2nd Year M.E. Electrical Power System

Semester -III : Course Outcomes as per CBCS Scheme

3EPS01 Renewable Energy Systems

Course Outcomes:

After successful completion of this course the students will be able to

CO 1: Explain the Wind and Solar energy conversion

CO 2: Explain the energy through biomass and biogas

CO 3: Illustrate the geothermal energy and its applications

CO 4: Summarize the application of fuel cell and tidal power

CO 5: Explain the distributed generation and microgrid

3EPS02 Waste to Energy

Course Outcomes

Upon successful completion of this course, students will be able to:

CO 1: Classify and Utilize Waste as Fuel: Identify and categorize various types of waste, including agro-based, forest residues, industrial waste, and municipal solid waste (MSW), and understand their application in conversion devices such as incinerators, gasifiers, and digesters.

CO2 : Analyze Biomass Pyrolysis Processes: Describe and compare different types of pyrolysis (slow and fast), and evaluate methods for the manufacture of charcoal, pyrolytic oils, and gases, including their yields and applications.

CO3 : Design and Operate Biomass Gasification Systems: Explain the principles and design of various gasifiers (fixed bed, downdraft, updraft, and fluidized bed), and apply knowledge of gasifier operation, including burner arrangements for thermal heating and engine arrangements for power generation, considering equilibrium and kinetics.

CO4 : Evaluate Biomass Combustion Technologies: Analyze and differentiate between various biomass combustion systems, including improved chullahs, fixed bed combustors, inclined grate combustors, and fluidized bed combustors, focusing on their design, construction, and operational principles.

CO5 : Assess Biogas Production and Utilization: Understand the properties and composition of biogas, and describe the technology and design features of biogas plants. Examine various biomass conversion processes including anaerobic digestion, and explore applications such as alcohol production, biodiesel production, and urban waste-to-energy conversion.