

SAHRDAYA COLLEGE OF ENGINEERING AND TECHNOLOGY, KODAKARA

Department of Electrical & Electronics Engineering

SCET/EEE/QS/19-20/02

Department Vision

To excel in engineering education and research, inculcating professional ethics in students and emerge as leaders globally in the field of Electrical Engineering

Department Mission

Impart quality education to produce competent electrical engineers capable of extending technological services

Engage in research and development by promoting innovative ideas and use of state-of-art technologies

To enable students to meet the challenges in the field of Electrical Engineering through innovations and pursuit of new knowledge and make them ethically driven professionals

Name of the Programme: B.Tech Electrical & Electronics Engineering

Programme Educational Objectives (PEOs)

PEO 1	To use broad knowledge of electrical engineering as a foundation to be qualified research engineer in the field of electrical product design and allied consultancy works
PEO 2	To impart creative and critical reasoning skills to solve technical problems, ethically and responsibly, feasible with environment.
PEO 3	To provide students with an academic of excellence, leadership, written ethical codes and guidelines, and the life-long learning needed for a successful professional career as an engineers, scientists, technocrats, administrators and an entrepreneur.
PEO 4	To inculcate in students professional and ethical attitude, effective communication skills, teamwork skills, multidisciplinary approach and an ability to relate engineering issues to broader social context

SAHRDAYA COLLEGE OF ENGINEERING AND TECHNOLOGY, KODAKARA

Department of Electrical & Electronics Engineering

Programme Outcomes (POs)

PO 1	Engineering knowledge: Apply knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
PO 2	Problem analysis: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences
PO 3	Design/development of solutions: Design solutions for complex engineering problems and design system components or processes that meet specified needs with appropriate consideration for public health and safety, and the cultural, societal, and environmental considerations
PO 4	Conduct investigations of complex problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions
PO 5	Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations
PO 6	The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
PO 7	Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
PO 8	Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice
PO 9	Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings
PO 10	Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and

SAHRDAYA COLLEGE OF ENGINEERING AND TECHNOLOGY, KODAKARA

Department of Electrical & Electronics Engineering

	design documentation, make effective presentations, and give and receive clear instructions.
PO 11	Project management and finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
PO 12	Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

Programme Specific Outcomes (PSOs)

PSO 1	Ability to analyze, design and synthesize different electrical and electronic systems for applications with knowledge of various materials used and its feasibility with the environment.
PSO 2	To develop software based comprehension and use of MATLAB, CAD, MIPOWER etc in applied science.
PSO 3	Creative design to produce and maintain quality of power supply and use of suitable instruments for energy audit and calibration.
PSO 4	To understand the concepts of modeling analysis of electrical and electronic systems and application of different converters and processors to optimize the process.

SAHRDAYA COLLEGE OF ENGINEERING AND TECHNOLOGY, KODAKARA

Department of Electrical & Electronics Engineering

S3 EEE (2019 Admission)

MAT201	Partial Differentiation Equations & Complex Analysis	3	Ms Rani Thomas (AS)
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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
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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 Abhijith R Prasad
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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, transducersbased 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				
CO2				
CO3				
CO4				
CO5				
CO6				

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

EET205	Analog Electronic Circuits	3	Ms Neethu John
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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	3	1	2	-	3	2	2	2	-	3
CO2	3	2	3	3	-	-	2	-	-	-	-	3
CO3	2	1	1	1	-	-	1	-	-	-	-	1
CO4	3	3	3	-	-	-	3	-	-	3	-	3

CO-PSO Mapping

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

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

HUT200	Professional Ethics	2	Mr Shimin V V
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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	Mr Sebin Davis K
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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 Shimin V V, Mr Adarsh
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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 Merry Mathew, Mr Abhijith R Prasad
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CO1	Design and develop various electronic circuits using diodes and Zener diodes.
CO2	Design and implement amplifier and oscillator circuits using BJT and JFET.
CO3	Design and implement basic circuits using IC (OPAMP and 555 timers).
CO4	Simulate electronic circuits using any circuit simulation software.

CO - PO Mapping

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

CO-PSO Mapping

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

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

S5 EEE (2018 Admission)

EE301	Power Generation, Transmission and Protection	4	Ms Neethu John
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CO1	Discuss different types of power generating station and energy related terms
CO2	Differentiate the features of overhead, underground transmission line
CO3	Analyze the transmission line parameters and various protection schemes to be adopted in power system
CO4	Summarize the HVDC ,Flexible AC transmission & power distribution systems

CO - PO Mapping

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

CO-PSO Mapping

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

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

EE303	Linear Control Systems	3	Ms Merry Mathew
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CO1	Develop mathematical models of various systems.
CO2	Analyse the stability aspects of linear time invariant systems.
CO3	Apply root locus technique for stability analysis.
CO4	Analyze performance characteristics of systems using Frequency response methods.

CO - PO Mapping

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

CO-PSO Mapping

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

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

EE305	Power Electronics	3	Ms Drisya K Sasi
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CO1	Understand the concept of various power semiconductor devices
CO2	Design triggering circuits for power semiconductor devices
CO3	Analyze and design different types of power electronic converters
CO4	Distinguish various switching techniques

CO - PO Mapping

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

CO-PSO Mapping

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

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

EE307	Signals and Systems	3	Mr. Abhijith R Prasad
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CO1	Define, represent, classify and characterize basic properties of continuous and discrete time signals and systems.
CO2	Represent and analyse continuous time and discrete time signals in Fourier series
CO3	Analyse signals in frequency domain using of Laplace, Fourier and Z- transforms
CO4	Understand the process of sampling and analysis of discrete time signals

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

EE309	Microprocessor and Embedded Systems	3	Dr Vijikala
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CO1	The students will be able to apply the fundamentals of assembly level programming of 8085 microprocessor and 8051 microcontroller.
CO2	The students will be able to execute real time interfaces with microprocessor.
CO3	The students will be able to develop skills for writing C programs for 8051 microcontroller.
CO4	The students will be able to design microprocessors/microcontrollers-based systems.

CO - PO Mapping

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

CO-PSO Mapping

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

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

EE367	New and Renewable Energy Systems	3	Ms Ashna Mohan
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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 capture, conversion and application of renewable energy sources.

CO - PO Mapping

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

CO-PSO Mapping

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

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

EE341	Design Project	2	Mr Sebin Davis K
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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

EE331	Digital Circuits and Embedded Systems Lab	1	Dr Vijikala , Ms Drisya K Sasi
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CO1	Design, setup and analyze various digital circuits
CO2	Simulate logic circuits using VHDL & VERILOG
CO3	Design and analyze programs using 8085 for a particular application
CO4	Design and analyze programs using 8086 for a particular application
CO5	Design and analyze programs using 8051 for a particular application

CO - PO Mapping

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

CO-PSO Mapping

	PSO1	PSO2	PSO3	PSO4
CO1	3	-	-	-
CO1	3	1	-	1
CO2	3	1	-	1
CO4	3	1	-	1
CO5	3	1	-	1

SAHRDAYA COLLEGE OF ENGINEERING AND TECHNOLOGY, KODAKARA

Department of Electrical & Electronics Engineering

EE333	Electrical Machines Lab II	1	Mr Abhijith R Prasad, Mr Adarsh
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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 (2017 Admission)

EE401	Electronic Communication	3	Dr Vijikala
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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
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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
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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
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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
CO5	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
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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. Shimin V V
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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, Ms Merry Mathew
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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 Drisya K Sasi , Ms Ashna Mohan
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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				3		
CO2		3		3				3				3
CO3										3		3

CO-PSO Mapping

	PSO1	PSO2	PSO3	PSO4
CO1	2	2		2
CO2		2		
CO3				

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

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 (2019 Admission)

MAT204	Probability, Random Process and Numerical Methods	4	Savitha Paul
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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

	PO1	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	Drisy K Sasi
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CO1	Acquire knowledge about constructional details and principle of operation of DC machines and transformers
CO2	Describe the performance characteristics of DC machines and select appropriate type of machine for different applications
CO3	Analyse 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	2	2									2
CO3	3	3	2									2
CO4	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

EET204	Electromagnetic Theory	3	Merry Mathew
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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			

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

EET206	Digital Electronics	4	Dr V Vijikala
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CO1	Identify various number systems, binary codes and formulate digital functions using Boolean algebra
CO2	Design and implement combinational and Sequential logic circuits.
CO3	Compare the operation of various analog to digital and digital to analog conversion circuits.
CO4	Explain the basic concepts of programmable logic devices and VHDL.

CO - PO Mapping

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

CO-PSO Mapping

	PSO1	PSO2	PSO3	PSO4
CO1				
CO2				
CO3				
CO4				

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

EST200	Design and Engineering	4	Mr Shimin V V
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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			

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

MCN202	Constitution of India	3	Abhijith R Prasad
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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 legislator
CO4	Utilize the special provision and statutory institutions

CO - PO Mapping

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

CO-PSO Mapping

	PSO1	PSO2	PSO3	PSO4
CO1				
CO2				
CO3				
CO4				

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

EEL202	Electrical Machines Lab I	1	Mr Abhijith R Prasad
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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	

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

EEL204	Digital Electronics Lab	1	Dr V Vijikala
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CO1	Formulate digital functions using Boolean Algebra and verify experimentally
CO2	Design and implement combinational logic circuits.
CO3	Design and implement sequential logic circuits
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	2	2	3	3			2	3	3		
CO2	3	3	3	3	3			2	3	3		
CO3	3	3	3	3	3			2	3	3		
CO4	3	2	3	3	3			2	3	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

S6 EEE (2018 Admission)

EE302	Electromagnetics	4	Ms Neethu John
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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						1
CO2	3	3	3	-	-	2						1
CO3	3	3	3	-	-	2						1
CO4	3	3	3	-	-	2						1

CO-PSO Mapping

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

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

EE304	Advanced Control Theory	3	Mr Adarsh S R
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CO1	Discuss the different controller and compensator types
CO2	Analyse systems using the state space method
CO3	Analyse the sampled data control system and discuss the state feedback controller design
CO4	Discuss about non-linear systems and stability analysis with phase plane analysis

CO - PO Mapping

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

CO-PSO Mapping

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

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

EE306	Power System Analysis	3	Ms Ashna Mohan
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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	3		3						3
CO2	3	3	3	3		3	2					3
CO3	3	3	3	3	2	3	2					3
CO4	3	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

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

EE308	Electric Drives	3	Mr Shimin V V
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CO1	Understand basic concepts of electric drives and various control techniques employed for controlling DC and AC motor drives
CO2	Design and analyse various semiconductor controlled DC and AC motor drives
CO3	Justify the selection of drives for various applications
CO4	Understand control techniques of Permanent Magnet Synchronous Motor

CO - PO Mapping

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

CO-PSO Mapping

	PSO1	PSO2	PSO3	PSO4
CO1				
CO2	2			2
CO3				2
CO4				

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

EE372	Biomedical Engineering	3	Dr V Vijikala
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CO1	Understand about the various physiological systems of the body and problems encountered in biomedical measurements
CO2	Understand the various types of electrodes used in biomedical instrumentation
CO3	Understanding of various potentials in the body and how it is measured by various instruments.
CO4	Understand the various biomedical instruments used for clinical diagnosis and surgery

CO - PO Mapping

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

HS300	Principles of Management	3	Mr Sebin Davis K
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CO1	Develop ability to critically analyse and evaluate a variety of management practices in the contemporary context
CO2	Understand and apply a variety of management and organisational theories in practice
CO3	Able to mirror existing practices or to generate their own innovative management competencies, required for today's complex and global workplace
CO4	Critically reflect on ethical theories and social responsibility ideologies to create sustainable organisations

CO - PO Mapping

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

EE332	Systems & Control Lab	1	Mr Adarsh S R
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CO1	Identify the system and develop mathematical models for it.
CO2	Discuss the performance analysis methods for systems.
CO3	Design suitable controllers and outline the effect of it on the system performance.
CO4	Use MATLAB to review the control system design procedure.

CO - PO Mapping

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

CO-PSO Mapping

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

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

EE334	Power Electronics & Drives Lab	1	Ms Drisya K Sasi
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CO1	Students will be able to design and set up various power electronic converters.
CO2	Students will be able to analyse various power electronic converters.
CO3	Application of various power electronic converters for the implementation of various motor control applications.
CO4	Simulation 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		2				3	2		
CO2	3	3							3	2		
CO3	3	3	2		3				3	2		
CO4	3	3	2		3				3	2		

CO-PSO Mapping

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

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

EE352	Comprehensive Viva	1	Ms Neethu John
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CO1	Acquire thorough knowledge of concepts in lower semesters
CO2	Confident in discussing the fundamental aspects of any engineering problem/situation and give answers in dealing with them.

CO - PO Mapping

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

CO-PSO Mapping

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

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

S8 EEE (2016 Admission)

EE402	Special Electrical Machines	3	Mr Abhijith R Prasad
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CO1	Understand construction of different special electrical machines
CO2	Familiarize the working principle of special electrical machines
CO3	Summarize the performance analysis of special electrical machines in varying conditions
CO4	Obtain knowledge about applications which these machines are used

CO - PO Mapping

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

CO-PSO Mapping

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

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

EE404	Industrial Instrumentation & Automation	3	Ms Neethu John
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CO1	Select 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	2	3				3
CO2	3	3		3		3	2	3				3
CO3	3	3	3	3		2	2	3		3		3
CO4		2	2		3	3	3	3		3		3

CO-PSO Mapping

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

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

EE474	Energy Management & Auditing	3	Ms Ashna Mohan
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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	Carry out 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	
CO4	3	3	3	3			3		2	2	2	

CO-PSO Mapping

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

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

EE492	Project	6	Ms Ashna Mohan
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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		