

**DEPARTMENT OF
MECHANICAL ENGINEERING**

NPTEL VIDEOS & STUDY MATERIALS



Available at: **COMPUTATIONAL LABORATORY**

GOVERNMENT ENGINEERING COLLEGE

KOZHIKODE

SYSTEM No: 4

(PC - Personal Disk (G) - NPTEL Videos)

Sl. No.	Topics
1.	Basics of Finite Element Analysis
2.	Aircraft stability & Control
3.	Conduction & Convection Heat Transfer
4.	Fluid Mechanics
5.	Gas Dynamics
6.	Introduction to Airplane Performance
7.	Manufacturing Systems Technology
8.	Solid Mechanics
9.	Stress Analysis
10.	Vibration of Structures
11.	Analysis & Modeling of Welding Process

SYSTEM No: 5

(PC - Personal Disk (C) - NPTEL Videos)

Sl. No.	Topics	Sl. No.	Topics
1.	Advanced Heat & Mass Transfer	16.	Complex Analysis
2.	Advanced Gas Dynamics	17.	Composite Materials
3.	Advanced Machine Process	18.	Computational Methods in Design
4.	Advanced Manufacturing Process	19.	Computer Aided Design
5.	Advanced Materials & Process	20.	Dynamics of Machine
6.	Advanced Numerical Analysis	21.	Energy Management System
7.	Advanced Operation Research	22.	Engineering Chemistry
8.	Advanced Solid Mechanics	23.	Engineering Physics
9.	Advanced Strength of Materials	24.	Engineering Mechanics
10.	Aerodynamics	25.	Engine Emissions
11.	Aero gas Dynamics	26.	Finite Difference Method
12.	Applied Mechanics	27.	Finite Element Method
13.	Applied Thermodynamics	28.	Finite Element Analysis
14.	Basic Mathematics	29.	Hydraulics
15.	Basic Thermodynamics		

SYSTEM No: 6

(PC - Personal Disk (C) - NPTEL Videos)

Sl. No.	Topics	Sl. No.	Topics
1.	Industrial Engineering	15.	Management Science
2.	Industrial Instrumentation	16.	Manufacturing Process
3.	Introduction to Combustion	17.	Material Engineering
4.	Introduction to Finite Element Analysis	18.	Material Science
5.	Introduction to Heat Diffusion	19.	Material Science & Engineering
6.	Introduction to Materials	20.	Material Theory
7.	Introduction to Turbulence	21.	Principles of Fluid Dynamics
8.	Kinematics of Machines	22.	Mechanical Measurements
9.	Kinetics and Thermodynamics of Reactions	23.	Mechanical Vibrations
10.	Linear Programming – Introduction & Formulation	24.	Mechanics of Soft Materials
11.	Linear Regression Analysis	25.	Mechanics of Solids
12.	Lubrication	26.	Metal Forming Technology
13.	Machine Design	27.	Metal Processing
14.	Machine Theory		

SYSTEM No: 7

(PC - Personal Disk (C) - NPTEL Videos)

Sl. No.	Topics	Sl. No.	Topics
1.	Metallurgical Engineering	11.	Refrigeration & Air Conditioning
2.	Multiphase Flow	12.	Solar Energy & Thermal Systems
3.	Nanoparticles	13.	Solar Engineering Technology
4.	Non-conventional Energy Systems	14.	Solid & Hazardous Waste Management
5.	Numerical Analysis	15.	Storage Systems
6.	Numerical Solution of Ordinary Differential Equations	16.	Strength of Materials
7.	Ordinary Differential Equations	17.	Thermodynamics
8.	Probability & Distribution	18.	Vibrations of Mechanical Systems
9.	Probability Theory	19.	Volumetric Properties of Real Fluids
10.	Quantum Mechanics		

SYSTEM No: 8

(PC - Personal Disk (C) - NPTEL Videos)

Sl. No.	Topics
1.	Advanced Metallurgical Thermodynamics
2.	Advanced Structural Analysis
3.	An Invitation to Mathematics
4.	Astrophysics & Cosmology
5.	Atomic physics
6.	Basic quantum mechanics
7.	Bio- microelectromechanical System
8.	Calculus of variations & Integral Equation
9.	Chemical Reaction Engineering
10.	Classical Mechanics
11.	Communication Skills
12.	Complex Analysis

SYSTEM No: 9

(PC - Personal Disk (F) - NPTEL Videos)

Sl. No.	Topics
1.	A Basic Course in Real Analysis
2.	Advanced Ceramics for Strategic Applications
3.	Advanced Complex analysis
4.	Advanced Engineering Mathematics
5.	Advanced Foundation Engineering
6.	Advanced Hydraulics
7.	Advanced Manufacturing process
8.	Advanced Marine Structures
9.	Advanced Mathematical Techniques
10.	Advanced Matrix Theory & Linear Algebra

SYSTEM No: 10

(PC- Personal Disk(B) -NPTEL Videos) (PC - Personal Disk(C) -NPTEL Videos)

Sl. No.	Topics	Sl. No.	Topics
1.	Introduction to Aerospace Propulsion	1.	Finite Element Analysis
2.	Introduction to Airplane Performance	2.	Flight Dynamics
3.	Introduction to Helicopter Aerodynamics	3.	Fluid Mechanics
4.	Jet aircraft Propulsion	4.	Foundation of Computational Fluid Dynamics
5.	Mass transfer	5.	Fuels, Refractory & Furnaces
		6.	Graph Theory
		7.	Heat Transfer
		8.	High Speed Aerodynamics
		9.	Hydrostatics & Stability
		11.	Instability & Transition of Fluid Flows
		12.	Introduction to Aerodynamics

SYSTEM No: 11

(PC - Personal Disk (C) - NPTEL Videos)

Sl. No.	Topics	Sl. No.	Topics
1.	Materials & Energy Balance in Metallurgy	10.	Ocean Structures & Materials
2.	Measure & Integration	11.	Organization Management
3.	Mechanics, Heat, Oscillations & Waves	12.	Physics
4.	Multiphase Flow	13.	Principles of Physical Metallurgy
5.	Nano Structured Materials -Synthesis	14.	Probability & Statistics
6.	Nano Structures & Nano Materials	15.	Processing of Non-Metals
7.	Non-ferrous Extractive Metallurgy	16.	Radiation Heat Transfer
8.	Nuclear Physics- Fundamentals & Applications	17.	Real Time Systems
9.	Nuclear Reactor & Safety	18.	Relativistic Quantum Mechanics

SYSTEM No:12

(Personal Disk (C) - NPTEL Videos)

Sl. No.	Topics
1.	Computational Fluid Dynamics
2.	Computer Aided Engineering Design
3.	Conduction & Radiation
4.	Convective Heat & Mass Transfer
5.	Cryogenic Engineering
6.	Department of Humanities & Social Sciences
7.	Department of Metallurgical & Materials Engineering
8.	Design & Optimization of Energy Systems
9.	Discrete Mathematics
10.	Electromagnetic Theory