

NPTEL Video Lecture Topic List - Created by LinuXpert Systems, Chennai

NPTEL Video Course - Electrical Engineering - NOC:Analog Circuits

Subject Co-ordinator - Dr. Nagendra Krishnapura

Co-ordinating Institute - IIT - Madras

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

- Lecture 1 - Introduction to the course
- Lecture 2 - Obtaining power gain
- Lecture 3 - Obtaining power gain using a linear two port?
- Lecture 4 - One port (two terminal) nonlinear element
- Lecture 5 - Nonlinear circuit analysis
- Lecture 6 - Small signal incremental analysis-graphical view
- Lecture 7 - Small signal incremental analysis
- Lecture 8 - Incremental equivalent circuit
- Lecture 9 - Large signal characteristics of a diode
- Lecture 10 - Analysis of diode circuits
- Lecture 11 - Small signal model of a diode
- Lecture 12 - Two port nonlinearity
- Lecture 13 - Small signal equivalent of a two port network
- Lecture 14 - Small signal equivalent circuit of a two port network
- Lecture 15 - Gain of a two port network
- Lecture 16 - Constraints on small signal parameters to maximize the gain
- Lecture 17 - Constraints on large signal characteristics to maximize the gain
- Lecture 18 - Implications of constraints in terms of the circuit equivalent
- Lecture 19 - MOS transistor-description
- Lecture 20 - MOS transistor large signal characteristics
- Lecture 21 - MOS transistor large signal characteristics-graphical view
- Lecture 22 - MOS transistor small signal characteristics
- Lecture 23 - Linear (Triode) region of the MOS transistor
- Lecture 24 - Small signal amplifier using the MOS transistor
- Lecture 25 - Basic amplifier structure
- Lecture 26 - Problems with the basic structure
- Lecture 27 - Adding bias and signal-ac coupling
- Lecture 28 - Common source amplifier with biasing
- Lecture 29 - Common source amplifier

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- Lecture 30 - Common source amplifier analysis
- Lecture 31 - Constraint on the input coupling capacitor
- Lecture 32 - Constraint on the output coupling capacitor
- Lecture 33 - Dependence of I_d on V_{ds}
- Lecture 34 - Small signal output conductance of a MOS TRANSISTOR
- Lecture 35 - Effect of g_{ds} on a common source amplifier, Inherent gain limit of a Transistor
- Lecture 36 - Variation of g_m with transistors parameters
- Lecture 37 - Variation of g_m with constant V_{gs} and constant drain current bias
- Lecture 38 - Negative feedback control for constant drain current bias
- Lecture 39 - Types of feedback for constant drain current bias
- Lecture 40 - Sense at the drain and feedback to the gate-Drain feedback
- Lecture 41 - Intuitive explanation of low sensitivity with drain feedback
- Lecture 42 - Common source amplifier with drain feedback bias
- Lecture 43 - Constraint on the gate bias resistor
- Lecture 44 - Constraint on the input coupling capacitor.
- Lecture 45 - Constraint on the output coupling capacitor.
- Lecture 46 - Input and output resistances of the common source amplifier with constant VGS bias
- Lecture 47 - Current mirror
- Lecture 48 - Common source amplifier with current mirror bias
- Lecture 49 - Constraint on coupling capacitors and bias resistance
- Lecture 50 - Diode connected transistor
- Lecture 51 - Source feedback biasing
- Lecture 52 - Common source amplifier with source feedback bias
- Lecture 53 - Constraints on capacitor values
- Lecture 54 - Sensing at the drain and feeding back to the source
- Lecture 55 - Sensing at the source and feeding back to the gate
- Lecture 56 - Ensuring that transistor is in saturation
- Lecture 57 - Using a resistor instead of current source for biasing
- Lecture 58 - Quick tour of amplifying devices
- Lecture 59 - Controlled sources using a MOS transistor-Introduction
- Lecture 60 - Voltage controlled voltage source
- Lecture 61 - VCVS using a MOS transistor
- Lecture 62 - VCVS using a MOS transistor-Small signal picture
- Lecture 63 - VCVS using a MOS transistor-Complete circuit
- Lecture 64 - Source follower
- Lecture 65 - VCCS using a MOS transistor
- Lecture 66 - VCCS using a MOS transistor
- Lecture 67 - VCCS using a MOS transistor
- Lecture 68 - VCCS using a MOS transistor

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- Lecture 69 - Source degenerated CS amplifier
- Lecture 70 - CCCS using a MOS transistor
- Lecture 71 - CCCS using a MOS transistor
- Lecture 72 - CCCS using a MOS transistor
- Lecture 73 - C CVS using a MOS transistor
- Lecture 74 - C CVS using a MOS transistor
- Lecture 75 - C CVS using a MOS transistor
- Lecture 76 - C CVS using a MOS transistor
- Lecture 77 - V CVS using an opamp
- Lecture 78 - C CVS using an opamp
- Lecture 79 - Negative feedback and virtual short in an opamp
- Lecture 80 - Negative feedback and virtual short in a transistor
- Lecture 81 - Constraints on controlled sources using opamps and transistors
- Lecture 82 - Summary of basic amplifiers
- Lecture 83 - Signal swing limits in amplifiers
- Lecture 84 - Swing limit due to transistor entering triode region
- Lecture 85 - Swing limit due to transistor entering cutoff region
- Lecture 86 - Swing limit calculation example
- Lecture 87 - Swing limits - more calculations
- Lecture 88 - pMOS transistor
- Lecture 89 - Small signal model of the pMOS transistor
- Lecture 90 - Common source amplifier using the pMOS transistor
- Lecture 91 - Swing limits of the pMOS common source amplifier
- Lecture 92 - Biasing a pMOS transistor at a constant current; pMOS current mirror
- Lecture 93 - Converting nMOS transistor circuits to pMOS
- Lecture 94 - Bias current generation
- Lecture 95 - Examples of more than one transistor in feedback