SUBJECT NO-ES60004, SUBJECT NAME- ENERGY MATERIALS

LTP- 3-1-0,CRD- 4

SYLLABUS :-

SYLLABUS FOR ENERGY MATERIALS An interdisciplinary post graduate course with 4-0-0 credits Numbers of lectures are mentioned along with Atomic arrangement and electronic structure of materials Nature of bonding(1), atomic and molecular arrangement(2), quantum behavior of electrons(1), Bloch's theorem and electrons in periodic potential(2), Brillouin zones(1), band diagram (1)and band structure(1) Origin of electronic (2), magnetic (3) and optical properties (3) of materials Device Principles and their components Battery (2), Fuel Cell(2), Photovoltaic Cell(2), Super-capacitor(2) and super-conductor(2), thermo-electric device(2), piezo-electric generator(2), energy-efficient solid state cooler(2) Material Selection for the Energy Devices Battery (2) Fuel Cell (2), Photovoltaic Cell (2), Super-capacitor (2) and super-conductor (2), thermo-electric device (2), piezo-electric generator (2), energy-efficient solid state cooler (1)