NPTEL Video Course - Electrical Engineering - NOC:Basic Electrical Circuits

Subject Co-ordinator - Dr. Nagendra Krishnapura

Co-ordinating Institute - IIT - Madras

Sub-Titles - Available / Unavailable | MP3 Audio Lectures - Available / Unavailable

Lecture 30 - Power and energy in an inductor
Lecture 31 - Power and energy in a voltage source
Lecture 32 - Power and energy in a current source
Lecture 33 - Goals of circuit analysis
Lecture 34 - Number of independent KCL equations
Lecture 35 - Number of independent KVL equations and branch relationships
Lecture 36 - Analysis of circuits with a single independent source
Lecture 37 - Analysis of circuits with multiple independent sources using superposition
Lecture 38 - Superposition
Lecture 39 - What is nodal analysis
Lecture 40 - Setting up nodal analysis equations
Lecture 41 - Structure of the conductance matrix
Lecture 42 - How do elements circuit appear in the nodal analysis formulation
Lecture 43 - Completely solving the circuit starting from nodal analysis
Lecture 44 - Nodal analysis example
Lecture 45 - Matrix inversion basics
Lecture 46 - Nodal analysis with independent voltage sources
Lecture 47 - Supernode for nodal analysis with independent voltage sources
Lecture 48 - Nodal analysis with VCCS
Lecture 49 - Nodal analysis with VCVS
Lecture 50 - Nodal analysis with CCVS
Lecture 51 - Nodal analysis with CCCS
Lecture 52 - Nodal analysis summary
Lecture 53 - Planar circuits
Lecture 54 - Mesh currents and their relationship to branch currents
Lecture 55 - Mesh analysis
Lecture 56 - Mesh analysis with independent current sources-Supermesh
Lecture 57 - Mesh analysis with current controlled voltage sources
Lecture 58 - Mesh analysis with current controlled current sources
Lecture 59 - Mesh analysis using voltage controlled sources
Lecture 60 - Nodal analysis versus Mesh analysis
Lecture 61 - Superposition theorem
Lecture 62 - Pushing a voltage source through a node
Lecture 63 - Splitting a current source
Lecture 64 - Substitution theorem
Lecture 65 - Substitution theorem
Lecture 66 - Substituting a voltage or current source with a resistor
Lecture 67 - Extensions to Superposition and Substitution theorem
Lecture 68 - Thevenin's theorem

Lecture 69 - Worked out example
Lecture 70 - Norton's theorem
Lecture 71 - Worked out example
Lecture 72 - Maximum power transfer theorem
Lecture 73 - Preliminaries
Lecture 74 - Two port parameters
Lecture 75 - y parameters
Lecture 76 - y parameters
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Lecture 78 - z parameters
Lecture 79 - h parameters
Lecture 80 - h parameters
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Lecture 82 - g parameters
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Lecture 84 - Calculations with a two-port element
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Lecture 95 - Ideal opamp
Lecture 96 - Negative feedback around the opamp
Lecture 97 - Finding opamp sign for negative feedback
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