भारतीय प्रौद्योगिकी संस्थान तिरुपति
TIRUPATI

INDIAN INSTITUTE OF TECHNOLOGY TIRUPATI
भारतीय प्रौद्योगिकी संस्थान तिरुपति
Yerpedu-Venkatagiri Road, Yerpedu Post, Tirupati District, Andhra Pradesh - 517 619

1.	Title of the course	Introduction to Renewable Energy
2.	Course number	CH526L
3.	Structure of credits (L-T-P-C)	3-0-0-3
4.	New course/modification to	New
5.	To be offered by	Chemical Engineering
6.	Proposed by	Nilesh Choudhary
7.	Prerequisite	None
8.	**Course Objective(s):** To introduce various renewable energy sources and to discuss their harnessing, conversion and storage processes.	
9.	**Course Content:** Introduction to renewable energy; Carbon footprint; Net zero; Sustainable development goals; Energy decarbonization; Solar energy; Wind energy; Marine energy: tidal energy, ocean thermal energy and others; Bioenergy; Green hydrogen; Hydel power; Geothermal energy; Energy conversion and storage; Energy audit; Energy economics and environmental benefits.	
10.	**Textbook(s):** 1. Kanoglu M, Cengel Y A and Cimbala J M, Fundamentals and Applications of Renewable Energy, 2nd Edition, McGraw Hill (2023). 2. Utgikar V, Chemical Processes in Renewable Energy Systems, Pearson (2021).	
11.	**Reference(s):** 1. Jelley N, Renewable Energy: A Very Short Introduction, Oxford University Press (2020). 2. Celik S, Sustainable Energy: Engineering Fundamentals and Applications, Cambridge University Press (2023). 3. Nelson V C, Starcher K L, Introduction to Renewable Energy, 2nd Edition, Taylor & Francis (2015).	