

# NOC: Mechanics, heat oscillations and waves - Video course

## COURSE OUTLINE

The course will deal, respectively, with a limited selection of specific topics included in the CBSE Std. XI and Std. XII physics curricula. The topics to be discussed are those which involve basic concepts and fundamental principles, and which therefore have wide applicability. They are also the topics that are conceptually the deepest, and must therefore be understood as clearly as possible. This will be the overall objective of the courses.

## COURSE DETAIL

Sl.No.	Topics
1.	The nature of physical laws.
2.	The fundamental forces of nature.
3.	Dimensional analysis and scaling.
4.	Scalars and vectors.
5.	Circular motion.
6.	Kinematics versus dynamics. The laws of motion.
7.	Conservation of momentum and energy.



NP-TEL

# NPTEL

<http://nptel.ac.in>

## Physics

**Coordinators:**

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8.	Rotation about a fixed axis. Conservation of angular momentum.
9.	Universal law of gravitation.
10.	Kepler's laws of planetary motion.
11.	Gravitational potential energy.
12.	Elastic behaviour of solids; stress, strain and elastic moduli.
13.	Streamlined flow of fluids.
14.	Heat, temperature and the ideal gas.
15.	Change of state.
16.	Thermal equilibrium and the laws of thermodynamics.
17.	Degrees of freedom and the equipartition of energy.
18.	Undamped and damped simple harmonic motion.
19.	Wave motion; travelling and standing waves.
20.	Superposition of waves.