

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

NPTEL Video Course - Electrical Engineering - Digital Integrated Circuits

Subject Co-ordinator - Prof. Amitava Dasgupta

Co-ordinating Institute - IIT - Madras

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

- Lecture 1 - Semiconductors
- Lecture 2 - Modelling of PN Junction Diodes
- Lecture 3 - Modelling of BJTs
- Lecture 4 - Diode and BJT Model Parameter Extraction
- Lecture 5 - BJT Inverters DC and Switching Characteristics
- Lecture 6 - Schottky Transistor
- Lecture 7 - Specifications of Logic Circuits
- Lecture 8 - Qualitative discussion on TTL Circuits
- Lecture 9 - Standard TTL Circuits
- Lecture 10 - Schottky (74s..) and Low power Schottky (74ls)
- Lecture 11 - Advanced TTL Circuits
- Lecture 12 - I<sup>2</sup> L Technology
- Lecture 13 - Edge triggered D-F/F
- Lecture 14 - I<sup>2</sup> L - Condition for Proper Operation
- Lecture 15 - I<sup>2</sup> L - Propagation delay Self aligned
- Lecture 16 - Schottky Transistor Logic
- Lecture 17 - Stacked I<sup>2</sup> L
- Lecture 18 - ECL Basic Operation
- Lecture 19 - Quantitative analysis of ECL 10k Series gates
- Lecture 20 - ECL 100k series; Stacked ECL gates; D-F/F
- Lecture 21 - Emitter Function Logic; Low Power ECL
- Lecture 22 - Polyemitter Bipolar Transistor In ECL; Propagation
- Lecture 23 - Heterojunction Bipolar Transistor Based ECL; ECL
- Lecture 24 - nMOS Logic Circuits
- Lecture 25 - nMOS Logic Circuits(contd); CMOS
- Lecture 26 - CMOS Inverter
- Lecture 27 - CMOS NAND, NOR and Other Gates
- Lecture 28 - Dynamic CMOS ; Transmission Gates; Realization Of MUX, decoder, D-F/F
- Lecture 29 - BiCMOS Gates

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- Lecture 30 - BiCMOS Driver;BiCMOS 32-bit Adder
- Lecture 31 - Digital Integrated Circuits
- Lecture 32 - Digital Integrated Circuits
- Lecture 33 - CMOS SRAM
- Lecture 34 - BiCMOS SRAM
- Lecture 35 - DRAM-CMOS and BiCMOS
- Lecture 36 - ROM-EPROM,EEPROM and Flash EPROM
- Lecture 37 - GaAs MESFET Characteristics and Equivalent Circuits
- Lecture 38 - Direct Coupled FET Logic; Superbuffer FET Logic
- Lecture 39 - Buffered FET Logic; Schottky Diode FET Logic
- Lecture 40 - Transmission Line Effects