Electrical Engineering II	COE106
Prerequisite : COE102	(4-3-1-3)

Sinusoidal Alternating Current Fundamentals: Generation of Alternating Voltages and Currents, Equations of Alternating Voltages and currents, Simple and Complex Waveforms, Basic terminologies, Root Mean Square (R.M.S.) Value, Average Value, Form Factor and Peak Factor. Vectors and Phasors. AC Power Calculations: Active, Reactive and Apparent Power, Power in Complex Form, Power Triangle, Power Factor. Series and Parallel Combinations of AC Circuits: Series Combinations of Various Circuit Elements, Parallel Combinations of Various Circuit Elements. Resonance in AC Circuits: Resonance in series and parallel circuits, Graphical Representation, Quality Factor, Half-power Bandwidth of Resonant Circuit, Bandwidth at any off Resonance Frequency, Determination of Upper and Lower Half-Power Frequencies. Circuit Transformations, Theorem and Analysis in AC Circuits: Series Combinations and Voltage Division, Parallel Combinations and Current Division, Y-Delta Transformations, Source Transformations, Ohm's Law, Kirchhoff's Laws, Mesh Analysis, Nodal Analysis, Superposition, Thevenin's Theorem, Norton's Theorem, Maximum Power Transfer.

Practical part: Maximum Power Transfer Theorem. AC Voltage Measurement. AC Current Measurement. AC RC Circuit. AC RL Circuit. Power in AC Circuit. Lenz's and Faraday's Laws. Fleming's Rule.