

SYLLABUS

CERTIFICATE COURSE: RENEWABLE ENERGY SOURCES

COURSE CODE	HOURS	TIME
PHYRES 22-23	30	3.30-5.00 PM

CO1: Understand the renewable energy resources

CO2: Understand the Solar and wind energy technologies

CO3: Overview biomass production, hydropower and tidal Energy

UNIT 1 - Energy resources

9 Hrs

Introduction, Energy usage, Classification of energy sources, Requirement of energy sources

UNIT 2 – Solar and wind energy technologies

11 Hrs

Solar spectrum, Solar cells, Photo voltaic devices, Wind energy in India, Wind machines

UNIT 3 – Biomass, hydropower and tidal energy

10 Hrs

Photosynthesis, Biogas production, Hydropower technology, Mechanics of tidal power and its limitations

Books & Reference:

P. D. Dunn, Renewable Energies: Sources, Conversion and Application, P. Peregrinus Ltd, London, 1986.

J. W. Twidell and A. D. Weer, Renewable Energy Sources, ELBS, 2nd Edition, Taylor & Francis, 2006.

S. Rao and B. B. Parulekar, Energy Technology- Non conventional, Renewable and Conventional 3rd Edition, Khanna Pub, 1999.

B.T. Nijaguna, Biogas Technology, New Age International Pub, 2002