SUBJECT NO-EE60019, SUBJECT NAME- SWITCHED MODE POWER CONVERSION

LTP- 3-1-0,CRD- 4

SYLLABUS :-

Course Name: Switched Mode Power ConversionCourse No.:EE60019L-T-P : 3-1-0Prerequisite: NoneIntroduction to power converters; Construction and Characteristics of Power Diodes; Uncontrolled single phase diode bridge rectifier with C and LC filter.Switch realization, construction and characteristics of BJT and MOSFETs, Gate Drive; Recent developments in MOSFET technology.Linear voltage regulators, basic structures, advantages and disadvantages; Steady state analysis of basic DC-DC converters (Buck, boost, buck-boost)Steady state analysis of derived DC-DC (Cuk, SEPIC, Quadratic) convertersSteady state analysis of Txf isolated DC-DC converters (Forward, Flyback, push-pull, bridge)Switched mode voltage regulator specifications, block diagram, Modeling approach, assumptions and approximations.Dynamic models and transfer functions of hard switched converters in CCM and DCM modes. Regulator design exampleCurrent Programmed converters, Block diagram, stabilization, modeling and transfer functions.Single phase PFC circuits