

TEE-901 Emerging Trends in Thermal Technologies

Course Objective

1. The objectives of “Emerging Trends in Thermal Technologies” course are:
 - a. To elaborate recent development in path-breaking thermal technologies
 - b. To understand the theory and application of thermal energy process
 - c. To describe and discuss the use of thermal processes in the industry.

Course Contents

2. Contents with suggested contact hours

	Topics	Contact Hours
a.	Nuclear Energy	6
b.	Clean Coal Technology	6
c.	Solar Thermal Energy	6
d.	Combustion	6
e.	Fuel Cell Technology	6
f.	Gas Turbines	5
g.	Thermal Energy Storage	5
h.	Combined Heat and Power Thermal Energy Systems	5
Total		45

3. **Course Outcomes**

- a. The students will be able comprehend the design and development in all thermal energy systems.
- b. The students will be able to understand modern development in the thermal energy sector

4. **Recommended Reading (including Textbooks and Reference books).**

	Title	Author(s)	Books
a.	Sustainable energy systems and application	Ibrahim Dincer	Text
b.	Nuclear Engineering Handbook	Kenneth D. Kok	Ref
c.	Solar Engineering of Thermal Processes	J. A. Duffie, and W. A. Beckman	Ref
d.	Clean Coal Engineering	Bruce G. Miller	Ref

	Technology		
e.	Fuel Cell Fundamentals	Ryan O'Hayre, Suk-Won Cha, Whitney Colella	Ref
f.	Gas Turbine Theory	Cohen H. Rogers	Ref
g.	An Introduction to Combustion: Concepts and Applications	Stephen Turns	Ref
h.	Thermal energy Storage: Systems and Application	Ibrahim Dincer	Ref