

## Electric Energy Systems (I)

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- Concepts and models of basic elements - sources, resistor, inductor, capacitor, ideal transformer, etc
  - Analysis of electrical circuits - KCL, KVL, nodal analysis, mesh analysis, etc
  - First order circuits - RL, RC, time constant, transient response, steady state response, etc
  - Circuit theorems - Thevenin, superposition, the maximum power transfer, reciprocity, etc.,
  - Sinusoidal steady state analysis - phasor, impedance, admittance, power factor, etc
  - Three phase systems - introduction, balanced symmetric systems, etc
  - Recalling the principles of electromagnetics - magnetic flux, intensity, flux density, electromagnetic induction, etc
  - The basic concepts of magnetic circuits - reluctance, energy, coenergy, energy conversion, etc
  - Single phase transformers - model, analysis, voltage regulation, etc
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