COURSE OUTCOMES COs)

Semester: V

Course Name: Electrical Machine-II	**Course Code: EX-501**
Students will be able to:	
CO1:	Evaluate the operation of DC motor under load.
CO2:	Elaborate the construction and characteristics of synchronous machines.
CO3:	Analyze saliency & parallel operation of alternators.
CO4:	Demonstrate transients in synchronous machines.
CO5:	Synthesize the starting and connecting procedures of synchronous generators.

Course Name: Power Electronics	**Course Code: EX-502**
Students will be able to:	
CO1:	Summarized the characteristics, operation, and protection of power electronic devices for power control applications.
CO2:	Utilize various single-phase and three-phase power converter circuits with different loads and operating conditions.
CO3:	Analyze the operation and performance of various single-phase and three-phase inverter topologies with voltage control and harmonic reduction techniques.
CO4:	Classify various chopper configurations with appropriate control and commutation techniques for desired performance.
CO5:	Evaluate cycloconverters, AC voltage controllers, and switched-mode voltage regulators to control AC and DC power for practical industrial applications.

Course Name: Departmental Elective -I (Renewable Power Generation)		Course Code: EX-503 (C)
Students will be able to:		
CO1:	Classify the global and regional energy utilization patterns, renewable energy resources, deployment, sustainability, and economics of renewable energy systems.	
CO2:	Summarize solar radiation measurement, solar thermal and photovoltaic power generation, and their applications	
CO3:	Examine wind energy estimation, system types, performance, site selection, turbines, and safety aspects.	
CO4:	Identify biomass energy conversion methods, cogeneration, and applications.	
CO5:	Recognize key technologies and applications of tidal, wave, OTEC, hydro, geothermal, hydrogen, fuel cells, and hybrid energy systems.	

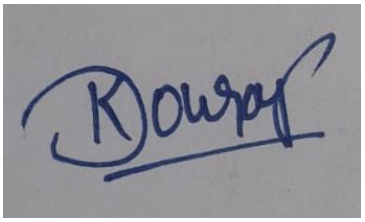
Course Name: Open Elective -I (Electrical & Electronics Materials)		Course Code: EX-504 (C)
Students will be able to:		
CO1:	Compare various engineering materials for electrical works.	
CO2:	Illustrate application of dielectric and insulating materials .	
CO3:	Select semiconductors according to their electrical properties.	
CO4:	Classify different types of magnetic materials and other special purpose material.	
CO5:	Elaborate the process of making of Integrated Circuits.	

Course Name: Departmental Lab (MATLAB and Simulation)		Course Code: EX-505
Students will be able to:		
CO1:	Depicts and conduct simulation and experiments.	
CO2:	Determine the circuit parameters for economic operation	
CO3:	Utilize techniques, skills and modern engineering tools necessary for engineering practice.	
CO4:	Solve engineering problems with simulation.	
CO5:	Examine the waveforms of various circuits.	

Course Name: Open Elective Lab (PLC)		Course Code: EX-506
Students will be able to:		
CO1:	Apply appropriate PLC hardware connections for different industrial applications.	
CO2:	Develop PLC programs using various programming schemes to meet control requirements.	
CO3:	Implement ladder logic diagrams for effective process control applications.	
CO4:	Integrate PLCs with drives to achieve the required motion and process control.	
CO5:	Analyze and apply PLC concepts for analog input and output operations.	

Course Name: Evaluation of Internship II		Course Code: EX-407
Students will be able to:		
CO1:	Build the company profile by compiling the brief history, management structure, products / services offered, key achievements and market performance for his / her organization of internship.	
CO2:	Assess its Strengths, Weaknesses, Opportunities and Threats (SWOT).	
CO3:	Determine the challenges and future potential for his / her internship organization in particular and the sector in general. .	
CO4:	Test the theoretical learning in practical situations by accomplishing the tasks assigned during the internship period.	
CO5:	Apply various soft skills such as time management, positive attitude and communication skills during performance of the tasks assigned in internship organization	

Course Name: Minor Project I / Seminar		Course Code: EX-508
Students will be able to:		
CO1:	Develop specialist knowledge in the area of their course to make a physical model.	
CO2:	Illustrate the ability to select and organize research-based and scholarly literature.	
CO3:	Illustrate the ability to initiate research and formulate viable questions.	
CO4:	Illustrate the capacity to design, conduct and report his/her original work.	
CO5:	Justify his/her work based on empirical evidence and the scientific approach to knowledge development	



Approved By: -

Head of Department