
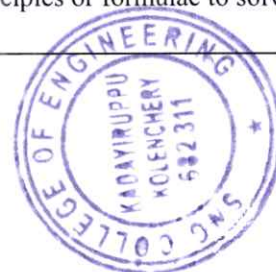


SREE NARAYANA GURUKULAM COLLEGE OF ENGINEERING

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Kadayiruppu P O, Ernakulam, Kerala – 682 311

Department of Electrical and Electronics Engineering		
BTech in Electrical and Electronics Engineering 2019 - Scheme		
Semester I		
Course Code & Course Name	CO No	CO Description
MAT 10 1 LINEAR ALGEBRA AND CALCULUS	CO1	Solve systems of linear equations, diagonalize matrices and characterise quadratic forms
	CO2	Compute the partial and total derivatives and maxima and minima of multivariable functions
	CO3	Compute multiple integrals and apply them to find areas and volumes of geometrical shapes, mass and centre of gravity of plane laminas
	CO4	Perform various tests to determine whether a given series is convergent, absolutely convergent or conditionally convergent
	CO5	Determine the Taylor and Fourier series expansion of functions and learn their applications.
PHT 100 ENGINEERING PHYSICS	CO1	Compute the quantitative aspects of waves and oscillations in engineering systems.
	CO2	Apply the interaction of light with matter through interference, diffraction and identify these phenomena in different natural optical processes and optical instruments.
	CO3	Analyze the behaviour of matter in the atomic and subatomic level through the principles of quantum mechanics to perceive the microscopic processes in electronic devices.
	CO4	Classify the properties of magnetic materials and apply vector calculus to static magnetic fields and use Maxwell's equations to diverse engineering problems
	CO5	Analyze the principles behind various superconducting applications, explain the working of solid state lighting devices and fibre optic communication system
EST 100 ENGINEERING MECHANICS	CO1	Recall principles and theorems related to rigid body mechanics
	CO2	Identify and describe the components of system of forces acting on the rigid body
	CO3	Apply the conditions of equilibrium to various practical problems involving different force system.
	CO4	Choose appropriate theorems, principles or formulae to solve problems of mechanics.


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	CO5	Solve problems involving rigid bodies, applying the properties of distributed areas and masses
EST 120 BASICS OF CIVIL AND MECHANICAL ENGINEERING	CO1	Recall the role of civil engineer in society and to relate the various disciplines of Civil Engineering.
	CO2	Explain different types of buildings, building components, building materials and building construction
	CO3	Describe the importance, objectives and principles of surveying.
	CO4	Summarise the basic infrastructure services MEP, HVAC, elevators, escalators and ramps
	CO5	Discuss the Materials, energy systems, water management and environment for green buildings
HUN 101 LIFE SKILL	CO1	Define and Identify different life skills required in personal and professional life
	CO2	Develop an awareness of the self and apply well-defined techniques to cope with emotions and stress.
	CO3	Explain the basic mechanics of effective communication and demonstrate these through presentations.
	CO4	Take part in group discussions
	CO5	Use appropriate thinking and problem solving techniques to solve new problems
	CO6	Understand the basics of teamwork and leadership

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PHL120 ENGINEERING PHYSICS LAB	CO1	Develop analytical/experimental skills and impart prerequisite hands on experience for engineering laboratories
	CO2	Understand the need for precise measurement practices for data recording
	CO3	Understand the principle, concept, working and applications of relevant technologies and comparison of results with theoretical calculations
	CO4	Analyze the techniques and skills associated with modern scientific tools such as lasers and fiber optics
	CO5	Develop basic communication skills through working in groups in performing the laboratory experiments and by interpreting the results
ESL 120 CIVIL AND MECHANICAL WORKSHOP	CO1	Name different devices and tools used for civil engineering measurements
	CO2	Explain the use of various tools and devices for various field measurements
	CO3	Demonstrate the steps involved in basic civil engineering activities like plot measurement, setting out operation, evaluating the natural profile of land, plumbing and undertaking simple construction work.
	CO4	Choose materials and methods required for basic civil engineering activities like field measurements, masonry work and plumbing.
	CO5	Compare different techniques and devices used in civil engineering measurements
	CO6	Identify Basic Mechanical workshop operations in accordance with the material and objects
	CO7	Apply appropriate Tools and Instruments with respect to the mechanical workshop trades
	CO8	Apply appropriate safety measures with respect to the mechanical workshop trades

Semester II		
Course Code & Course Name	CO No	CO Description
MAT 102 VECTOR CALCULUS, DIFFERENTIAL EQUATIONS AND TRANSFORMS	CO1	Apply the concept of vector functions and learn to work with conservative vector field
	CO2	Apply computing integrals of scalar and vector field over surfaces in three-dimensional space.



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	CO3	Solve homogeneous and non-homogeneous linear differential equation with constant coefficients
	CO4	Apply Laplace transforms to solve physical problems arising in engineering
	CO5	Apply Fourier transforms to solve physical problems arising in engineering
CYT 100 ENGINEERING CHEMISTRY	CO1	Apply the basic concepts of electrochemistry and corrosion to explore its possible applications in various engineering fields.
	CO2	Understand various spectroscopic techniques like UV-visible, IR, NMR and its applications.
	CO3	Apply the knowledge of analytical method for characterizing a chemical mixture or a compound. Understand the basic concept of SEM for surface characterisation of nanomaterials.
	CO4	Learn about the basics of stereochemistry and its application. Apply the knowledge of conducting polymers and advanced polymers in engineering
	CO5	Study various types of water treatment methods to develop skills for treating wastewater.
EST 110 ENGINEERING GRAPHICS	CO1	Draw the projection of points and lines located in different quadrants
	CO2	Prepare multiview orthographic projections of objects by visualizing them in different positions
	CO3	Draw sectional views and develop surfaces of a given object
	CO4	Prepare pictorial drawings using the principles of isometric and perspective projections to visualize objects in three dimensions.
	CO5	Convert 3D views to orthographic views and vice versa
	CO6	Obtain multiview projections and solid models of objects using CAD
EST 130 BASICS OF ELECTRICAL AND ELECTRONICS ENGINEERING	CO1	Apply fundamental concepts and circuit laws to solve simple DC electric and magnetic circuits
	CO2	Develop and solve models of magnetic circuits
	CO3	Apply the fundamental laws of electrical engineering to solve simple ac circuits in steady state.
	CO4	Describe working of a voltage amplifier
	CO5	Outline the principle of an electronic instrumentation system



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	CO6	Explain the principle of radio and cellular communication
EST 102 PROGRAMMING IN C	CO1	Analyze a computational problem and develop an algorithm/flowchart to find its solution
	CO2	Develop readable C programs with branching and looping statements which uses arithmetic, logical, relational or bitwise operations.
	CO3	Write readable C programs with arrays, structure or union for storing the data to be processed.
	CO4	Divide a given computational problem into a number of modules and develop a readable multi-function C program by using recursion if required, to find the solution to the computational problem.
	CO5	Write readable C programs which use pointers for array processing and parameter passing.
	CO6	Develop readable C programs with files for reading input and storing output.
HUN 102 PROFESSIONAL COMMUNICATION	CO1	Develop vocabulary and language skills relevant to engineering as a profession
	CO2	Analyze, interpret and effectively summarize a variety of textual content
	CO3	Create effective technical presentations
	CO4	Discuss a given technical/non-technical topic in a group setting and arrive at generalizations/consensus.
	CO5	Identify drawbacks in listening patterns and apply listening techniques for specific needs.
	CO6	Create professional and technical documents that are clear and adhering to all the necessary conventions.
CYL 120 ENGINEERING CHEMISTRY LAB	CO1	Understand and practice different techniques of quantitative chemical analysis to generate experimental skills and apply these skills to various analyses.
	CO2	Develop skills relevant to synthesize organic polymers and acquire the practical skill to use TLC for the identification of drugs
	CO3	Develop the ability to understand and explain the use of modern spectroscopic techniques for analysing and interpreting the IR spectra and NMR spectra of some organic compounds.
	CO4	Acquire the ability to understand, explain and use instrumental techniques for chemical analysis.
	CO5	Learn to design and carry out scientific experiments as well as accurately record and analyze the results of such experiments.
	CO6	Function as a member of a team, communicate effectively and engage in further learning. Also understand how chemistry

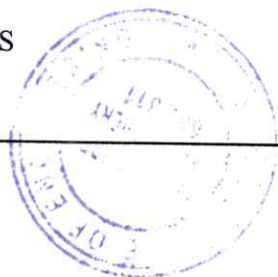
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ESL 130 ELECTRICAL AND ELECTRONICS WORKSHOP		addresses social, economical and environmental problems and why it is an integral part of curriculum
	CO1	Demonstrate safety measures against electric shocks.
	CO2	Identify the tools used for electrical wiring, electrical accessories, wires, cables, batteries and standard symbols.
	CO3	Develop the connection diagram, identify the suitable accessories and materials necessary for wiring simple lighting circuits for domestic buildings.
	CO4	Identify and test various electronic components
	CO5	Draw circuit schematics with EDA tools
	CO6	Assemble and test electronic circuits on boards
	CO7	Work in a team with good interpersonal skills

Semester III		
Course Code & Course Name	CO No	CO Description
MAT 201 PARTIAL DIFFERENTIAL EQUATIONS AND COMPLEX ANALYSIS	CO1	Understand the concept and the solution of partial differential equation.
	CO2	Analyse and solve one dimensional wave equation and heat equation
	CO3	Understand complex functions, its continuity differentiability with the use of Cauchy Riemann equations
	CO4	Evaluate complex integrals using Cauchy's integral theorem and Cauchy's integral formula, understand the series expansion of analytic function
	CO5	Understand the series expansion of complex function about a singularity and Apply
EET201 CIRCUITS AND NETWORKS	CO1	Apply circuit theorems to simplify and solve complex DC and AC electric networks
	CO2	Analyse dynamic DC and AC circuits and develop the complete response to excitation
	CO3	Solve dynamic circuits by applying transformation to s-domain
	CO4	Analyse three phase networks in star and delta configuration

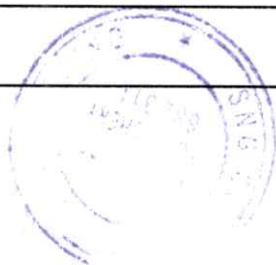


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	CO5	Solve series/parallel resonant circuits
	CO6	Develop the representation of two port networks using network parameters and analysis
EET203 MEASUREMENTS AND INSTRUMENTATION	CO1	Identify and analyse the factors affecting performance of measuring system
	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
MCN 201 SUSTAINABLE ENGINEERING	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
HUT 200 PROFESSIONAL ETHICS	CO1	Understand the core values that shape the ethical behaviour of a professional.
	CO2	Adopt a good character and follow an ethical life.
	CO3	Explain the role and responsibility in technological development by keeping personal ethics and legal ethics.
	CO4	Solve moral and ethical problems through exploration and assessment by established experiments.
	CO5	Apply the knowledge of human values and social values to contemporary ethical values and global issues.
EET 205 ANALOG ELECTRONICS	CO1	Design biasing scheme for transistor circuits.



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	CO2	Model BJT and FET amplifier circuits
	CO3	Identify a power amplifier with appropriate specifications for electronic circuit applications.
	CO4	Describe the operation of oscillator circuits using BJT
	CO5	Explain the basic concepts of Operational amplifier(OPAMP)
	CO6	Design and develop various OPAMP application circuits.
EEL201 CIRCUITS AND MEASUREMENTS LAB	CO1	Analyse voltage current relations of RLC circuits
	CO2	Verify DC network theorems by setting up various electric circuits
	CO3	Measure power in a single and three phase circuits by various methods
	CO4	Calibrate various meters used in electrical systems
	CO5	Determine magnetic characteristics of different electrical devices
	CO6	Analyse the characteristics of various types of transducer systems
	CO7	Determine electrical parameters using various bridges
	CO8	Analyse the performance of various electronic devices for an instrumentation systems and, to develop the team management and documentation capabilities.
EEL 203 ANALOG ELECTRONICS LAB	CO1	Use the various electronic instruments and for conducting experiments.
	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

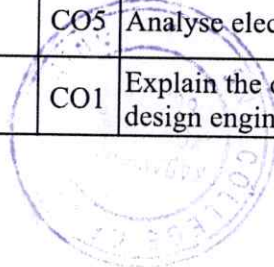
Semester IV

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Course Code & Course Name	CO No	CO Description
MAT 202 PROBABILITY, STATISTICS AND NUMERICAL METHODS	CO1	Understand the concept, properties and important models of discrete random variables and, using them, analyse suitable random phenomena.
	CO2	Understand the concept, properties and important models of continuous random variables and, using them, analyse suitable random phenomena.
	CO3	Perform statistical inferences concerning characteristics of a population based on attributes of samples drawn from the population
	CO4	Compute roots of equations, evaluate definite integrals and perform interpolation on given numerical data using standard numerical techniques
	CO5	Apply standard numerical techniques for solving systems of equations, fitting curves on given numerical data and solving ordinary differential equations.
EET202 DC MACHINES AND TRANSFORMERS	CO1	Acquire knowledge about constructional details of DC machines
	CO2	Describe the performance characteristics of DC generators
	CO3	Describe the principle of operation of DC motors and select appropriate motor types for different applications
	CO4	Acquire knowledge in testing of DC machines to assess its performance
	CO5	Describe the constructional details and modes of operation of single phase and three phase transformers
	CO6	Analyse the performance of transformers under various conditions
EET204 ELECTROMAGNETIC THEORY	CO1	Apply vector analysis and coordinate systems to solve static electric and magnetic field problems.
	CO2	Apply Gauss Law, Coulomb's law and Poisson's equation to determine electrostatic field parameters
	CO3	Determine magnetic fields from current distributions by applying Biot-Savart's law and Amperes Circuital law
	CO4	Apply Maxwell Equations for the solution of timevarying fields
	CO5	Analyse electromagnetic wave propagation in different media
EST 200 DESIGN AND ENGINEERING	CO1	Explain the different concepts and principles involved in design engineering.



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	CO2	Apply design thinking while learning and practicing engineering.
	CO3	Develop innovative, reliable, sustainable and economically viable designs incorporating knowledge in engineering.
MCN 202 CONSTITUTION OF INDIA	CO1	Explain the background of the present constitution of India and features.
	CO2	Utilize the fundamental rights and duties.
	CO3	Understand the working of the union executive, parliament and judiciary
	CO4	Understand the working of the state executive, legislature and judiciary
	CO5	Utilize the special provisions and statutory institutions
	CO6	Show national and patriotic spirit as responsible citizens of the country
EET206 DIGITAL ELECTRONICS	CO1	Identify various number systems, binary codes and formulate digital functions using Boolean algebra
	CO2	Design and implement combinational logic circuits
	CO3	Design and implement sequential logic circuits.
	CO4	Compare the operation of various analog to digital and digital to analog conversion circuits
	CO5	Explain the basic concepts of programmable logic devices and VHDL.
EET292 NETWORK ANALYSIS AND SYNTHESIS (HONOURS)	CO1	Apply network topology concepts in the formulation and solution of electric network problems
	CO2	Apply two-port network analysis in the design and analysis of filter and attenuator networks.
	CO3	Identify the properties and characteristics of network functions, and verify the mathematical constraints for their physical realisation.
	CO4	Synthesize passive one-port networks using standard Foster and Cauer forms
EEL 202 ELECTRICAL MACHINES LAB I	CO1	Analyse the performance of DC motors and DC generators by performing load test
	CO2	Sketch the Open Circuit Characteristics of a self excited DC shunt generator and check conditions of voltage build up by performing suitable experiment.



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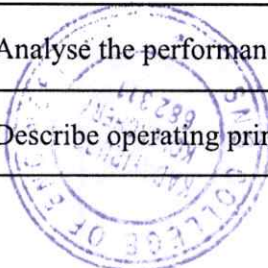
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	CO3	Develop equivalent circuit and predetermine their regulation and efficiency by performing OC & SC tests on transformer.
	CO4	Analyse the efficiency and regulation of the transformer by performing load test.
	CO5	Analyse the efficiency of a DC machine when working as motor and generator by conducting suitable test.
	CO6	Examine the efficiency by performing Sumpner's test on two similar transformers.
EEL204 DIGITAL ELECTRONICS LAB	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

Semester V

Course Code & Course Name	CO No	CO Description
EET301 POWER SYSTEMS I	CO1	Identify the power generating system appropriate for a given area
	CO2	Evaluate the electrical performance of any transmission line
	CO3	Compute various physical characteristics of underground and overhead transmission systems.
	CO4	Select appropriate switchgear for protection schemes
	CO5	Design a simple electrical distribution system as per the standards.
EET 307 SYNCHRONOUS AND INDUCTION MACHINES	CO1	Analyse the performance of different types of alternators
	CO2	Analyse the performance of a synchronous motor
	CO3	Analyse the performance of different types of induction motors
	CO4	Describe operating principle of induction motor as generators



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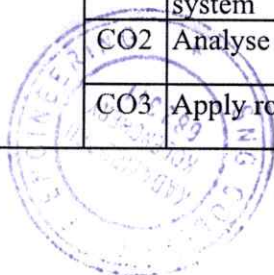
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	CO5	Explain the types of single phase induction motors and their working principle
HUT 310 MANAGEMENT FOR ENGINEERS	CO1	Explain the characteristics of management in the contemporary context (Cognitive Knowledge level)
	CO2	Describe the functions of management
	CO3	Demonstrate ability in decision making process and productivity analysis (Cognitive Knowledge level)
	CO4	Illustrate project management technique and develop a project schedule (Cognitive Knowledge level)
	CO5	Summarize the functional areas of management
	CO6	Comprehend the concept of entrepreneurship and create business plans (Cognitive Knowledge level)
EEL 333 ELECTRICAL MACHINES LAB II	CO1	Analyse the performance of single phase and three phase induction motors by conducting suitable test
	CO2	Analyse the performance of three phase synchronous machine from V and inverted V curve
	CO3	Analyse the performance of a three phase alternator by conducting suitable test
EEL331 MICROPROCESSORS AND MICROCONTROLLERS LAB	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

Semester VI

Course Code & Course Name	CO No	CO Description
EET 302 LINEAR CONTROL SYSTEMS	CO1	Describe the role of various control blocks and components in feedback system
	CO2	Analyse the time domain responses of the linear systems
	CO3	Apply root locus technique to assess the performance of linear systems

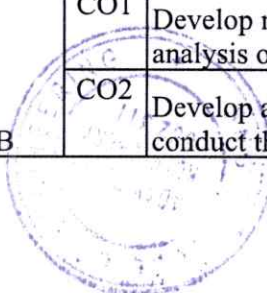


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	CO4	Analyse the stability of the given LTI systems
	CO5	Analyse the frequency domain response of the given LTI systems
	CO6	Design compensators using time domain and frequency domain technique
EET304 POWER SYSTEMS II	CO1	Apply the per unit scheme for any power system network and compute the fault levels
	CO2	Analyse the voltage profile of any given power system network using iterative methods
	CO3	Analyse the steady state and transient stability of power system networks
	CO4	Model the control scheme of power systems.
	CO5	Schedule optimal generation scheme.
EET306 POWER ELECTRONICS	CO1	Explain the operation of modern power semiconductor devices and its characteristics.
	CO2	Analyse the working of controlled rectifiers.
	CO3	Explain the working of AC voltage controllers, inverters and PWM techniques.
	CO4	Compare the performance of different dc-dc converters.
	CO5	Describe basic drive schemes for ac and dc motors.
EET322 RENEWABLE ENERGY SYSTEMS	CO1	Describe the environmental aspects of renewable energy resources
	CO2	Explain the operation of various renewable energy systems
	CO3	Design solar PV systems
	CO4	Explain different emerging energy conversion technologies and storage
EEL334 POWER ELECTRONICS LAB	CO1	Determine the characteristics of SCR and design triggering circuits for SCR based circuits.
	CO2	Design, set up and analyse single phase AC voltage controllers.
	CO3	Design, set up and test suitable gate drives for MOSFET/IGBT.
	CO4	Design, set up and test basic inverter topologies.
	CO5	Design and set up dc-dc converters.
	CO6	Develop simulation models of dc-dc converters, rectifiers and inverters using modern simulation tools.
EEL332 POWER SYSTEMS LAB	CO1	Develop mathematical models and conduct steady state and transient analysis of power system networks using standard software.
	CO2	Develop a frequency domain model of power system networks and conduct the stability analysis.

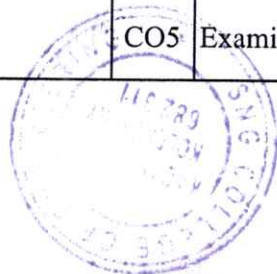


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	CO3	Conduct appropriate tests for any power system component as per standards.
	CO4	Conduct site inspection and evaluate performance ratio of solar power plant
EET308 COMPREHENSIVE COURSE WORK	CO1	Apply the knowledge of circuit theorems to solve the problems in electrical networks
	CO2	Evaluate the performance of DC machines and Transformers under different loading conditions
		Identify appropriate digital components to realise any combinational or sequential logic
	CO3	Apply the knowledge of Power generation, transmission and distribution to select appropriate components for power system operation.
		Apply appropriate mathematical concepts to analyse continuous time and discrete time signals and systems
CO4	Apply appropriate mathematical concepts to analyse continuous time and discrete time signals and systems	
Semester VII		
Course Code & Course Name	CO No	CO Description
EET 401 ADVANCED CONTROL SYSTEMS	CO2	Analyse the performance of linear and nonlinear systems using state variable approach
	CO3	Design state feedback controller for a given system
	CO4	Explain the characteristics of nonlinear systems
	CO5	Apply the tools like describing function approach or phase plane approach for assessing the performance of nonlinear systems
	CO6	Apply Lyapunov method for the stability analysis of physical systems
EET413 ELECTRIC DRIVES	CO1	Describe the transient and steady state aspects electric drives
	CO2	Apply the appropriate configuration of controlled rectifiers for the speed control of DC motors
	CO3	Analyse the operation of chopper-fed DC motor drive in various quadrants
	CO4	Illustrate the various speed control techniques of induction motors
	CO5	Examine the vector control of induction motor drives

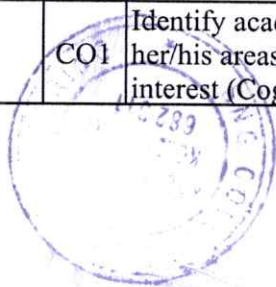


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	CO6	Distinguish different speed control methods of synchronous motor drives
EET435 RENEWABLE ENERGY SYSTEMS	CO1	Choose the appropriate energy source depending on the available resources.
	CO2	Explain the concepts of solar thermal and solar electric systems.
	CO3	Illustrate the operating principles of wind, and ocean energy conversion systems.
	CO4	Outline the features of biomass and small hydro energy resources
	CO5	Describe the concepts of fuel cell and hydrogen energy technologies
EED415 PROJECT PHASE I	CO1	Model and solve real world problems by applying knowledge across domains (Cognitive knowledge level: Apply).
	CO2	Develop products, processes or technologies for sustainable and socially relevant applications (Cognitive knowledge level: Apply)
	CO3	Function effectively as an individual and as a leader in diverse teams and to comprehend and execute designated tasks (Cognitive knowledge level: Apply).
	CO4	Plan and execute tasks utilizing available resources within timelines, following ethical and professional norms (Cognitive knowledge level: Apply).
	CO5	Identify technology/research gaps and propose innovative/creative solutions (Cognitive knowledge level: Analyze)
	CO6	Organize and communicate technical and scientific findings effectively in written and oral forms (Cognitive knowledge level: Apply).
EEL411 CONTROL SYSTEMS LAB	CO1	Demonstrate the knowledge of simulation tools for control system design.
	CO2	Develop the mathematical model of a given physical system by conducting appropriate experiments.
	CO3	Analyse the performance and stability of physical systems using classical and advanced control approaches
	CO4	Design controllers for physical systems to meet the desired specifications
EEQ413 SEMINAR	CO1	Identify academic documents from the literature which are related to her/his areas of interest (Cognitive knowledge level: Apply)



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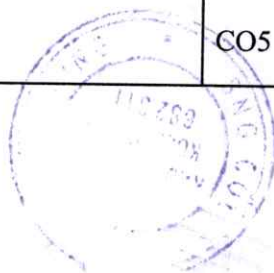
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	CO2	Read and apprehend an academic document from the literature which is related to her/ his areas of interest (Cognitive knowledge level: Analyze).
	CO3	Prepare a presentation about an academic document (Cognitive knowledge level: Create).
	CO4	Give a presentation about an academic document (Cognitive knowledge level: Apply)
	CO5	Prepare a technical report (Cognitive knowledge level: Create)

Semester VIII

Course Code & Course Name	CO No	CO Description
EET402 ELECTRICAL SYSTEM DESIGN AND ESTIMATION	CO 1	Explain the rules and regulations in the design of components for medium and high voltage installations.
	CO 2	Design lighting schemes for indoor and outdoor applications.
	CO 3	Design low/medium voltage domestic and industrial electrical installations.
	CO 4	Design, testing and commissioning of 11 kV transformer substation.
	CO 5	Design electrical installations in high rise buildings.
EET468 INDUSTRIAL INSTRUMENTATION AND AUTOMATION	CO1	Identify the sensors/transducers suitable for industrial applications.
	CO2	Design the signal conditioning circuits for industrial instrumentation and automation.
	CO3	Analyze the concepts of data transmission and virtual instrumentation related to automation
	CO4	Develop the logic for the process control applications using PLC programming
	CO5	Describe the fundamental concepts of DCS and SCADA systems

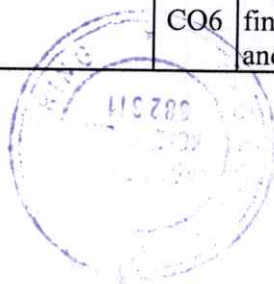


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EET424 ENERGY MANAGEMENT	CO1	Model and solve real world problems by applying knowledge across domains (Cognitive knowledge level: Apply).
	CO2	Develop products, processes or technologies for sustainable and socially relevant applications (Cognitive knowledge level: Apply)
	CO3	Function effectively as an individual and as a leader in diverse teams comprehend and execute designated tasks (Cognitive knowledge level: Apply).
	CO4	Plan and execute tasks utilizing available resources within timelines, following ethical and professional norms (Cognitive knowledge level: Apply).
EET426 SPECIAL ELECTRIC MACHINES	CO1	Analyse the performance of different types of permanent magnet motors
	CO2	Analyse the performance of a stepper motor
	CO3	Analyse the performance of different types of reluctance motors
	CO4	Explain the construction and principle of operation of servo motors, single phase motors and linear motors
	CO5	Analyse the performance of linear induction motors
EED416 PROJECT PHASE II	CO1	Model and solve real world problems by applying knowledge across domains (Cognitive knowledge level: Apply).
	CO2	Develop products, processes or technologies for sustainable and socially relevant applications (Cognitive knowledge level: Apply)
	CO3	Function effectively as an individual and as a leader in diverse teams and to comprehend and execute designated tasks (Cognitive knowledge level: Apply).
	CO4	Plan and execute tasks utilizing available resources within timelines, following ethical and professional norms (Cognitive knowledge level: Apply).
	CO5	Identify technology/research gaps and propose innovative/creative solutions (Cognitive knowledge level: Analyze)
	CO6	Organize and communicate technical and scientific findings effectively in written and oral forms (Cognitive knowledge level: Apply).



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