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Overview:

- * introduction, basic physical laws, circuit elements
- * KVL, KCL, and circuit theorems, simple circuits
- * transients in RL , RC , RLC , sinusoidal steady state, real/reactive power, three-phase circuits
- * working principles of transformers, AC/DC machines
- * characteristics of diodes, BJT, Op-Amp
- * analog circuit Examples: rectifiers, amplifiers, oscillators
- * digital circuits: AND/OR gates, flip flops, DAC/ADC

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- * A. Dutta, *Semiconductor Devices and Circuits*, Oxford University Press, 2008.
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- * S. Franco, *Design with Operational Amplifiers and Analog Integrated Circuits*, McGraw-Hill, 1997.
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- * R. J. Tocci, N. S. Widmer, and G. L. Moss, *Digital Systems: Principles and Applications*, 10th edition, Prentice Hall (Pearson education), 2009.