

RENEWABLE ENERGY COURSE CONTENT

SOLAR ENERGY COURSE OUTLINE

- ❖ Introduction to Renewable Energy
- ❖ Types of Renewable Energy
- ❖ Renewable Energy Accessories
- ❖ Solar/Wind Power Generation, Transmission and Distribution
- ❖ Off-grid and Grid-tie Back-up
- ❖ Design of off-grid and grid-tie systems
- ❖ Installation of Back-up and Stand-alone Systems
- ❖ Types of Loads
- ❖ Hybridization of Power Sources
- ❖ Trouble Shooting

BIOMASS COURSE OUTLINE

- ❖ Introduction to biomass energy
- ❖ Source of biomass
- ❖ Biomass conversion technology
- ❖ Introduction to biogas and anaerobic digestion
 - Feedstocks for biogas production
 - Processing biomass into biogas \
 - Factors that affect anaerobic digestion
 - Types of anaerobic digesters (biodigester)
 - Biodigester size and components
 - Biodigester construction
 - Uses of effluent and by-products of biodigester
- ❖ Anaerobic digesters and biogas safety
- ❖ Environmental benefits of anaerobic digester
- ❖ Operation and maintenance

- ❖ Introduction to biofuel
- ❖ Introduction to smokeless cook stove technology
 - Smokeless cook stove construction
 - Social and environmental benefit of smokeless cook stove

- ❖ Introduction to briquette fuel technology
- ❖ Briquette fuel production
- ❖ Benefit of briquette production
- ❖ Pellet production

- ❖ Conversion of nylon bag waste into paving stone

WIND ENERGY COURSE OUTLINE

- ❖ Introduction to wind energy
- ❖ Wind energy resource
- ❖ Measuring the energy in the wind
- ❖ Types of wind turbine
- ❖ Wind turbine components
- ❖ Choosing the best wind site
- ❖ Wind assessment
- ❖ Wind turbine construction / installation
- ❖ Testing, operation and maintenance