

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

NPTEL Video Course - Aerospace Engineering - Advanced Control System Design for Aerospace Vehicles

Subject Co-ordinator - Dr. Radhakant Padhi

Co-ordinating Institute - IISc - Bangalore

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

- Lecture 1 - Introduction and Motivation for Advanced Control Design
- Lecture 2 - Classical Control Overview - I
- Lecture 3 - Classical Control Overview - II
- Lecture 4 - Classical Control Overview - III
- Lecture 5 - Classical Control Overview - IV
- Lecture 6 - Basic Principles of Atmospheric Flight Mechanics
- Lecture 7 - Overview of Flight Dynamics - I
- Lecture 8 - Overview of Flight Dynamics - II
- Lecture 9 - Representation of Dynamical Systems - I
- Lecture 10 - Representation of Dynamical Systems - II
- Lecture 11 - Representation of Dynamical Systems - III
- Lecture 12 - Review of Matrix Theory - I
- Lecture 13 - Review of Matrix Theory - II
- Lecture 14 - Review of Matrix Theory - III
- Lecture 15 - Review of Numerical Methods
- Lecture 16 - Linearization of Nonlinear Systems
- Lecture 17 - First and Second Order Linear Differential Equations
- Lecture 18 - Time Response of Linear Dynamical Systems
- Lecture 19 - Stability of Linear Time Invariant Systems
- Lecture 20 - Controllability and Observability of linear Time Invariant Systems
- Lecture 21 - Pole Placement Control Design
- Lecture 22 - Pole Placement Observer Design
- Lecture 23 - Static Optimization
- Lecture 24 - Calculus of Variations
- Lecture 25 - Optimal Control Formulation using Calculus of Variations
- Lecture 26 - Classical Numerical Methods for Optimal Control
- Lecture 27 - Linear Quadratic Regulator (LQR) Design - 1
- Lecture 28 - Linear Quadratic Regulator (LQR) Design - 2
- Lecture 29 - Linear Control Design Techniques in Aircraft Control - I

---

Get Digi-MAT (Digital Media Access Terminal) For High-Speed Video Streaming of NPTEL and Educational Video Courses in LAN

[www.digimat.in](http://www.digimat.in)

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

---

- Lecture 30 - Linear Control Design Techniques in Aircraft Control - II
- Lecture 31 - Lyapunov Theory - I
- Lecture 32 - Lyapunov Theory - II
- Lecture 33 - Constructions of Lyapunov Functions
- Lecture 34 - Dynamic Inversion - I
- Lecture 35 - Dynamic Inversion - II
- Lecture 36 - Neuro-Adaptive Design - I
- Lecture 37 - Neuro-Adaptive Design - II
- Lecture 38 - Neuro-Adaptive Design for Flight Control
- Lecture 39 - Integrator Back-Stepping; Linear Quadratic (lQ) Observer
- Lecture 40 - An Overview of Kalman Filter Theory