

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

NPTEL Video Course - Mathematics - NOC:Dynamical System and Control

Subject Co-ordinator - Prof.D. N Pandey, Dr. N. Sukavanam

Co-ordinating Institute - IIT - Roorkee

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

Lecture 1 - Formulation of Dynamical Systems - I  
Lecture 2 - Formulation of Dynamical Systems - II  
Lecture 3 - Existence and Uniqueness Theorem - I  
Lecture 4 - Existence and Uniqueness Theorem - II  
Lecture 5 - Linear Systems - I  
Lecture 6 - Linear Systems - II  
Lecture 7 - Solutions of Linear Systems - I  
Lecture 8 - Solutions of Linear Systems - II  
Lecture 9 - Solutions of Linear Systems - III  
Lecture 10 - Fundamental Matrix - I  
Lecture 11 - Fundamental Matrix - II  
Lecture 12 - Fundamental Matrix for Non-Autonomous systems  
Lecture 13 - Solutions of Non-Homogeneous Systems  
Lecture 14 - Stability of Systems  
Lecture 15 - Stability of Linear Autonomous Systems - I  
Lecture 16 - Stability of Linear Autonomous Systems - II  
Lecture 17 - Stability of Linear Autonomous Systems - III  
Lecture 18 - Stability of Weakly Non-Linear Systems - I  
Lecture 19 - Stability of Weakly Non-Linear Systems - II  
Lecture 20 - Stability of Non-Linear Systems using Linearization  
Lecture 21 - Properties of Phase Portrait  
Lecture 22 - Properties of Orbits  
Lecture 23 - Phase Portrait  
Lecture 24 - Phase Portrait of Linear Differential Equations - I  
Lecture 25 - Phase Portrait of Linear Differential Equations - II  
Lecture 26 - Phase Portrait of Linear Differential Equations - III  
Lecture 27 - Poincare Bendixson Theorem  
Lecture 28 - Limit Cycle  
Lecture 29 - Lyapunov Stability - I

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

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Lecture 32 - Introduction to Control Systems - II  
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Lecture 34 - Controllability of Non-autonomous Systems  
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Lecture 59 - Relation between Continuous and Discrete Systems - I  
Lecture 60 - Relation between Continuous and Discrete Systems - II