

EEX3410 Introduction to Electrical Engineering

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| <b>Level</b>                           | 3  |
| <b>Course Code</b>                     | EEX3410  |
| <b>Course Title</b>                    | Introduction to Electrical Engineering   |
| <b>Credit value</b>                    | 4  |
| <b>Core/Optional</b>                   | Core   |
| <b>Course Aim/s</b>                    | Aim of this course is to provide basic principles of Electrical Engineering and its applications   |
| <b>Course Learning Outcomes (CLO):</b> | <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 &amp; 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> |
| <b>Content</b>                         | <p><b>Outline Syllabus:</b></p> <p>Unit 1: Electrostatics<br/> Unit 2: DC Circuits<br/> Unit 3: Electromagnetism<br/> Unit 4: AC Circuits<br/> Unit 5: Electrical Machines<br/> Unit 6: Electrical Measurements<br/> Unit 7: Electrical Power Generation &amp; Transmission<br/> Unit 8: 3-phase Systems<br/> Unit 9: Electrical Installations<br/> Unit 10: Electronics</p> <p><b>Laboratory work:</b></p> <p><b>Three experiments are conducted during 6 sessions – 3 days</b></p> <ol style="list-style-type: none"> <li>1. Verification of Kirchhoff law for DC circuits</li> <li>2. Measure the fundamental characteristics of AC signals using oscilloscope</li> <li>3. Verification of characteristics of non-linear components</li> </ol>  |