Describe basic circuit theories of electricity by using first order passive circuits CLO3: Analyse DC and AC circuits using the basic circuit theories CLO4: Analyse linear magnetic and electro-magnetic circuits using basic magnetic circuit theories CLO5: Describe the operating principles of electrical machines using electro-magnetic principles CLO6: Describe generation and transmission of electric energy and the safe & efficient use in the household CLO7: Describe characteristics of ideal and real semiconductor diodes and its applications CLO8: Describe the use of basic transistor circuits for amplification and switching CLO9: Perform laboratory experiments accurately and safely using appropriate measuring instruments
Content	**Outline Syllabus:** Unit 1: Electrostatics Unit 2: DC Circuits Unit 3: Electromagnetism Unit 4: AC Circuits Unit 5: Electrical Machines Unit 6: Electrical Measurements Unit 7: Electrical Power Generation & Transmission Unit 8: 3-phase Systems Unit 9: Electrical Installations Unit 10: Electronics **Laboratory work:** **Three experiments are conducted during 6 sessions – 3 days** 1. Verification of Kirchchoff law for DC circuits 2. Measure the fundamental characteristics of AC signals using oscilloscope 3. Verification of characteristics of non-linear components