



VALUE ADDED COURSE

BIO ENERGY (19ESC1VAC01)

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INTRODUCTION:

This course is focused to provide an insight into the biomass conversion processes for energy and by-products. The students are exposed to the physical and chemical properties of biomass and their influence on the conversion technology. The thermochemical section provides an opportunity for the student to address the interaction between the reactants to yield various products. The biological conversions address the specific needs of the bio-chemical requirement and its dependence on the fuel composition.

SYLLABUS:

Thermochemical conversion of biomass: Biomass-Torrefaction, Pyrolysis, Hydrothermal liquefaction and gasification. Landfill gas generation- Usage of gas for commercial purposes- Leachate generation- Characteristics & treatment process

Biochemical conversion of biomass: Fermentation, Digestion, Technologies available - Description, method of working, Applications, Advantages & Disadvantages. Different Types of Substrates- Biology of Anaerobic Process- Environmental conditions of the Anaerobic Reactor System- Parameters & Monitoring.

COURSE OUTCOME:

- ✓ Acquiring the knowledge of biomass energy.
- ✓ Understanding Biomass as a renewable energy and its importance with respect to environment protection.
- ✓ Analyse the influence of process governing parameters in thermochemical conversion of biomass
- ✓ Synthesize biofuels for power generation from biomass

Total Hours

36 Hours