



W M O Arts & Science College, Muttill
DEPARTMENT OF PHYSICS
CERTIFICATE COURSE
NON-CONVENTIONAL ENERGY SOURCES

Syllabus :30 Hours

Faculty coordinator : Dr. BIJU KG

Module-I: (2 Hours) Energy Resources-Non Conventional Energy Sources-Renewable and Non-Renewable energy sources.

Module-II: Solar Energy : (8 Hours) Solar Constant, Solar radiation measurements, Solar energy collectors, solar air heaters and drying, solar cookers, solar distillation, solar furnaces, solar greenhouses, solar power plants, solar photovoltaic cells

Module-III: Wind energy and Geothermal energy. : (12 Hours) Utilisation aspects of wind energy, Advantages and Disadvantages of wind energy, Environmental impact of wind energy, Sources/Origins of wind, Principle of wind energy conversion and wind power, Basic components of wind energy conversion system(WECS), Advantages and Disadvantages of WECS. Introduction to Geothermal energy, Important aspects of Geothermal Energy, Structure of Earth's interior. Geothermal Resources. Advantages and disadvantages of geothermal energy over other energy forms.

Module-IV: Energy from Oceans: (4 Hours) Ocean Energy, Ocean Energy Sources, Tidal energy, Wave energy, Advantages and disadvantages, Factors affecting Wave energy, Ocean Thermal Energy Conversion (OTEC), Working principle of OTEC. Module- V: Fusion energy. : (4 Hours)