Introduction to the Special Theory of Relativity

SWAYAM Prabha Course Code – S14

PROFESSOR'S NAME	Prof. Vikram Rentala
DEPARTMENT	Physics
INSTITUTE	Indian Institute of Technology, Bombay
COURSE OUTLINE	This is a course on Einstein's Special Theory of Relativity. We will explore the bizarre implications of this theory and how it leads to predictions such as moving rods appear to be shorter, moving clocks appear to tick slower, and events which are seen as simultaneous by one observer, may appear to be non-simultaneous as seen by an observer in relative motion. After you take the course you will emerge with a new world view for basic notions of space and time. This new view of space and time sparked a revolution in physics in the early 20th century.

COURSE DETAILS

S. No	Module ID/ Lecture ID	Lecture Title/Topic
1	PH207-L1A.mp4	Introduction
2	PH207-L1B.mp4	Introduction
3	PH207-L1C.mp4	Introduction
4	PH207-L2A.mp4	A light conflict
5	PH207-L2B.mp4	A light conflict
6	PH207-L3A.mp4	Implication of Einstein's postulates
7	PH207-L3B.mp4	Implication of Einstein's postulates

8	PH207-L4A.mp4	A detailed look at the special relativity transformations
9	PH207-L4B.mp4	A detailed look at the special relativity transformations
10	PH207-L4C.mp4	A detailed look at the special relativity transformations
11	PH207-L5A.mp4	Expanding the dictionary
12	PH207-L5B.mp4	Expanding the dictionary
13	PH207-L5C.mp4	Expanding the dictionary
14	PH207-L5D.mp4	Expanding the dictionary
15	PH207-L6A.mp4	Aberration, Doppler effect
16	PH207-L6B.mp4	Aberration, Doppler effect
17	PH207-L7A.mp4	Spacetime Interval and Spacetime Diagrams
18	PH207-L7B.mp4	Spacetime Diagrams
19	PH207-L8A.mp4	Spacetime Diagrams (Contd.)
20		
21	PH207-L9A.mp4	Spacetime metric, Lorentz group, 4-vectors
22	PH207-L9B.mp4	Spacetime metric, Lorentz group, 4-vectors
23	PH207-L9C.mp4	Spacetime metric, Lorentz group, 4-vectors
24	PH207-L9D.mp4	Spacetime metric, Lorentz group, 4-vectors

References if Any: