SAHRDAYA COLLEGE OF ENGINEERING AND TECHNOLOGY, KODAKARA

Department of Electrical & Electronics Engineering

S3 EEE (2020 Admission)

MAT201	Partial Differentiation Equations & Complex Analysis	3	Ms. Savitha Paul (ASH)

CO1	CREATE AND SOLVE PARTIAL DIFFERENTIAL EQUATIONS WHICH ARE WIDELY USED IN DIFFERENT ENGINEERING SITUATION AND MODELLING.
CO2	APPLY PARTIAL DIFFERENTIAL EQUATION IN THE ANALYSIS OF VARIOUS PHYSICAL PHENOMINA .
CO3	ANALYSE COMPLEX VARIABLES AND COMFORMALITY TO TRANSFORM FUNCTIONS FROM ONE DOMAIN TO ANOTHER.
CO4	DEMONSTRATE MATHEMATICAL REASONING THROUGH THE CONCEPTS OF COMPLEX ANALYSIS.

CO - PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3				2		2			2
CO1	3	3	3				2		2			2
CO2	2	3										
CO4	3	3										2

CO-PSO Mapping

	PSO1	PSO2	PSO3	PSO4
CO1	2			
CO1	2			
CO2	2			
CO4	2			

SAHRDAYA COLLEGE OF ENGINEERING AND TECHNOLOGY, KODAKARA
Department of Electrical & Electronics Engineering

EET201	Circuits and Networks	4	Ms Merry Mathew

CO1	Apply circuit theorems to solve DC and AC electric networks.
CO2	Analyse and Solve dynamic DC and AC circuits by transforming to s-domain.
CO3	Analyse three phase networks in star and delta configurations and resonant circuits.
CO4	Develop the two port representation of networks using network parameters.

CO - PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	2									2
CO2	3	3	3	2								2
CO3	3	3	2	2								2
CO4	3	3	3									2

CO-PSO Mapping

	PSO1	PSO2	PSO3	PSO4
CO1	3			
CO2	3			3
CO3	3			
CO4	3			3

SAHRDAYA COLLEGE OF ENGINEERING AND TECHNOLOGY, KODAKARA
Department of Electrical & Electronics Engineering

EET203	Measurements & Instrumentation	3	Mr Adarsh S R

CO1	Identify and analyse the factors affecting performance of measuring systems
CO2	Choose appropriate instruments for the measurement of voltage, current in ac and dc measurements
CO3	Explain the operating principle of power and energy measurement
CO4	Outline the principles of operation of Magnetic measurement systems
CO5	Describe the operating principle of DC and AC bridges, transducers based systems.
CO6	Understand the operating principles of basic building blocks of digital systems, recording and display units

CO - PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	2										
CO2	3	2										
CO3	3	2										
CO4	3											
CO5	3				2							2
CO6	3				2							2

CO-PSO Mapping

	PSO1	PSO2	PSO3	PSO4
CO1			2	
CO2			2	
CO3			2	
CO4			2	
CO5				
CO6				

SAHRDAYA COLLEGE OF ENGINEERING AND TECHNOLOGY, KODAKARA

Department of Electrical & Electronics Engineering

EET205	Analog Electronic Circuits	3	Ms Neethu John

CO1	Design biasing scheme for transistor circuits
CO2	Model BJT and FET amplifier circuits for electronic circuit applications
CO3	Choose amplifiers and oscillators with appropriate specifications for electronic circuit applications
CO4	Design and develop various OPAMPs application circuits.

CO - PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	2									2
CO2	3	3	3	3								2
CO3	2	3	3									2
CO4	3	3	3									2

CO-PSO Mapping

	PSO1	PSO2	PSO3	PSO4
CO1	3			2
CO2	3			2
CO3	3			3
CO4	3			2

SAHRDAYA COLLEGE OF ENGINEERING AND TECHNOLOGY, KODAKARA
Department of Electrical & Electronics Engineering

HUT200	Professional Ethics	2	Mr Adarsh S R

CO1	Understand the core values that shape the ethical behaviour of a professional and to adopt a good character and follow an ethical life.
CO2	Explain the role and responsibility in technological development by keeping personal ethics and legal ethics.
CO3	Solve moral and ethical problems through exploration and assessment by established experiments.
CO4	Apply the knowledge of human values and social values to contemporary ethical values and global issues.

CO - PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	-	-	-	-	-	3	3	3	2	2	2	3
CO2	-	-	-	-	-	3	3	3	2	2	2	3
CO3	-	-	-	-	-	3	3	3	2	2	2	3
CO4	-	-	-	-	-	3	3	3	2	2	2	3

CO-PSO Mapping

	PSO1	PSO2	PSO3	PSO4
CO1	-	-	-	-
CO2	-	-	-	-
CO3	-	-	-	-
CO4	-	-	-	-

SAHRDAYA COLLEGE OF ENGINEERING AND TECHNOLOGY, KODAKARA
Department of Electrical & Electronics Engineering

MCN201	Sustainable Engineering	2	Ms Drisya K Sasi

CO1	Understand the relevance and the concept of sustainability and the global initiatives in this direction
CO2	Explain the different types of environmental pollution problems and their sustainable solutions
CO3	Discuss the environmental regulations and standards
CO4	Outline the concepts related to conventional and non-conventional energy
CO5	Demonstrate the broad perspective of sustainable practices by utilizing engineering knowledge and principles

CO - PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1						2	3					2
CO1						2	3					2
CO2						2	3					2
CO4						2	3					2
CO5						2	3					2

CO-PSO Mapping

	PSO1	PSO2	PSO3	PSO4
CO1				
CO1				
CO2				
CO4				
CO5				

SAHRDAYA COLLEGE OF ENGINEERING AND TECHNOLOGY, KODAKARA
Department of Electrical & Electronics Engineering

EEL201	Circuits and Measurements Lab	2	Mr Adarsh S R

CO1	To understand and verify different DC network theorems by setting up various networks and to determine impedance, admittance, power factor and real/reactive/ apparent power drawn in circuits.
CO2	To understand and calibrate different meters used for electrical measurements
CO3	To understand and perform the measurement of various electrical and magnetic quantities practically/simulation studies.
CO4	To understand the characteristics of Thermistor, RTD, Thermocouple, LVDT, strain gauge/ Load cell and other electronic measurements.

CO - PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	2	3	2	3	-	-	-	2	-	-	3
CO1	2	2	3	2	3	-	-	-	2	-	-	3
CO2	2	2	3	2	3	-	-	-	2	-	-	3
CO4	2	2	3	2	3	-	-	-	2	-	-	3

CO-PSO Mapping

	PSO1	PSO2	PSO3	PSO4
CO1	3	2	3	-
CO1	3	2	3	-
CO2	3	2	3	-
CO4	3	2	3	-

SAHRDAYA COLLEGE OF ENGINEERING AND TECHNOLOGY, KODAKARA
Department of Electrical & Electronics Engineering

EEL203	Analog Electronics Lab	2	Ms Drisya K Sasi

CO1	Familiarize various electronic instruments
CO2	Design and develop various electronic circuits using diodes and zener diodes
CO3	Design and implement amplifier and oscillator circuits using BJT and JFET
CO4	Design and implement basic circuits using IC (OPAMP and 555 Timers)
CO5	Simulate electronic circuits using any circuit simulation software
CO6	Use PCB layout software for circuit design

CO - PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2								3			
CO2	3	3	3						3			
CO3	3	3	3						3			
CO4	3	3	3						3			
CO5					3				3			3
CO6					3				3			3

CO-PSO Mapping

	PSO1	PSO2	PSO3	PSO4
CO1				
CO1	2			2
CO2	2			2
CO4	2			2
CO5		3		
CO6		3		

SAHRDAYA COLLEGE OF ENGINEERING AND TECHNOLOGY, KODAKARA
Department of Electrical & Electronics Engineering

S5 EEE (2019 Admission)

EET301	Power Systems I	4	Ms Ashna Mohan

CO1	Identify different types of power generating stations & energy related terms
CO2	Analyze the transmission line parameters and various protection schemes to be adopted in power system
CO3	Compute various physical characteristics of underground and overhead transmission systems
CO4	Design a simple electrical distribution system as per the standards

CO - PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3					2		2			2	2
CO2	3	3				2		2				2
CO3	3	2				2	2	2				2
CO4	3	2				2	2	2				2

CO-PSO Mapping

	PSO1	PSO2	PSO3	PSO4
CO1	3		2	3
CO1	3		2	3
CO2	3		3	2
CO4	3		3	2

SAHRDAYA COLLEGE OF ENGINEERING AND TECHNOLOGY, KODAKARA
Department of Electrical & Electronics Engineering

EET303	Microprocessors and Microcontrollers	3	Dr. Vijikala V

CO1	Understand the architecture of 8085 microprocessor, 8051 Microcontroller and Embedded systems
CO2	Apply the fundamentals of assembly level programming of 8085 microprocessor and 8051 microcontroller
CO3	Identify the different ways of interfacing memory and I/O with 8085 microprocessor
CO4	Develop skill for writing C programs for 8051 microcontroller

CO - PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2										
CO2	3	2	3	2	1							
CO3	3	2	2	2	2							
CO4	3	2	3	2	1	1						1

CO-PSO Mapping

	PSO1	PSO2	PSO3	PSO4
CO1				
CO2		2		
CO3				
CO4		2		

SAHRDAYA COLLEGE OF ENGINEERING AND TECHNOLOGY, KODAKARA
Department of Electrical & Electronics Engineering

EET305	Signals and Systems	3	Ms Ambiliy Francis

CO1	
CO2	
CO3	
CO4	

CO - PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1												
CO2												
CO3												
CO4												

CO-PSO Mapping

	PSO1	PSO2	PSO3	PSO4
CO1				
CO2				
CO3				
CO4				

SAHRDAYA COLLEGE OF ENGINEERING AND TECHNOLOGY, KODAKARA
Department of Electrical & Electronics Engineering

EET307	Synchronous and Induction Machines	3	Mr. Abhijith R Prasad

CO1	Explain the characteristics and functions of management in the contemporary context
CO2	Demonstrate the ability in decision making process and productivity analysis
CO3	Comprehend the concept of decision making process, project management techniques and productivity analysis.
CO4	Comprehend business plans, various functional areas of management.

CO - PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1												
CO1												
CO2												
CO4												

CO-PSO Mapping

	PSO1	PSO2	PSO3	PSO4
CO1				
CO1				
CO2				
CO4				

SAHRDAYA COLLEGE OF ENGINEERING AND TECHNOLOGY, KODAKARA
Department of Electrical & Electronics Engineering

HUT310	Management for Engineers	3	Ms Neethu John

CO1	Explain the characteristics and functions of management in the contemporary context.
CO2	Demonstrate ability in decision making process and productivity analysis.
CO3	Comprehend the concept of decision making process, project management techniques and productivity analysis.
CO4	Comprehend the business plans, various functional areas of management and entrepreneurship.

CO - PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2					3					2	
CO2	2					3						
CO3	2					3	2	3		2	2	
CO4	2					3	2	3	2	2	3	3

CO-PSO Mapping

	PSO1	PSO2	PSO3	PSO4
CO1				
CO2				
CO3				
CO4				

SAHRDAYA COLLEGE OF ENGINEERING AND TECHNOLOGY, KODAKARA
Department of Electrical & Electronics Engineering

MCN201	Disaster Management	--	Mr Abhijth R Prasad

CO1	
CO2	
CO3	
CO4	

CO - PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1												
CO2												
CO3												
CO4												

CO-PSO Mapping

	PSO1	PSO2	PSO3	PSO4
CO1				
CO2				
CO3				
CO4				

SAHRDAYA COLLEGE OF ENGINEERING AND TECHNOLOGY, KODAKARA
Department of Electrical & Electronics Engineering

EEL331	Microprocessor & Microcontroller Lab	2	Ms Drisya K Sasi

CO1	Develop and execute assembly language programs for solving arithmetic and logical problems using microprocessor/microcontroller.
CO2	Design and Implement systems with interfacing circuits for various applications.
CO3	Execute projects as a team using microprocessor/microcontroller for real life applications.

CO - PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	2	2	3			2	2	3		2
CO2	3	3	2	2	3			2	2	3		2
CO3	3	3	3	3	3	3	3	3	3	3	2	2

CO-PSO Mapping

	PSO1	PSO2	PSO3	PSO4
CO1	2	3		2
CO2	2	3		2
CO3	2	3		2

SAHRDAYA COLLEGE OF ENGINEERING AND TECHNOLOGY, KODAKARA
Department of Electrical & Electronics Engineering

EEL333	Electrical Machines Lab II	1	Mr Abhijith R Prasad

CO1	
CO2	
CO3	
CO4	

CO - PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1												
CO2												
CO3												
CO4												

CO-PSO Mapping

	PSO1	PSO2	PSO3	PSO4
CO1				
CO2				
CO3				
CO4				

SAHRDAYA COLLEGE OF ENGINEERING AND TECHNOLOGY, KODAKARA
Department of Electrical & Electronics Engineering

S7 EEE (2018 Admission)

EE401	Electronic Communication	3	Dr Vijikala

CO1	The students will be able to understand the need of modulation in transferring a signal through either wireless or wired communication systems.
CO2	The students will be able to apply analog modulation techniques and receiver fundamentals in analog communication.
CO3	The students will be able to apply baseband digital encoding & decoding techniques in the storage and transmission of digital signal through wired channel.
CO4	The students will be able to understand the performance of communication systems in the presence of noise and interference.

CO - PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2	2	-	-	-	-	-	-	-	-	-
CO2	3	2	2	2	-	-	-	-	-	-	-	-
CO3	3	2	2	2	-	-	-	-	-	-	-	1
CO4	2	2	2	-	-	-	-	-	-	-	-	-

CO-PSO Mapping

	PSO1	PSO2	PSO3	PSO4
CO1	2	-	-	1
CO1	2	-	-	1
CO2	2	-	-	2
CO4	2	-	-	1

SAHRDAYA COLLEGE OF ENGINEERING AND TECHNOLOGY, KODAKARA
Department of Electrical & Electronics Engineering

EE403	Distributed Generation & Smart Grids	3	Ms Ashna Mohan

CO1	Compare various distributed generation systems
CO2	Investigate the concept of micro-grids and their control scheme
CO3	Investigate the concept of Smart Grid and its components
CO4	Familiarize with energy management concepts and demand side management

CO - PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3			2	3	3					3
CO2	3	2	3	3	3	3	3				2	3
CO3	3	2	3	3	3	3	2				2	3
CO4	3	2	3	3	3	3	3				2	3

CO-PSO Mapping

	PSO1	PSO2	PSO3	PSO4
CO1	3		3	2
CO2	3		3	3
CO3	3		3	3
CO4	3		2	2

SAHRDAYA COLLEGE OF ENGINEERING AND TECHNOLOGY, KODAKARA
Department of Electrical & Electronics Engineering

EE405	Electrical System Design	4	Mr Sebin Davis K

CO1	Apply the basic Rules and Regulations of electrical systems and Design to prepare the schematic diagrams
CO2	Design Cable and Busbar sizes by Conducting Short circuit and Voltage drop calculations.
CO3	Apply Energy conservation techniques and Design Solar Power Generation Systems
CO4	Design lighting Schemes by conducting the Lighting calculations

CO - PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3	3		2				2		2
CO2	3	3	3	3	2	2	1					2
CO3	3	3	3	3	2	2	2					2
CO4	3	3	3	3	2	2	2					

CO-PSO Mapping

	PSO1	PSO2	PSO3	PSO4
CO1	3	2		2
CO1	3	2		3
CO2	3	3	3	2
CO4	3	1	2	3

SAHRDAYA COLLEGE OF ENGINEERING AND TECHNOLOGY, KODAKARA
Department of Electrical & Electronics Engineering

EE407	Digital Signal Processing	3	Mr Adarsh S R

CO1	Implement Discrete fourier transform concept in various signal processing operations like frequency analysis of signals,FFT Computation
CO2	Design equivalent realizations of FIR and IIR digital filters in different structural forms
CO3	Analyze finite word length effects in signal processing
CO4	Design filters using MATLAB-FDA toolbox
CO5	Explain Digital signal controllers and their applications

CO - PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2	3	3	2	-	-	-	-	-	-	-
CO1	3	2	3	2	2	-	-	-	-	-	-	-
CO2	3	3	-	-	-	-	-	2	2	2	-	2
CO4	3	2	-	-	-	-	-	2	2	2	-	2
	3	2	-	-	-	-	-	2	2	2	-	2

CO-PSO Mapping

	PSO1	PSO2	PSO3	PSO4
CO1	-	-	-	-
CO1	-	-	-	-
CO2	2	2	-	-
CO4	2	2	-	-
	2	2	-	-

SAHRDAYA COLLEGE OF ENGINEERING AND TECHNOLOGY, KODAKARA
Department of Electrical & Electronics Engineering

EE409	Electrical Machine Design	3	Ms Drisya K Sasi

CO1	Understand the basic concepts of electrical machine design
CO2	Apply the concept of operating principles of static and rotating electrical machines
CO3	Design electrical machines that meet the specified needs with appropriate considerations
CO4	Apply computer based techniques in the design of electrical machines

CO - PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	-	-	-	-	-	-	-	-	-	-	-
CO2	3	2	2	-	-	-	-	2	-	-	-	-
CO3	3	2	3	-	-	2	-	3	-	-	-	2
CO4	3	2	3	-	3	2	-	3	-	-	-	3

CO-PSO Mapping

	PSO1	PSO2	PSO3	PSO4
CO1	1	-	-	2
CO2	2	-	-	2
CO3	3	-	2	3
CO4	3	3	2	3

SAHRDAYA COLLEGE OF ENGINEERING AND TECHNOLOGY, KODAKARA
Department of Electrical & Electronics Engineering

EE469	Electric & Hybrid Vehicles	3	Mr. Abhijith R Prasad

CO1	Summarize a comprehensive overview of electric and hybrid electric vehicles.
CO2	Differentiate between different types of drive train and to choose between them according to the requirement by proper component sizing
CO3	Distinguish the components of an electric vehicle, their types and their sizing based on design requirements
CO4	Classify and Compare the different communication systems in an electric vehicle and energy management in electric vehicles

CO - PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	2	-	2	2	3	-	-	-	-	2
CO2	3	2	3	2	1	-	1	-	-	-	2	2
CO3	3	2	2	3	2	1	3	-	-	-	2	2
CO4	3	2	3	3	3	3	2	-	-	-	2	2

CO-PSO Mapping

	PSO1	PSO2	PSO3	PSO4
CO1	2	-	-	-
CO2	2	2	-	2
CO3	2	2	-	3
CO4	2	2	-	2

SAHRDAYA COLLEGE OF ENGINEERING AND TECHNOLOGY, KODAKARA
Department of Electrical & Electronics Engineering

EE431	Power System Lab	1	Ms Neethu John

CO1	Formulate admittance and impedance matrix for any power system
CO2	Simulate load flow analysis of any given system
CO3	Perform fault analysis and prepare report regarding fault and its effect on power system
CO4	Test earth resistance and also measure the ratio of given CT and PT

CO - PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	2		3				3			2
CO2	3	3	3	2	3				3			2
CO3	3	3	3	2	3				3			2
CO4	3	3	3		3				3			2

CO-PSO Mapping

	PSO1	PSO2	PSO3	PSO4
CO1	2	3		
CO2	2	3		
CO3	2	3		
CO4	2	3		

SAHRDAYA COLLEGE OF ENGINEERING AND TECHNOLOGY, KODAKARA
Department of Electrical & Electronics Engineering

EE451	Seminar and Project Preliminary	2	Ms Neethu John , Ms Ashna Mohan

Seminar

CO1	Survey the literature on new research areas and propose findings on a particular topic related to electrical engineering.
CO2	Organize and illustrate technical documentation with scientific rigor and adequate literal standards on the chosen topic strictly abiding by professional ethics while reporting results and stating claims.
CO3	Promote and develop communication skills

CO - PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3					3	3			3		
CO2		3	3	3				3				3
CO3					3					3		3

CO-PSO Mapping

	PSO1	PSO2	PSO3	PSO4
CO1				
CO2				
CO3				

Project

CO1	Envisage applications for societal needs
CO2	Develop skills for analysis and synthesis of practical systems
CO3	Learn to use new tools effectively and creatively
CO4	Learns to carry out analysis and cost-effective, environmental friendly designs of engineering systems
CO5	Develops ability to write Technical / Project reports and oral presentation of the work done to an audience

CO - PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3	3								
CO2	3		3			3	3		3		3	3
CO3			3		3							
CO4								3	3	3		3
CO5						3	3	3	3	3	3	3

CO-PSO Mapping

	PSO1	PSO2	PSO3	PSO4
CO1	3	3	3	3
CO2	3	3	3	3
CO3		3		3
CO4	3	3	3	3
CO5		3		

SAHRDAYA COLLEGE OF ENGINEERING AND TECHNOLOGY, KODAKARA
Department of Electrical & Electronics Engineering

S4 EEE (2020 Admission)

MAT204	Probability, Random Process and Numerical Methods	4	Ms Savitha Paul

CO1	ANALYZE LOGICAL STATEMENTS TO VALIDATE ARGUMENTS LOGIC TECHNIQUES AND INFERENCE THEORY.
CO2	SOLVE COUNTING PROBLEMS BY APPLYING THE ELEMENTARY COUNTING TECHNIQUES
CO3	APPLY SET THEORY AND ALGEBRAIC SYSTEMS IN DIFFERENT COMPUTATIONAL STRUCTURES
CO4	ANALYSIS OF GENERATING FUNCTIONS AND RECURRENCE RELATIONS

CO - PO Mapping

	PO 1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3	3								3
CO2	3	3	3	3								2
CO3	3		2									2
CO4	3	3	3	2								2

CO-PSO Mapping

	PSO1	PSO2	PSO3	PSO4
CO1	2			
CO2	2			
CO3	2			
CO4	2			

SAHRDAYA COLLEGE OF ENGINEERING AND TECHNOLOGY, KODAKARA
Department of Electrical & Electronics Engineering

EET202	DC Machines and Transformers	4	Drisya K Sasi

CO1	Understand the constructional details and principle of operation of DC machines and transformers
CO2	Analyze the performance characteristics of DC machines and select appropriate type of machine for different applications
CO3	Analyze the performance of transformers under various conditions
CO4	Acquire knowledge in testing of DC machines and transformers to assess its performance

CO - PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3											2
CO2	3	3										2
CO3	3	3										2
CO4	3	3										2

CO-PSO Mapping

	PSO1	PSO2	PSO3	PSO4
CO1	2			
CO2	3			
CO3	3			
CO4	2			

Justification

CO-PO Mapping

		Mapping	Justification
CO1	PO1	3	To understand the construction and working of machines, students need to apply the knowledge of science and engineering fundamentals.

CO2	PO1	3	To analyze the performance of DC machines, students need to apply the knowledge of science and engineering fundamentals.
	PO2	3	With the knowledge of engineering sciences students will do the performance analysis of DC machines
CO3	PO1	3	To analyze the performance of transformers, students need to apply the knowledge of science and engineering fundamentals.
	PO2	3	With the knowledge of engineering sciences students will do the performance analysis of transformers
CO4	PO1	3	To understand the concepts of tests on machines students need to apply the knowledge of engineering fundamentals
	PO2	3	By performing various tests on machines students will analyze the performance of the machine

CO-PSO Mappping

		Mapping	Justification
CO1	PSO4	2	Students will understand the working principle of DC machines and transformers
CO2	PSO4	3	Students will be able to analyze the performance of DC machines and identify the type of machine for various applications
CO3	PSO4	3	Analyze the performance of transformers under various circumstances
CO4	PSO4	2	Perform tests on machines to analyze their performance

SAHRDAYA COLLEGE OF ENGINEERING AND TECHNOLOGY, KODAKARA
Department of Electrical & Electronics Engineering

EET204	Electromagnetic Theory	3	Merry Mathew

CO1	Differentiate different types of coordinate systems and use them for solving the problems of electromagnetic field theory.
CO2	Describe static electric and magnetic fields in different media and their associated laws.
CO3	Apply integral and point form of Maxwell's equations.
CO4	Describe propagation of time varying electromagnetic waves fields in different media.

CO - PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3			2						
CO2	3	3	3			2						
CO3	3	3	3			2						
CO4	3	3	3			2						

CO-PSO Mapping

	PSO1	PSO2	PSO3	PSO4
CO1	3			
CO2	3			
CO3	3			
CO4	3			

Justification

		Mapping	Justification
CO1	PO1		
	PO2		
	PO3		

CO2	PO1		
	PO2		
	PO12		
CO3	PO1		
	PO2		

		Mapping	Justification
CO1	PSO1		
	PSO2		

SAHRDAYA COLLEGE OF ENGINEERING AND TECHNOLOGY, KODAKARA
Department of Electrical & Electronics Engineering

EET206	Digital Electronics	4	Dr V Vijikala

CO1	Identify various number systems, binary codes and formulate digital functions using Boolean algebra
CO2	Design and analyze various combinational and Sequential logic circuits.
CO3	Design various analog to digital and digital to analog conversion circuits and compare the performance
CO4	Acquire basic knowledge on programmable logic devices and VHDL.

CO - PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2										
CO2	3	3	3									3
CO3	3	3	3									3
CO4	3	2	2		3							3

CO-PSO Mapping

	PSO1	PSO2	PSO3	PSO4
CO1	2			
CO2	3			
CO3	3			
CO4	2	3		

Justification

		Mapping	Justification
CO1	PO1	3	Apply the knowledge of mathematics to convert numbers from one number system to other
	PO2	2	Students will be able to analyse logic circuits by using engineering sciences
CO2	PO1	3	Design digital circuits by applying the knowledge of engineering fundamentals
	PO2	3	Students will be able to design logic circuits by using engineering sciences
	PO3	2	Knowledge of logic circuits can be utilized to design solutions for complex engineering problems
	PO12	3	Students will be able to understand the technology upgradation with the knowledge of combinational and sequential circuits
CO3	PO1	3	Understand the concept of ADC and DAC by the the knowledge of engineering fundamentals and science
	PO2	2	Students will be able to analyse ADC and DAC circuits by using engineering sciences
	PO3		
	PO12	3	Knowledge of ADC and DAC will be needed for the design of microcontrollers and microprocessor based circuits
CO4	PO1	3	Acquire knowledge of PLD devices and VHDL from knowledge of engineering fundamentals
	PO3	2	Knowledge of PLDs can be utilized to design solutions for complex engineering problems
	PO5	2	Modern tools are using for the programming of PLDs and VHDL

		Mapping	Justification
CO1	PSO1	2	Students will be able to analyse electronic systems by applying the knowledge of boolean algebra
CO2	PSO1	3	Students will be able to design various electronic systems
CO3	PSO1	3	Students will be able to design various electronic systems
CO4	PSO1	2	Students will be able to design electronic systems with the knowledge of PLDs
	PSO2	3	Students will be aware of modern tools usage for the design of programmable logic circuit devices

SAHRDAYA COLLEGE OF ENGINEERING AND TECHNOLOGY, KODAKARA
Department of Electrical & Electronics Engineering

EST200	Design and Engineering	2	Mr Adarsh S R

CO1	To identify the significance of Engineering Design and apply it for real time problem
CO2	To apply design thinking while learning and practicing engineering.
CO3	To develop innovative, reliable, sustainable and economically viable designs incorporating knowledge in engineering.
CO4	To analyze the prototype models and appraise various design aspects

CO - PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	2			2		2			2		
CO2	3	2			3	2		3	3	2		2
CO3	3		3	3		2	2	3	2	3		3
CO4	2	3	3	3	2	2	2	3	3	3		3

CO-PSO Mapping

	PSO1	PSO2	PSO3	PSO4
CO1	2			
CO2	2			
CO3	2			
CO4	2			

Justification

		Mapping	Justification
CO1	PO1		
	PO2		

	PO3		
CO2	PO1		
	PO2		
	PO12		
CO3	PO1		
	PO2		

		Mapping	Justification
CO1	PSO1		
	PSO2		

SAHRDAYA COLLEGE OF ENGINEERING AND TECHNOLOGY, KODAKARA
Department of Electrical & Electronics Engineering

MCN202	Constitution of India	–	Ashna Mohan

CO1	Understand the background of our constitution and create patriotism and national feeling
CO2	Utilize the fundamental rights and duties
CO3	Understand the working of state and central legislature, executive and judiciary
CO4	Utilize the special provision and statutory institutions

CO - PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1			2		1	2	1	2	2	1		
CO2		1	2			3	1	2				
CO3	1				1			2	2	2	1	2
CO4				1				2				

CO-PSO Mapping

	PSO1	PSO2	PSO3	PSO4
CO1				
CO2				
CO3				
CO4				

Justification

		Correlation	Justification
PO1	CO3	1	Knowledge required for better understanding
PO2	CO2	1	Analysis needed
PO3	CO1	2	Needed for better understanding

	CO2	2	Design and development of solutions needed
PO4	CO4	1	Needed for utilizing special provisions
PO5	CO1	1	Needed for better understanding
	CO3	1	Knowledge required for better understanding
PO6	CO1	2	Needed to live in a society
	CO2	3	Follow fundamental rights and duties while living in a society
PO7	CO1	1	Related to Environment and sustainability
	CO2	1	Develop cost-effective and environmental friendly solutions
PO8	CO1	2	Related to ethics
	CO2	2	Related to ethics
	CO3	2	Related to ethics
	CO4	2	Related to ethics
PO9	CO1	2	Team work needed
	CO3	2	Team work needed
PO10	CO1	1	Needed for better understanding
	CO3	2	Knowledge required for better understanding
PO11	CO3	1	Skills required for better understanding
PO12	CO3	2	Life-long learning of working of state and central legislature, executive and judiciary

SAHRDAYA COLLEGE OF ENGINEERING AND TECHNOLOGY, KODAKARA
Department of Electrical & Electronics Engineering

EEL202	Electrical Machines Lab I	1	Ms Merry Mathew

CO1	Analysis of performance of a DC Machine
CO2	Analysis of performance of a Transformer
CO3	Design system to suit a prerequisite
CO4	Function effectively in a group and to communicate effectively the complex engineering activities

CO - PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2	2	3	2			2	3	3		2
CO2	3	3	2	2				2	3	3		2
CO3	3	3	2	2		3	2		3	3		
CO4	3	3	2	2		2		3	3	3		3

CO-PSO Mapping

	PSO1	PSO2	PSO3	PSO4
CO1	3			2
CO2	3		2	
CO3	3		2	2
CO4	3		2	

Justification

		Mapping	Justification
CO1	PO1		
	PO2		

	PO3		
CO2	PO1		
	PO2		
	PO12		
CO3	PO1		
	PO2		

		Mapping	Justification
CO1	PSO1		
	PSO2		

SAHRDAYA COLLEGE OF ENGINEERING AND TECHNOLOGY, KODAKARA
Department of Electrical & Electronics Engineering

EEL204	Digital Electronics Lab	1	Dr V Vijikala

CO1	Formulate digital functions using Boolean Algebra and verify experimentally
CO2	Design and implement combinational and Sequential logic circuits.
CO3	Design and simulate digital circuit using VHDL
CO4	Design and fabricate a digital circuit using the knowledge acquired from the laboratory.

CO - PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	2						3			
CO2	3	3	3						3			2
CO3	3	3	3		3				3			3
CO4	3	3	3	2	2				3	2	3	3

CO-PSO Mapping

	PSO1	PSO2	PSO3	PSO4
CO1	2			
CO2	2			
CO3	2	3		
CO4	3	2		

Justification

		Mapping	Justification
CO1	PO1		
	PO2		
	PO3		

CO2	PO1		
	PO2		
	PO12		
CO3	PO1		
	PO2		

		Mapping	Justification
CO1	PSO1		
	PSO2		

SAHRDAYA COLLEGE OF ENGINEERING AND TECHNOLOGY, KODAKARA
Department of Electrical & Electronics Engineering

S6 EEE (2018 Admission)

EET302	Linear Control Systems	4	Ms Merry Mathew

CO1	
CO2	
CO3	
CO4	

CO - PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1												
CO2												
CO3												
CO4												

CO-PSO Mapping

	PSO1	PSO2	PSO3	PSO4
CO1				
CO2				
CO3				
CO4				

Justification

		Mapping	Justification
CO1	PO1		
	PO2		

	PO3		
CO2	PO1		
	PO2		
	PO12		
CO3	PO1		
	PO2		

		Mapping	Justification
CO1	PSO1		
	PSO2		

SAHRDAYA COLLEGE OF ENGINEERING AND TECHNOLOGY, KODAKARA
Department of Electrical & Electronics Engineering

EET304	Power Systems II	4	Ms Ashna Mohan

CO1	Design mathematical models for power system components
CO2	Analyze power systems under normal and abnormal conditions
CO3	Apply knowledge of Advanced Mathematics and Electrical Engineering concepts to formulate and solve complex power system problems such as load flow, economic dispatch and load frequency control
CO4	Apply mathematical techniques to evaluate system stability

CO - PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3	2		3						3
CO2	3	3	3	2		3	2					3
CO3	3	3	3	2		3	2					3
CO4	3	3	3	2		3						3

CO-PSO Mapping

	PSO1	PSO2	PSO3	PSO4
CO1	3			2
CO2	3		2	3
CO3	3		3	3
CO4	3		2	2

Justification

		Correlation	Justification
PO1	CO1	3	To design the mathematical model of power system, we need the knowledge of science, Mathematics & Engineering fundamentals

	CO2	3	To carry out fault analysis, we need the knowledge of Mathematics, Science & Engineering fundamentals
	CO3	3	To solve complex power system problems, we need the knowledge of Science & Engineering fundamentals
	CO4	3	To understand the concept of stability, we need the knowledge of Mathematics, Science & Engineering fundamentals
PO2	CO1	3	Need problem analysis to model the power system & its components
	CO2	3	Fault analysis is carried out by using first principles of mathematics, natural sciences, and engineering sciences
	CO3	3	Problem analysis is needed to solve complex power system problems
	CO4	3	Problem analysis is required to apply mathematical techniques to evaluate power system stability
PO3	CO1	3	Design power system components that meet specified needs
	CO2	3	Need design & development of solutions to do fault analysis
	CO3	3	Need design & development of solutions to formulate power system problems
	CO4	3	Need design solutions to understand the concept of stability
PO4	CO1	3	Need synthesis of the information to provide valid conclusions
	CO2	3	Conduct investigations to illustrate different faults in power system
	CO3	3	Conduct investigations to solve major issues in power system
	CO4	3	Conduct investigations effectively with intensive knowledge
PO5	CO1		Not using any modern tools
	CO2		Not using any modern tools
	CO3	2	Apply appropriate techniques & resources to meet the

			expected outcome
	CO4	2	Usage of modern engineering and IT tools to apply mathematical techniques
PO6	CO1	3	Apply reasoning informed by the contextual knowledge to understand the concept
	CO2	3	Relevant to the professional engineering practice
	CO3	3	Relevant to the professional engineering practice
	CO4	3	Relevant to the professional engineering practice
PO7	CO1		Not relevant in environmental context
	CO2	2	Impact of the professional engineering solutions in societal and environmental contexts is required
	CO3	2	Relevant in environmental context
	CO4		Not Relevant in environmental context
PO8	CO1		Not related to ethics
	CO2		Not related to ethics
	CO3		Not related to ethics
	CO4		Not related to ethics
PO9	CO1		Not related to teamwork
	CO2		Not related to teamwork
	CO3		Not related to teamwork
	CO4		Not related to teamwork
PO10	CO1		Not related to communication
	CO2		Not related to communication
	CO3		Not related to communication
	CO4		Not related to communication
PO1	CO1		Not related to project management and finance

1	CO2		Not related to project management and finance
	CO3		Not related to project management and finance
	CO4		Not related to project management and finance
PO12	CO1	3	Life-long learning in the broadest context of technological change
	CO2	3	Life-long learning in the broadest context of technological change
	CO3	3	Life-long learning in the broadest context of technological change
	CO4	3	Life-long learning in the broadest context of technological change
PSO1	CO1	3	Analyze, design and synthesize different electrical and electronic systems to obtain the mathematical model of power system
	CO2	3	Analyze, design and synthesize different electrical and electronic systems to meet the outcome
	CO3	3	Analyze, design and synthesize different electrical and electronic systems to solve power system problems
	CO4	3	Analyze, design and synthesize different electrical and electronic systems to evaluate power system stability
PSO2	CO1		Not needed any software based comprehension
	CO2		Not needed any software based comprehension
	CO3		Not needed any software based comprehension
	CO4		Not needed any software based comprehension
PSO3	CO1		Creative design not needed
	CO2	2	Creative design needed to analyse power system
	CO3	3	Solution of complex power system problems needed to produce and maintain quality of power supply

	CO4	2	Evaluation of stability is needed to maintain the quality of power supply
PSO 4	CO1	2	Modeling analysis of electrical and electronic systems is needed while designing mathematical models
	CO2	3	Fault analysis is required in modeling analysis of electrical and electronic systems
	CO3	3	Solution of complex power system problems included in modeling analysis of electrical and electronic systems
	CO4	2	Required modeling analysis of electrical and electronic systems to evaluate power system stability

SAHRDAYA COLLEGE OF ENGINEERING AND TECHNOLOGY, KODAKARA
Department of Electrical & Electronics Engineering

EET306	Power Electronics	4	Ms Drisya K Sasi

CO1	Analyze and compare the performance of various power semiconductor devices
CO2	Analyze the performance and design various power electronic converters
CO3	Design and compare the various switching techniques for power electronic converters
CO4	Describe the basic drive schemes for DC and AC motors

CO - PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3										2
CO2	3	3	3									2
CO3	3	3	3									2
CO4	2											2

CO-PSO Mapping

	PSO1	PSO2	PSO3	PSO4
CO1				2
CO2	2			2
CO3	3			3
CO4				2

Justification

		Mapping	Justification
CO1	PO1	3	To analyze and compare the performance of power semiconductor devices, students need to apply the knowledge of science and engineering fundamentals.

	PO2	3	By applying the knowledge of engineering sciences, students will analyze the working and compare the performance characteristics of various power semiconductor devices
	PO12	2	Students will be able to adapt the technological changes in the field of power semiconductor devices by analyzing and comparing the performance
CO2	PO1	3	To analyze and design power electronic circuits, students need to apply the knowledge of mathematics, science and engineering fundamentals.
	PO2	3	By applying first principles of mathematic and engineering sciences, students will be able to analyze the circuits
	PO3	3	Students will be able to design power electronic converters according to their requirements
	PO12	2	Students will be able to analyze power electronic converters with any kind of topologies
CO3	PO1	3	To analyze and compare switching techniques, students need to apply the knowledge of mathematics, science and engineering fundamentals.
	PO2	3	By applying first principles of mathematic and engineering sciences, students will be able to analyze the switching techniques
	PO3	3	Students will be able to design switching circuits for power electronic converters according to the requirements
	PO12	2	Students will be able to analyze and compare any modern switching techniques for power electronic converters
CO4	PO1	2	To describe the working of motor drives, students need to apply the knowledge of power electronic converters
	PO12	2	By understanding the basic concepts of motor drives students will be able to adapt the technological changes in the field of drives

		Mapping	Justification
CO1	PSO4	2	Students will be able to choose power semiconductor

			devices according to the application
CO2	PSO1	3	Students will be able to design various power electronic converters according to the requirements
	PSO4	2	Students will be able to identify power electronic converters according to the application
CO3	PSO1	3	Students will be able to design switching techniques for the power electronic converters
	PSO4	3	Students will be able to identify the most suited switching technique for power electronic converters according to the application
CO4	PSO4	2	Students will be able to understand the concept of motor drives and identify the drive scheme according to the application

SAHRDAYA COLLEGE OF ENGINEERING AND TECHNOLOGY, KODAKARA
Department of Electrical & Electronics Engineering

EET322	Renewable Energy Systems	3	Ms Neethu John

CO1	Identify global and Indian energy sources
CO2	Design and analyze the performance of small isolated renewable energy sources.
CO3	Develop sustainable solutions to energy related challenges using renewable energy sources
CO4	Examine various energy conversion technologies of renewable energy sources

CO - PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2					3	3					3
CO2	3	3	3			3	3					3
CO3	3	3	3			3	3					3
CO4	3					3	3					3

CO-PSO Mapping

	PSO1	PSO2	PSO3	PSO4
CO1				
CO2	3			3
CO3	3			3
CO4				3

SAHRDAYA COLLEGE OF ENGINEERING AND TECHNOLOGY, KODAKARA
Department of Electrical & Electronics Engineering

Justification

		Mapping	Justification
CO1	PO1		
	PO2		
	PO3		
CO2	PO1		
	PO2		
	PO12		
CO3	PO1		
	PO2		

		Mapping	Justification
CO1	PSO1		
	PSO2		

SAHRDAYA COLLEGE OF ENGINEERING AND TECHNOLOGY, KODAKARA
Department of Electrical & Electronics Engineering

EET308	Comprehensive Course Work	1	Ms Merry Mathew

CO1	
CO2	
CO3	
CO4	

CO - PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1												
CO2												
CO3												
CO4												

CO-PSO Mapping

	PSO1	PSO2	PSO3	PSO4
CO1				
CO2				
CO3				
CO4				

Justification

		Mapping	Justification
CO1	PO1		
	PO2		
	PO3		

CO2	PO1		
	PO2		
	PO12		
CO3	PO1		
	PO2		

		Mapping	Justification
CO1	PSO1		
	PSO2		

SAHRDAYA COLLEGE OF ENGINEERING AND TECHNOLOGY, KODAKARA
Department of Electrical & Electronics Engineering

EEL332	Power Systems Lab	2	Ms Neethu John

CO1	Develop mathematical models and conduct transient analysis of power system networks
CO2	Perform Load flow analysis & fault analysis, prepare report regarding its effect on power system
CO3	Conduct appropriate tests for any power system component as per standards
CO4	Conduct site inspection and evaluate the performance of solar power plant.

CO - PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	2		3				3			2
CO2	3	3	3		3				3			2
CO3	3	3	3		3				3			2
CO4	3	3	3	3	3		3		3		3	2

CO-PSO Mapping

	PSO1	PSO2	PSO3	PSO4
CO1	2	3		
CO2	2	3		
CO3	2	3		
CO4	2	3		

Justification

		Mapping	Justification
CO1	PO1		
	PO2		

	PO3		
CO2	PO1		
	PO2		
	PO12		
CO3	PO1		
	PO2		

		Mapping	Justification
CO1	PSO1		
	PSO2		

SAHRDAYA COLLEGE OF ENGINEERING AND TECHNOLOGY, KODAKARA
Department of Electrical & Electronics Engineering

EEL334	Power Electronics Lab	2	Ms Drisya K Sasi

CO1	Analyze the performance characteristics of various power semiconductor devices
CO2	Design and implement various switching circuits for power semiconductor devices
CO3	Design and implement various power electronic converters
CO4	Design and develop simulation models of various power electronic converters and their application in various drives

CO - PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3	3	2				3	3		
CO2	3	3	3	3	2				3	3		
CO3	3	3	3	3	2				3	3		
CO4	3	3	3	3	3				3	3		3

CO-PSO Mapping

	PSO1	PSO2	PSO3	PSO4
CO1	3			3
CO2	3			3
CO3	3			3
CO4	3	3		3

Justification

		Mapping	Justification
CO1	PO1	3	To analyze the performance characteristics of semiconductor devices, students need to apply the knowledge of engineering fundamentals

	PO2	3	Students will be able to analyze the performance characteristics by the knowledge of engineering sciences
	PO3	3	Students will be able to design a circuit for finding the characteristics of devices
	PO4	3	By conducting experiments, students will reach in a final solution
	PO5	2	Students will be able to use modern tools like digital storage oscilloscope (DSO)
	PO9	3	Students will be able to function effectively as an individual and in a team
	PO10	3	Students will be able to communicate effectively on a complex engineering problem
CO2	PO1	3	By applying engineering fundamentals, students should design of switching circuits for power electronic circuits
	PO2	3	Students will be able to analyze the performance of various switching circuits by observing the waveforms
	PO3	3	Students will be able to design switching circuits according to the applications
	PO4	3	Students will conduct experiments to reach in a conclusion
	PO5	3	Students will be able to use modern tools like digital storage oscilloscope (DSO)
	PO9	3	Students will be able to function effectively as an individual and in a team
	PO10	3	Students will be able to communicate effectively on a complex engineering problem
CO3	PO1	3	By applying engineering fundamentals, students should design of power electronic circuits
	PO2	3	Students will be able to analyze the performance of the power electronic circuits by observing the waveforms
	PO3	3	Students will be able to design power electronic circuits according to the specifications

	PO4	3	Students will conduct experiments to reach in a conclusion
	PO5	2	Students will be able to use modern tools like digital storage oscilloscope (DSO)
	PO9	3	Students will be able to function effectively as an individual and in a team
	PO10	3	Students will be able to communicate effectively on a complex engineering problem
CO4	PO1	3	By applying engineering fundamentals, students should design of power electronic and drive circuits
	PO2	3	Students will be able to analyze the transient and steady state performance of the power electronic circuits by simulation
	PO3	3	Students will be able to design power electronic circuits according to the specifications
	PO4	3	Students will conduct simulation studies to reach in a conclusion
	PO5	3	Students will be able to use modern IT tool MATLAB to perform simulation
	PO9	3	Students will be able to function effectively as an individual and in a team
	PO10	3	Students will be able to communicate effectively on a complex engineering problem
	PO12	3	Students will be aware about a modern simulation software MATLAB, which will be helpful to perform any complex circuit simulations in future

		Mapping	Justification
CO1	PSO1	3	Students will be able to design circuits for analyzing the characteristics of semiconductor switches
	PSO4	3	Students will be analyze the circuits and reach in a conclusion
CO2	PSO1	3	Students will be able to design power electronic converters

			and analyze their performance
	PSO4	3	Students will be able to design power electronic converters according to the specifications
CO3	PSO1	3	Students will be able to design switching circuits for power electronic converters and analyze their performance
	PSO4	3	Students will be able to design switching circuits for power electronic converters according to the specifications
CO4	PSO1	3	Students will be able to design power electronic converters & drive circuits and analyze their performance
	PSO2	3	Students will be able to use modern IT tool MATLAB to perform simulation
	PSO4	3	Students will be able to design and simulate power electronic converters according to the specifications

SAHRDAYA COLLEGE OF ENGINEERING AND TECHNOLOGY, KODAKARA
Department of Electrical & Electronics Engineering

S8 EEE (2018 Admission)

EE402	Special Electrical Machines	3	Mr Abhijith R Prasad

CO1	Understand construction of different special electrical machines
CO2	Familiarize the working principle of special electrical machines
CO3	Analyze the performance of special electrical machines in varying conditions
CO4	Justify the selection of special electrical machines for various applications

CO - PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2								2		
CO2	3	2										2
CO3	3	3	2	3								2
CO4	3	3	2	3		2				2		2

CO-PSO Mapping

	PSO1	PSO2	PSO3	PSO4
CO1	2			
CO2	2			2
CO3	3			2
CO4	3			

Justification

		Mapping	Justification
CO1	PO1	3	Apply the engineering fundamentals to understand the construction.

	PO2	2	Identify the design
	PO10	2	
CO2	PO1	3	
	PO2	3	
CO3	PO1	3	
	PO2	3	
	PO3	2	
CO4	PO1	3	
	PO2	3	
	PO3	2	
	PO6	2	
	PO10	2	
	PO12	2	

		Mapping	Justification
CO1	PSO1		
	PSO2		

SAHRDAYA COLLEGE OF ENGINEERING AND TECHNOLOGY, KODAKARA
Department of Electrical & Electronics Engineering

EE404	Industrial Instrumentation & Automation	3	Ms Neethu John

CO1	Identify instruments and transducers for various applications
CO2	Acquire insight on data acquisition, Processing & Monitoring system
CO3	Design various signal conditioning systems & analyze the dynamic responses
CO4	Understand the concept of virtual instrumentation, Automation & programming with PLC

CO - PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3		2	2		2						3
CO2	2	3		3								
CO3	3	3	3	3		2				3		3
CO4		2	2		3	2				3		3

CO-PSO Mapping

	PSO1	PSO2	PSO3	PSO4
CO1	2			
CO2	2			3
CO3	3			3
CO4	2	3		

Justification

		Mapping	Justification
CO1	PO1		
	PO2		

	PO3		
CO2	PO4		
	PO5		
	PO6		
CO3	PO7		
	PO8		
	PO9		
	PO10		
	PO11		
	PO12		

		Mapping	Justification
CO1	PSO1		
	PSO2		

SAHRDAYA COLLEGE OF ENGINEERING AND TECHNOLOGY, KODAKARA
Department of Electrical & Electronics Engineering

EE474	Energy Management & Auditing	3	Mr Sebin Davis K

CO1	Suggest the energy management techniques and strategies in energy management system.
CO2	Improve thermal efficiency by designing suitable systems for heat recovery opportunities for energy savings.
CO3	Perform energy audit of an industry/Organization.
CO4	Evaluate the techno-economic feasibility of the energy conservation technique adopted.

CO - PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3		3	2		3				2	2
CO2	3	3	3	3			2					2
CO3	3	3	3	3			2		2	2	2	
CO4	3	3	3	3			3		2	2	2	

CO-PSO Mapping

	PSO1	PSO2	PSO3	PSO4
CO1	3			
CO2				2
CO3	3		2	2
CO4	3		2	2

Justification

		Mapping	Justification
CO1	PO1		
	PO2		

	PO3		
	PO4		
	PO5		
	PO6		
	PO7		
	PO8		
	PO9		
	PO10		
	PO11		
	PO12		
CO3	PO1		
	PO2		

		Mapping	Justification
CO1	PSO1		
	PSO2		

SAHRDAYA COLLEGE OF ENGINEERING AND TECHNOLOGY, KODAKARA
Department of Electrical & Electronics Engineering

EE492	Project	6	Ms Ashna Mohan

CO1	Generate and implement innovative ideas for social benefit and develop the ability to work as a team
CO2	Reorganize the procedures with a concern for society, environment and ethics
CO3	Analyze and discuss the results to draw valid conclusions
CO4	Prepare a report as per recommended format and defend the work
CO5	Explore the possibility of publishing papers in peer reviewed journals/conference proceedings

CO - PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3	3	2	3	3	3	3		2	2
CO2	3	3	2	3	2	3	3	3			2	2
CO3	3	3	3	3	2	2	2	3			2	1
CO4	2	2	3	3	3					3		3
CO5	1	1	1	2	3					3		3

CO-PSO Mapping

	PSO1	PSO2	PSO3	PSO4
CO1	2	2	2	3
CO2	2	2	2	2
CO3	2	2	2	3
CO4		2		
CO5		2		

Justification

		Correlation	Justification

PO1	CO1	3	Demonstrate sound technical knowledge in the domain of the selected project topic by applying the knowledge of science and engineering fundamentals
	CO2	3	Applying the knowledge of science and engineering fundamentals, develop cost-effective and environment friendly designs
	CO3	-	Not related to engineering knowledge
	CO4	-	Not related to engineering knowledge
	CO5	-	Not related to engineering knowledge
PO2	CO1	3	Demonstrate sound technical knowledge in the domain of the selected project topic by analysing the problem using engineering sciences
	CO2	-	Not related to problem analysis
	CO3	-	Not related to problem analysis
	CO4	-	Not related to problem analysis
	CO5	-	Not related to problem analysis
PO3	CO1	3	Design solutions for the selected project topic by applying the sound technical knowledge
	CO2	3	Design and develop cost-effective and environment friendly solutions
	CO3	3	Design and develop solutions by means of modern tools
	CO4	-	Not related to design and development
	CO5	-	Not related to design and development
PO4	CO1	3	Conduct investigations and research on the selected topic
	CO2	-	Not related to investigations
	CO3	-	Not related to investigations
	CO4	-	Not related to investigations
	CO5	-	Not related to investigations
PO5	CO1	-	Not related to modern tool usage

	CO2	-	Not related to modern tool usage
	CO3	3	Using modern tools, design and develop solutions for the problem
	CO4	-	Not related to modern tool usage
	CO5	-	Not related to modern tool usage
PO6	CO1	-	Not related to reasoning
	CO2	3	Apply reasoning informed by the contextual knowledge while designing solutions
	CO3	-	Not related to reasoning
	CO4	-	Not related to reasoning
	CO5	3	Apply reasoning informed by the contextual knowledge while demonstrating the product
PO7	CO1	-	Not related to Environment and sustainability
	CO2	3	Develop cost-effective and environmental friendly solutions
	CO3	-	Not related to Environment and sustainability
	CO4	-	Not related to Environment and sustainability
	CO5	3	Demonstrate the product with the knowledge of, and need for sustainable development
PO8	CO1	-	Not related to engineering ethics
	CO2	-	Not related to engineering ethics
	CO3	-	Not related to engineering ethics
	CO4	3	Consider engineering ethics while writing technical paper and oral presentation
	CO5	3	Demonstrate the developed product by applying the knowledge of engineering ethics
PO9	CO1	-	Not related to team work
	CO2	3	Work as a team to design and dvop solutions
	CO3	-	Not related to team work

	CO4	3	Work as a team during the oral presentation of the work carried out
	CO5	3	Work as a team during the demonstration of the product
PO10	CO1	-	Not related to communication
	CO2	-	Not related to communication
	CO3	-	Not related to communication
	CO4	3	Communicate effectively during the presentation of the work
	CO5	3	Communicate effectively during the demonstration of the work
PO11	CO1	-	Not related to finance
	CO2	3	Design a cost-effective solution
	CO3	-	Not related to finance
	CO4	-	Not related to finance
	CO5	3	Final product should be cost effective
PO12	CO1	-	Not related to lifelong learning
	CO2	3	Develop a solution which will be effective in the broadest context of technological change
	CO3	-	Not related to lifelong learning
	CO4	3	Develop a solution which will be effective in the broadest context of technological change
	CO5	3	Develop a product which will be effective in the broadest context of technological change
PSO1	CO1	3	Analyse the topic with different applications with knowledge of various materials used and its feasibility with the environment
	CO2	3	Design and develop solution with the knowledge of various materials used and its feasibility with the environment
	CO3	-	Not related to the knowledge of various materials used and its feasibility with the environment
	CO4	-	Not related to the knowledge of various materials used and its

			feasibility with the environment
	CO5	-	Not related to the knowledge of various materials used and its feasibility with the environment
PSO 2	CO1	-	Not related to softwares
	CO2	-	Not related to softwares
	CO3	3	Design and development of solutions can be carried out by using different softwares
	CO4	-	Not related to softwares
	CO5	-	Not related to softwares
PSO 3	CO1	-	Not related to quality of power and energy audit
	CO2	3	Develop a solution which will maintain the power quality
	CO3	-	Not related to quality of power and energy audit
	CO4	-	Not related to quality of power and energy audit
	CO5	-	Not related to quality of power and energy audit
PSO 4	CO1	-	Not related to electrical and electronic systems and application of different converters
	CO2	3	Knowledge of electrical and electronic systems and application of different converters will help the students to design and develop solution for the problem
	CO3	-	Not related to electrical and electronic systems and application of different converters
	CO4	-	Not related to electrical and electronic systems and application of different converters
	CO5	-	Not related to electrical and electronic systems and application of different converters