DEPARTMENT OF ELECTRICAL ENGINEERING

COURSE OUTCOMES

M.TECH PROGRAM (Power Electronics)

COURSES IN DEPARTMENT

COURSE	COURSE OUTCOMES
EPE 511 Power System Operation and Control	CO1: Proficiency in voltage & frequency control of modern power system CO2: Ability to realize the modern power system with FACTS devices CO3: Capability to contrive Load Dispatch functions CO4: Competence in power flow analysis
EPE 512 Analysis of Power Electronic Converters	CO1: Competency in function of various power electronics devices CO2: Skill of analyzing power electronic devices CO3: Know-how of advance Power electronics converter CO4: Fitness in mitigating converter harmonics
EPE 521 Analysis & Control of Electrical Drive Systems	CO1: Competency in developing Dynamic model of drive system CO2: Fitness' in solving typical drive issues. CO3: Ability in control strategy of cycloconverter based Drives CO4: Skill in Transient analysis of drive system
EPE 531 Utility Application of Power Electronics	CO1: Know-how of equipment of converter station. CO2: Ability to develop Mathematical model of each technique. CO3: Competency in designing FACTS controllers. CO4: Capability to design Active power filters.
EPE 513 Advanced Semiconductor Devices	CO1: Proficiency utilizing harnessing typical parameters of power semiconductor devices. CO2: Capability in testing & harnessing typical characteristics of power semiconductor devices CO3: Competency in Triggering & Protective mechanism of semiconductor devices CO4: Know-how & aptitude towards future Trends in Power Devices
EPE 514 ANN and Fuzzy Logic	CO1: Ability to contrive optimum NN architecture for specific engineering problem. CO2: Competency in applying NN technology in control problems. CO3: Skill in framing fuzzy rules & employing fuzzy technique in solving engineering problems. CO4: Dexterity in contriving neuro –fuzzy based solutions
EPE 522 Wind Energy Conversion System	CO1: Aptitude & proficiency in grid interconnection requirements for wind farms. CO2: Ability of integrating power electronics device with Renewable Energy Sources. CO3: Know-how of Wind Power Control. CO4: Skill in developing MPPT techniques.
EPE 523 Advanced Power Converters	CO1: Capability in designing isolated converters. CO2: Ability to dynamic analysis of power Converters. CO3: Competency in operation of resonant converter. CO4: Know-how of multilevel converter.
EPE 532 Modern Control Techniques in Electrical Drives	CO1: Ability to contrive vector control techniques. CO2: Skill in developing flux weakening operation of Electric Drives. CO3: Capability in Control of Switched Reluctance Motor Drives. CO4: Competency in Control of BLDC Motor Drives.

EPE 515 System Theory	CO1: Know-How of Modern control theory concepts & methods CO2: Capability of state space modelling. CO3: Competency in analyzing non-linear system CO4: Skill of harnessing advanced stability criterion
EPE 516 Modeling & Analysis of Electrical Machine	CO1: Know-How of Electromagnetic energy conversion techniques CO2: Competency in modeling asynchronous & synchronous induction machine CO3: Ability to analyze steady state & dynamic operation of induction machine CO4: Capability in contriving drive operation as per the industry requirements.
RES 515 Energy Audit and Management	CO1: Acquaintance with conservation of energy and its management, energy planning, and energy economics. CO2: Know-How of energy efficient machinery systems, energy losses and their management. CO3: Competency in Energy analysis techniques and methods & Energy conservation planning and practices. CO4: Know-How of Energy forecasting, Energy economics, Energy pricing and incentives for energy conservation.
EPE 524 Computer Aided Power System Analysis	CO1: Ability to develop MATLAB Programs for engineering Systems. CO2: Competency in Harmonic analysis, FFT, DFT using MATLAB. CO3: Know-how of applying ANN, fuzzy Logic & DSP toolbox for solving problems. CO4: Ability in harnessing numerical solutions
RES 522 Design and Analysis of Renewable Energy Conversion Systems	CO1: Competency in the Development of biogas and biofuels systems. CO2: Know-How of the Theory Energy cycle of the earth & renewable energy sources. CO3: Proficiency in Thermodynamics of energy conversion and Study of various parameters for measuring the performance of the output. CO4: Ability to Design of bio-fuel production units.
EPE 533 High Voltage DC Transmission system	CO1: Proficiency in HVDC converter systems design. CO2: Know-how of operation of Power electronics in HVDC system. CO3: Competency in designing filters & DC link control for HVDC System. CO4: Acquaintance with MTDC system & its open challenges.
EPE534 Industrial Automation and Control	CO1: Ability in understanding atomization in Industrial Sector. CO2: Know-how of control mechanism utilized in Industrial Devices. CO3: Proficiency in signal conditioning & processing in automated system. CO4: Competency in Designing automated industrial control system.