



DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

III YEAR I SEMESTER COURSE OUTCOMES

SL.No.	COURSE CODE:	R2031021	COURSE NAME:	POWER SYSTEMS-II
1	CO1:	Calculate parameters of transmission lines for different circuit configurations.		
	CO2:	Determine the performance of short, medium and long transmission lines.		
	CO3:	Analyse the effect of travelling waves on transmission lines.		
	CO4:	Analyse the various voltage control methods and effect of corona.		
	CO5:	Calculate sag/tension of transmission lines and performance of line insulators.		
	COURSE CODE:	R2031022	COURSE NAME:	POWER ELECTRONICS
2	CO1:	Illustrate the static and dynamic characteristics of SCR, Power-MOSFET and Power-IGBT.		
	CO2:	Analyse the operation of phase-controlled rectifiers.		
	CO3:	Analyse the operation of three-phase full-wave converters, AC Voltage Controllers and Cycloconverters.		
	CO4:	Examine the operation and design of different types of DC-DC converters.		
	CO5:	Analyse the operation of PWM inverters for voltage control and harmonic mitigation.		
	COURSE CODE:	R2031023	COURSE NAME:	CONTROL SYSTEMS
3	CO1:	Derive the transfer function of physical systems and determination of overall transfer function using block diagram algebra and signal flow graphs.		
	CO2:	Determine time response specifications of second order systems and absolute and relative stability of LTI systems using Routh's stability criterion and root locus method.		
	CO3:	Analyze the stability of LTI systems using frequency response methods.		
	CO4:	Design Lag, Lead, Lag-Lead compensators to improve system performance using Bode diagrams.		
	CO5:	Represent physical systems as state models and determine the response. Understand the concepts of controllability and observability.		
	COURSE CODE:	R203102F	COURSE NAME:	RENEWABLE ENERGY SOURCES (OPEN ELECTIVE-I)
4	CO1:	Analyze solar radiation data, extra-terrestrial radiation, radiation on earth's surface and solar Energy Storage.		
	CO2:	Illustrate the components of wind energy systems.		
	CO3:	Illustrate the working of biomass, digesters and Geothermal plants.		
	CO4:	Demonstrate the principle of Energy production from OTEC, Tidal and Waves.		
	CO5:	Evaluate the concept and working of Fuel cells & MHD power generation.		
	COURSE CODE:	R203102G	COURSE NAME:	CONCEPTS OF OPTIMIZATION TECHNIQUES (OPEN ELECTIVE-I)
5	CO1:	State and formulate the optimization problem without and with constraints, also apply classical optimization techniques to minimize or maximize a multi-variable objective function, without or with constraints and arrive at an optimal solution.		
	CO2:	Formulate a mathematical model and apply linear programming technique by using Simplex method. Also extend the concept of dual Simplex method for optimal solutions.		
	CO3:	Formulate a mathematical model and apply non-linear programming techniques for unconstrained and constrained case studies.		
	CO4:	Solve transportation and assignment problem by using Linear programming Simplex method.		
	CO5:	Formulate and apply Dynamic programming technique to inventory control, production planning, engineering design problems etc. to reach a final optimal solution from the current optimal solution.		

6	COURSE CODE:	R203102H	COURSE NAME:	CONCEPTS OF CONTROL SYSTEMS (OPEN ELECTIVE-I)
	CO1:	Derive the transfer function of physical systems and determination of overall transfer function using block diagram algebra and signal flow graphs.		
	CO2:	Determine time response specifications of second order systems and to determine error constants.		
	CO3:	Analyze absolute and relative stability of LTI systems using Routh's stability criterion and the root locus method.		
	CO4:	Analyze the stability of LTI systems using frequency response methods.		
	CO5:	Represent physical systems as state models and determine the response. Understanding the concepts of controllability and observability.		
7	COURSE CODE:	R203102A	COURSE NAME:	LINEAR IC APPLICATIONS (PROFESSIONAL ELECTIVE – I)
	CO1:	Describe the Op-Amp and internal Circuitry: 555 Timer, PLL		
	CO2:	Discuss the Applications of Operational amplifier: 555 Timer, PLL		
	CO3:	Design the Active filters using Operational Amplifier		
	CO4:	Use the Op-Amp in A to D & D to A Converters		
8	COURSE CODE:	R203102B	COURSE NAME:	UTILIZATION OF ELECTRICAL ENERGY (PROFESSIONAL ELECTIVE – I)
	CO1:	Identify various illumination methods produced by different illuminating sources.		
	CO2:	Identify a suitable motor for electric drives and industrial applications		
	CO3:	Identify most appropriate heating and welding techniques for suitable applications.		
	CO4:	Distinguish various traction system and determine the tractive effort and specific energy consumption.		
	CO5:	Validate the necessity and usage of different energy storage schemes for different applications and comparisons.		
9	COURSE CODE:	R203102C	COURSE NAME:	COMPUTER ARCHITECTURE AND ORGANIZATION (PROFESSIONAL ELECTIVE – I)
	CO1:	Explain the instruction cycle of a computer.		
	CO2:	Understand various micro operations and register transfer language.		
	CO3:	Describe parallel processing and pipelining.		
	CO4:	Interface different peripherals with processors.		
	CO5:	Know the advantages of cache and virtual memory.		
10	COURSE CODE:	R203102D	COURSE NAME:	OPTIMIZATION TECHNIQUES (PROFESSIONAL ELECTIVE – I)
	CO1:	State and formulate the optimization problem without and with constraints, also apply classical optimization techniques to minimize or maximize a multi-variable objective function, without or with constraints and arrive at an optimal solution.		
	CO2:	Formulate a mathematical model and apply linear programming technique by using Simplex method. Also extend the concept of dual Simplex method for optimal solutions.		
	CO3:	Formulate a mathematical model and apply non-linear programming techniques for unconstrained and constrained case studies.		
	CO4:	Solve transportation and assignment problem by using Linear programming Simplex method.		
	CO5:	Formulate and apply Dynamic programming technique to inventory control, production planning, engineering design problems etc. to reach a final optimal solution from the current optimal solution.		
11	COURSE CODE:	R203102E	COURSE NAME:	OBJECT ORIENTED PROGRAMMING THROUGH JAVA (PROFESSIONAL ELECTIVE – I)
	CO1:	Discuss and understand java programming constructs, Control structures		
	CO2:	Illustrate and experiment Object Oriented Concepts like classes, objects		
	CO3:	Apply Object Oriented Constructs such as Inheritance, interfaces, and exception handling		
	CO4:	Construct applications using multithreading and I/O		
	CO5:	Develop Dynamic User Interfaces using applets and Event Handling in java		

12	COURSE CODE:	R2031024	COURSE NAME:	CONTROL SYSTEMS LABORATORY
	CO1:	Analyze the performance and working Magnetic amplifier, D.C and A.C. servo motors and synchros.		
	CO2:	Design P,PI,PD and PID controllers		
	CO3:	Design lag, lead and lag–lead compensators		
	CO4:	Evaluate temperature control of an oven using PID controller		
	CO5:	Determine the transfer function of D.C Motor		
	CO6:	Analyze the performance of D.C and A.C Servo Motor.		
	CO7:	Test the controllability and observability.		
	CO8:	Judge the stability in time and frequency domain.		
	CO9:	To examine different logic gates and Boolean expressions using PLC.		
13	COURSE CODE:	R2031025	COURSE NAME:	POWER ELECTRONICS LABORATORY
	CO1:	Analyse characteristics of various power electronic devices and design firing circuits for SCR.		
	CO2:	Analyse the performance of single–phase dual, three–phase full–wave bridge converters and dual converter with both resistive and inductive loads.		
	CO3:	Examine the operation of Single-phase AC voltage regulator and Cycloconverter with resistive and inductive loads.		
	CO4:	Differentiate the working and control of Buck converter and Boost converter.		
	CO5:	Differentiate the working & control of Square wave inverter and PWM inverter.		
14	COURSE CODE:	R2031026	COURSE NAME:	SOFT SKILL COURSE EMPLOYABILITY SKILLS
	CO1:	Follow strategies in minimizing time consumption in problem solving Apply shortcut methods to solve problems		
	CO2:	Confidently solve any mathematical problems and utilize these mathematical skills both in their professional as well as personal life.		
	CO3:	Analyze, summarize and present information in quantitative forms including table, graphs and formulas		
	CO4:	Understand the core competencies to succeed in professional and personal life		
	CO5:	Learn and demonstrate a set of practical skills such as time management, self-management, handling conflicts, team leadership, etc.		
15	COURSE CODE:	R203102	COURSE NAME:	ADVANCED COMPUTER NETWORKS (Honors Engineering Course)
	CO1:	Implement various networks layers protocols.		
	CO2:	Configure TPV6 protocol.		
	CO3:	Apply the concepts of unicast and multicast routing protocol.		
	CO4:	Configure the transport layers protocols like UDP, TCP, SCTP Services.		
	CO5:	Determine application layer services working with the client server para diagrams like WWW, HTTP, FTP, e-mail, SNMP, DHCP.		
16	COURSE CODE:	R203102	COURSE NAME:	POWER QUALITY (Honors Engineering Course)
	CO1:	Differentiate between different types of power quality problems.		
	CO2:	Explain the sources of voltage sag - voltage swell - interruptions - transients - long duration over voltages and harmonics in a power system.		
	CO3:	Explain the principle of voltage regulation and improvement methods.		
	CO4:	Analyse voltage distortion and current distortion and their indices.		
	CO5:	Know the concepts of distributed generation technologies and power quality monitoring.		

17	COURSE CODE:	R203102	COURSE NAME:	SPECIAL ELECTRICAL MACHINES (Honors Engineering Course)	
	CO1:	Learn merits of PMDC motor			
	CO2:	Choose best control scheme for stepper motor			
	CO3:	Construct the various converter circuits for Switched Reluctance Motors.			
	CO4:	Analyse the characteristics of Brushless dc Motor.			
	CO5:	Understand the operation of Linear Induction Motors.			
18	COURSE CODE:	R203102	COURSE NAME:	ANALYSIS OF LINEAR SYSTEMS (Minors Engineering Course)	
	CO1:	Solve problems involving continuous time signals and linear systems.			
	CO2:	Use the Laplace transform to analyse signals, linear circuits and systems.			
	CO3:	Use the Fourier series and transform to analyse signals.			
	CO4:	Solve problems involving discrete time signals and linear systems.			
	CO5:	Illustrate testing of polynomials and network synthesis of LC, RC and RL networks.			
19	COURSE CODE:	R203102	COURSE NAME:	ENERGY AUDITING, CONSERVATION AND MANAGEMENT (Minors Engineering Course)	
	CO1:	Understand the principles of energy audit along with various Energy related terminologies.			
	CO2:	Asses the role of Energy Manager and Energy Management program.			
	CO3:	Design a energy efficient motors and good lighting system.			
	CO4:	Analyse the methods to improve the power factor and identify the energy instruments for various real time applications.			
	CO5:	Evaluate the computational techniques with regard to economic aspects.			

PRINCIPAL