

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

NPTEL Video Course - Electrical Engineering - NOC: Microwave Engineering

Subject Co-ordinator - Dr. Ratnajit Bhattacharjee

Co-ordinating Institute - IIT - Guwahati

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

Lecture 1 - Introduction to Microwave Engineering
Lecture 2 - Introduction to Transmission Line Theory
Lecture 3 - Lossy Transmission Line
Lecture 4 - Smith Chart
Lecture 5 - Introduction to Waveguides and Rectangular Waveguide
Lecture 6 - Circular Waveguide
Lecture 7 - Attenuation Waveguide
Lecture 8 - N-port microwave networks and equivalent voltages and currents
Lecture 9 - Scattering Matrix (S-Parameters) Part-1
Lecture 10 - Scattering Matrix (S-parameters) Part-2 and Transmission Matrix (ABCD-Parameters)
Lecture 11 - Impedance Matching Using L-Section and Series Stub Networks
Lecture 12 - Impedance Matching Using Shunt Stub, Double Stub and Quarter wave Transformer
Lecture 13 - Multisection Matching Networks and Tapered Lines
Lecture 14 - Series and Parallel RLC Resonators
Lecture 15 - Transmission Line Resonators
Lecture 16 - Waveguide Resonators
Lecture 17 - Introduction to power dividers
Lecture 18 - Directional couplers
Lecture 19 - Microwave Filters - Part 1
Lecture 20 - Microwave Filters - Part 2
Lecture 21 - Characteristics of Microwave BJT and FET
Lecture 22 - PIN Diodes and Control Circuits
Lecture 23 - Schottky Diodes and Detectors and Tunnel Diodes
Lecture 24 - Gunn Diodes, IMPATT Diodes and Varactor Diodes
Lecture 25 - Two-Port Power Gain and Stability
Lecture 26 - Design of single stage transistor amplifier (for maximum gain, specified gain, low noise)
Lecture 27 - RF oscillator
Lecture 28 - Limitations of Conventional Tubes at Microwave Ranges
Lecture 29 - Introduction to Klystron

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- Lecture 30 - Reflex Klystron, Magnetron and TWT
- Lecture 31 - Ferrite Devices
- Lecture 32 - Planar transmission lines for MIC
- Lecture 33 - Lumped elements for MIC
- Lecture 34 - Lumped inductor, HMIC and MMIC
- Lecture 35 - Overview of Radar
- Lecture 36 - Cellular Communication
- Lecture 37 - Satellite Communication and Applications of Microwave