

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

NPTEL Video Course - Mechanical Engineering - NOC:Fundamentals of Gas Dynamics

Subject Co-ordinator - Prof.A. Sameen

Co-ordinating Institute - IIT - Madras

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

- Lecture 1 - Introduction
- Lecture 2 - Basics of Thermodynamics
- Lecture 3 - Tutorial 1
- Lecture 4 - Control Volume Approach
- Lecture 5 - Conservation Equations
- Lecture 6 - Tutorial 2
- Lecture 7 - Energy Equation
- Lecture 8 - Concept of stagnation
- Lecture 9 - Discussion on stagnation
- Lecture 10 - Velocity of sound
- Lecture 11 - Discussion on velocity of sound and mach number
- Lecture 12 - Wave propagation
- Lecture 13 - Mach wave
- Lecture 14 - Mach number relations
- Lecture 15 - Variable Area Adiabatic flow
- Lecture 16 - Variable Area Adiabatic flow (Continued...)
- Lecture 17 - \* reference quantities and their relations
- Lecture 18 - Importance of stagnation temperature in relation to v
- Lecture 19 - Discussion on variable area adiabatic flow and \* reference quantities
- Lecture 20 - Gas tables
- Lecture 21 - Converging nozzle
- Lecture 22 - Condition of choked flow and associated properties
- Lecture 23 - Area ratio and pressure ratio in converging nozzles
- Lecture 24 - Discussion on converging nozzles
- Lecture 25 - Converging - Diverging (C-D) nozzles
- Lecture 26 - More on C-D nozzles
- Lecture 27 - Discussion on C-D nozzles - 1
- Lecture 28 - Discussion on C-D nozzles - 2
- Lecture 29 - Examples and applications of flow through C-D nozzles

---

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 - Introduction to normal shocks
- Lecture 31 - Normal shock relations - 1
- Lecture 32 - Normal shock relations - 2
- Lecture 33 - Rankine-Hugoniot equation
- Lecture 34 - Discussion on Normal Shocks - 1
- Lecture 35 - Discussion on Normal Shocks - 2
- Lecture 36 - Normal shocks in C-D nozzles
- Lecture 37 - Normal shocks in C-D nozzles (Continued...)
- Lecture 38 - Moving Normal Shocks
- Lecture 39 - Discussion on moving normal shocks
- Lecture 40 - Oblique shocks
- Lecture 41 - Oblique shock relations
- Lecture 42 - Discussion on oblique shocks
- Lecture 43 - Reflection of oblique shocks
- Lecture 44 - Discussion on reflection of oblique shocks
- Lecture 45 - Prandtl-Meyer flow
- Lecture 46 - Prandtl-Meyer flow (Continued...)
- Lecture 47 - Discussion on Prandtl-Meyer expansion
- Lecture 48 - Shock Polar diagram and Prandtl-Meyer relation for Oblique shocks