MCE517 Energy Management and Technology (3 Units)

Department of Mechanical Engineering

Covenant University
1. MCE517
1.1. MCE517 Energy Management and Technology (3 Units)

Energy and Society. Sources of Energy. Energy demand and supply. Conventional and unconventional (renewable) energy. Energy conversion systems and devices for oil, gas, coal, heat, wood, nuclear, solar, wind, biomass, tidal, etc. Energy conservation. Energy Auditing. Nature and availability of wind energy; wind turbines, classification, construction and control; performance evaluation methods; power, efficiency, reliability and cost; load matching; nature and availability of solar radiation; radiation estimations and measuring instruments; materials for solar energy utilisation, radiative properties and thermal transport properties; introduction to non-concentrating collectors, design techniques and performance estimation; solar component and solar system operational characteristics; practical applications of solar energy, special solar devices for developing countries; and desalination, photovoltaics and solar water pumping.