



# ESWAR COLLEGE OF ENGINEERING

(Approved by AICTE, & Affiliated to JNTUK, A.P.)

KESANUPALLI (V), NARASARAOPETA-522549, AP

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DEPT. OF EEE

COURSE OUTCOMES

A.Y:: 2023-24

II YEAR-I SEM

<b>COURSE NAME: MATHEMATICS– IV</b>	
<b>COURSE CODE: EE2101</b>	
<b>EE2101.1</b>	Apply Cauchy-Riemann equations to complex functions in order to determine whether a given continuous function is analytic (13).
<b>EE2101.2</b>	Find the differentiation and integration of complex functions used in engineering problems (15).
<b>EE2101.3</b>	Make use of the cauchy residue theorem to evaluate certain integrals (13).
<b>EE2101.4</b>	Apply discrete and continuous probability distributions (13).
<b>EE2101.5</b>	Design the components of a classical hypothesis test (16).
<b>EE2101.6</b>	Infer the statistical inferential methods based on small and large sampling tests (14).

<b>COURSE NAME: ELECTRONIC DEVICES AND CIRCUITS</b>	
<b>COURSE CODE: EE2102</b>	
<b>EE2102.1</b>	Understand the basic concepts of semiconductor physics.
<b>EE2102.2</b>	Understand the formation of p-n junction and how it can be used as a p-n junction as diode in different modes of operation.
<b>EE2102.3</b>	Know the construction, working principle of rectifiers with and without filters with relevant expressions and necessary comparisons.
<b>EE2102.4</b>	Understand the construction, principle of operation of transistors, bjt and fet with their v-i characteristics in different configurations.
<b>EE2102.5</b>	Know the need of transistor biasing, various biasing techniques for bjt and fet and stabilization concepts with necessary expressions.
<b>EE2102.6</b>	Perform the analysis of small signal low frequency transistor amplifier circuits using bjt and fet in different configurations.

<b>COURSE NAME: ELECTRICAL CIRCUIT ANALYSIS - II</b>	
<b>COURSE CODE: EE2103</b>	
<b>EE2103.1</b>	Understand the concepts of balanced and three-phase circuits.
<b>EE2103.2</b>	Know the transient behavior of electrical networks with dc excitations.
<b>EE2103.3</b>	Learn the transient behavior of electrical networks with ac excitations.
<b>EE2103.4</b>	Estimate various parameters of a two port network.
<b>EE2103.5</b>	Understand the significance of filters in electrical networks.
<b>EE2103.6</b>	Understand the concepts of unbalanced three-phase circuits.



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<b>COURSE NAME: DC MACHINES AND TRANSFORMERS</b>	
<b>COURSE CODE: EE2104</b>	
<b>EE2104.1</b>	Assimilate the concepts of electromechanical energy conversion.
<b>EE2104.2</b>	Mitigate the ill-effects of armature reaction and improve commutation in dc machines.
<b>EE2104.3</b>	Understand the torque production mechanism and control the speed of dc motors.
<b>EE2104.4</b>	Analyze the performance of single phase transformers.
<b>EE2104.5</b>	Predetermine regulation, losses and efficiency of single phase transformers.
<b>EE2104.6</b>	Parallel transformers, control voltages with tap changing methods and achieve three-phase to two-phase transformation.

<b>COURSE NAME: ELECTRO MAGNETIC FIELDS</b>	
<b>COURSE CODE: EE2105</b>	
<b>EE2105.1</b>	Compute electric fields and potentials using gauss law.
<b>EE2105.2</b>	Calculate the capacitance and energy stored in dielectrics.
<b>EE2105.3</b>	Calculate the magnetic field intensity due to current carrying conductor and understanding the application of ampere's law, maxwell's second and third law.
<b>EE2105.4</b>	Estimate self and mutual inductances and the energy stored in the magnetic field.
<b>EE2105.5</b>	Understand the concepts of displacement current and poynting theorem and poynting vector.
<b>EE2105.6</b>	Solve Laplace's or Poisson's equations for various electric charge distributions.

<b>COURSE NAME: ELECTRICAL CIRCUITS LAB</b>	
<b>COURSE CODE: EE21L1</b>	
<b>EE21L1.1</b>	Apply various theorems.
<b>EE21L1.2</b>	Determination of self and mutual inductances.
<b>EE21L1.3</b>	Two port parameters of a given electric circuits.
<b>EE21L1.4</b>	Draw locus diagrams.
<b>EE21L1.5</b>	Draw waveforms and phasor diagrams for leading networks.
<b>EE21L1.6</b>	Draw waveforms and phasor diagrams for lagging.



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<b>COURSE NAME: DC MACHINES AND TRANSFORMERS LAB</b>	
<b>COURSE CODE: EE21L2</b>	
<b>EE21L2.1</b>	Determine and predetermine the performance of dc machines.
<b>EE21L2.2</b>	Determine and predetermine the performance of transformers.
<b>EE21L2.3</b>	Control the speed of dc motor.
<b>EE21L2.4</b>	Obtain three phase to two phase transformation
<b>EE21L2.5</b>	To predetermine the efficiency and regulation of transformers and assess their performance.
<b>EE21L2.6</b>	To plot the magnetizing characteristics of dc shunt generator and understand the mechanism of self-excitation.

<b>COURSE NAME: ELECTRONIC DEVICES AND CIRCUITS LAB</b>	
<b>COURSE CODE: EE21L3</b>	
<b>EE21L3.1</b>	Analyze the characteristics of diodes, transistors and other devices.
<b>EE21L3.2</b>	Design and implement the rectifier circuits, scr and ujt in the hardware circuits.
<b>EE21L3.3</b>	Design and implement the scr.
<b>EE21L3.4</b>	Design and implement the ujt in the hardware.
<b>EE21L3.5</b>	Design the biasing and amplifiers of bjt and fet amplifiers.
<b>EE21L3.6</b>	Measure electrical quantities using cro in the experimentation.

<b>COURSE NAME: PYTHON PROGRAMMING</b>	
<b>COURSE CODE: EE2201</b>	
<b>EE2201.1</b>	Develop essential programming skills in computer programming concepts like data types.
<b>EE2201.2</b>	Apply the basics of programming in the python language.
<b>EE2201.3</b>	Solve coding tasks related conditional execution, loops.
<b>EE2201.4</b>	Solve coding tasks related to the fundamental notions used in object- oriented programming.
<b>EE2201.5</b>	Solve coding tasks related to the fundamental techniques used in object-oriented programming.
<b>EE2201.6</b>	Develop essential programming skills in computer programming concepts like containers.



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<b>COURSE NAME: DIGITAL ELECTRONICS</b>	
<b>COURSE CODE: EE2202</b>	
<b>EE2202.1</b>	Classify different number systems and apply to generate various codes.
<b>EE2202.2</b>	Use the concept of boolean algebra in minimization of switching functions.
<b>EE2202.3</b>	Design different types of combinational logic circuits.
<b>EE2202.4</b>	Apply knowledge of flip-flops in designing of registers and counters.
<b>EE2202.5</b>	The operation and design methodology for synchronous.
<b>EE2202.6</b>	Sequential circuits and algorithmic state machines.

<b>COURSE NAME: POWER SYSTEMS - I</b>	
<b>COURSE CODE:EE2203</b>	
<b>EE2203.1</b>	Identify the different components of thermal power plants.
<b>EE2203.2</b>	Identify the different components of nuclear power plants.
<b>EE2203.3</b>	Identify the different components of air insulated substations.
<b>EE2203.4</b>	Identify the different components of gas insulated substations.
<b>EE2203.5</b>	Identify single core and three core cables with different insulating materials.
<b>EE2203.6</b>	Analyse the different economic factors of power generation and tariffs.

<b>COURSE NAME: INDUCTION AND SYNCHRONOUS MACHINES</b>	
<b>COURSE CODE:EE2204</b>	
<b>EE2204.1</b>	Explain the operation and performance of three phase induction motor.
<b>EE2204.2</b>	Analyze the torque-speed relation, performance of induction motor and induction generator.
<b>EE2204.3</b>	Implement the starting of single phase induction motors.
<b>EE2204.4</b>	Develop winding design and predetermine the regulation of synchronous generators.
<b>EE2204.5</b>	Explain hunting phenomenon, implement methods of starting and correction of power factor.
<b>EE2204.6</b>	Explain hunting phenomenon, implement methods of starting and correction of power factor with synchronous motor.

<b>COURSE NAME: MANAGERIAL ECONOMICS &amp; FINANCIAL ANALYSIS</b>	
<b>COURSE CODE: EE2205</b>	
<b>EE2205.1</b>	The learner is equipped with the knowledge of estimating the demand and demand elasticities for a product.
<b>EE2205.2</b>	The knowledge of understanding of the input-output-cost relationships and estimation of the least cost combination of inputs.
<b>EE2205.3</b>	The pupil is also ready to understand the nature of different markets and price output determination under various market conditions.
<b>EE2205.4</b>	The pupil is also ready to understand the nature of different markets and price output determination under to have the knowledge of different business units.
<b>EE2205.5</b>	The learner is able to prepare financial statements and the usage of various accounting tools for analysis.
<b>EE2205.6</b>	The learner can able to evaluate various investment project proposals with the help of capital budgeting techniques for decision making.



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<b>COURSE NAME: PYTHON PROGRAMMING LAB</b>	
<b>COURSE CODE: EE22L1</b>	
<b>EE22L1.1</b>	Write, test and debug python programs
<b>EE22L1.2</b>	Use conditionals for python programs
<b>EE22L1.3</b>	Use loops for python programs
<b>EE22L1.4</b>	Use functions and represent compound data using lists.
<b>EE22L1.5</b>	Use functions and represent compound data using tuples.
<b>EE22L1.5</b>	Dictionaries use various applications using python.

<b>COURSE NAME: INDUCTION AND SYNCHRONOUS MACHINES LAB</b>	
<b>COURSE CODE: EE22L2</b>	
<b>E22L2.1</b>	Assess the performance of single phase and three phase induction motors.
<b>E22L2.2</b>	Control the speed of three phase induction motor.
<b>E22L2.3</b>	Predetermine the regulation of three-phase alternator by various methods.
<b>E22L2.4</b>	Find the $x_d/x_q$ ratio of alternator and assess the performance of three-phase synchronous motor.
<b>E22L2.5</b>	Determine the performance of single phase ac series motor.
<b>E22L2.6</b>	Control the speed of two phase induction motor

<b>COURSE NAME: DIGITAL ELECTRONICS LAB</b>	
<b>COURSE CODE: EE22L3</b>	
<b>EE22L3.1</b>	Learn the basics of gates, flip-flops and counters.
<b>EE22L3.2</b>	Construct basic combinational circuits and verify their functionalities.
<b>EE22L3.3</b>	Apply the design procedures to design basic sequential circuits.
<b>EE22L3.4</b>	To understand the basic digital circuits and to verify their operation.
<b>EE22L3.5</b>	Apply Boolean laws to simplify the digital circuits.
<b>EE22L3.6</b>	Apply the design

## III YEAR-1 SEM

<b>COURSE NAME: POWER SYSTEMS-II</b>	
<b>COURSE CODE: EE3101</b>	
<b>EE3101.1</b>	Calculate parameters of transmission lines for different circuit configurations.
<b>EE3101.2</b>	Determine the performance of short, medium and long transmission lines.
<b>EE3101.3</b>	Analyse the effect of travelling waves .
<b>EE3101.4</b>	Analyse the effect of transmission lines.
<b>EE3101.5</b>	Analyse the various voltage control methods and effect of corona.
<b>EE3101.6</b>	Calculate sag/tension of transmission lines and performance of line insulators.



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<b>COURSE NAME: POWER ELECTRONICS</b>	
<b>COURSE CODE: EE3102</b>	
<b>EE3102.1</b>	Illustrate the static and dynamic characteristics of scr, power-mosfet and power-igbt.
<b>EE3102.2</b>	Analyse the operation of phase-controlled rectifiers.
<b>EE3102.3</b>	Analyse the operation of three-phase full-wave converters.
<b>EE3102.4</b>	Analyse the operation of ac voltage controllers and cycloconverters.
<b>EE3102.5</b>	Examine the operation and design of different types of dc-dc converters.
<b>EE3102.6</b>	Analyse the operation of pwm inverters for voltage control and harmonic mitigation.

<b>COURSE NAME: CONTROL SYSTEMS</b>	
<b>COURSE CODE: EE3103</b>	
<b>EE3103.1</b>	Derive the transfer function of physical systems and determination of overall transfer function using block diagram algebra and signal flow graphs.
<b>EE3103.2</b>	Determine time response specifications of second order systems and absolute and relative stability of lti systems using root locus method.
<b>EE3103.3</b>	Determine time response specifications of second order systems and absolute and relative stability of lti systems using routh's stability criterion.
<b>EE3103.4</b>	Analyze the stability of lti systems using frequency response methods.
<b>EE3103.5</b>	Design lag, lead, lag-lead compensators to improve system performance using bode diagrams.
<b>EE3103.6</b>	Represent physical systems as state models and determine the response. Understand the concepts of controllability and observability.

<b>COURSE NAME: RENEWABLE ENERGY SOURCES</b>	
<b>COURSE CODE: EE3104</b>	
<b>EE3104.1</b>	Analyze solar radiation data, extra-terrestrial radiation, radiation on earth's surface and solar energy storage.
<b>EE3104.2</b>	Illustrate the components of wind energy systems.
<b>EE3104.3</b>	Illustrate the working of biomass, digesters.
<b>EE3104.4</b>	Illustrate the working of geothermal plants.
<b>EE3104.5</b>	Demonstrate the principle of energy production from otec, tidal and waves.
<b>EE3104.6</b>	Evaluate the concept and working of fuel cells & mhd power generation.



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<b>COURSE NAME: CONCEPTS OF CONTROL SYSTEMS (ELACTIVE)</b>	
<b>COURSE CODE: EE3105</b>	
<b>EE3105.1</b>	Draw impedance diagram for a power system network and calculate per unit quantities.
<b>EE3105.2</b>	Apply the load flow solution to a power system using different methods.
<b>EE3105.3</b>	Form zbus for a power system networks and analyse the effect of symmetrical faults.
<b>EE3105.4</b>	Find the sequence components.
<b>EE3105.5</b>	Power system components and analyse its effects of unsymmetrical faults.
<b>EE3105.6</b>	Analyse the stability concepts of a power system.

<b>COURSE NAME: CONTROL SYSTEMS LABORATORY</b>	
<b>COURSE CODE: EE31L1</b>	
<b>EE31L1.1</b>	Analyze the performance and working magnetic amplifier, d.c and a.c. servo motors and synchros.
<b>EE31L1.2</b>	Design P,Pi,Pd And Pid Controllers.
<b>EE31L1.3</b>	Design lag, lead and lag-lead compensators.
<b>EE31L1.4</b>	Evaluate temperature control of an oven using pid controller.
<b>EE31L1.5</b>	Determine the transfer function of d.c motor.
<b>EE31L1.6</b>	Analyze the performance of d.c and a.c servo motor.

<b>COURSE NAME: POWER ELECTRONICS LABORATORY</b>	
<b>COURSE CODE: EE31L2</b>	
<b>EE31L2.1</b>	Analyse characteristics of various power electronic devices and design firing circuits for scr.
<b>EE31L2.2</b>	Analyse the performance of single-phase dual, three-phase full-wave bridge converters and dual converter with both resistive and inductive loads.
<b>EE31L2.3</b>	Examine the operation of single-phase ac voltage regulator.
<b>EE31L2.4</b>	Cycloconverter with resistive and inductive loads.
<b>EE31L2.5</b>	Differentiate the working and control of buck converter and boost converter.
<b>EE31L2.6</b>	Differentiate the working & control of square wave inverter and pwm inverter.



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<b>COURSE NAME: SOFT SKILL COURSE EMPLOYABILITY</b>	
<b>COURSE CODE: EE31L3</b>	
<b>EE31L3.1</b>	Follow strategies in minimizing time consumption in problem solving Apply shortcut methods to solve problems.
<b>EE31L3.2</b>	Confidently solve any mathematical problems and utilize these mathematical skills both in their professional as well as personal life.
<b>EE31L3.3</b>	Analyze, summarize and present information in quantitative forms including graphs and formulas.
<b>EE31L3.4</b>	Analyze, summarize and present information in quantitative tables.
<b>EE31L3.5</b>	Understand the core competencies to succeed in professional and personal life.
<b>EE31L3.6</b>	<input type="checkbox"/> Learn and demonstrate a set of practical skills such as time management, self-management, handling conflicts, team leadership, etc.

## III YEAR-II SEM

<b>COURSE NAME: MICROPROCESSORS AND MICROCONTROLLERS</b>	
<b>COURSE CODE: EE3201</b>	
<b>EE3201.1</b>	Know the concepts of the microprocessor capability in general and explore the evaluation of microprocessors.
<b>EE3201.2</b>	Analyse the instruction sets - addressing modes - minimum and maximum modes operations of 8086 microprocessors.
<b>EE3201.3</b>	Analyse the microcontroller and interfacing capability.
<b>EE3201.4</b>	Describe the architecture and interfacing of 8051 controller.
<b>EE3201.5</b>	Know the concepts of pic micro controller and its programming.
<b>EE3201.6</b>	Analyse the addressing modes.

<b>COURSE NAME: ELECTRICAL MEASUREMENTS AND INSTRUMENTATION</b>	
<b>COURSE CODE: EE3202</b>	
<b>EE3202.1</b>	Know the construction and working of various types of analog instruments.
<b>EE3202.2</b>	Describe the construction and working of wattmeter and power factor meters.
<b>EE3202.3</b>	Know the construction various bridges for the measurement resistance - inductance and capacitance .
<b>EE3202.4</b>	Know the construction and working various bridges for the measurement resistance - inductance and capacitance .
<b>EE3202.5</b>	Know the operational concepts of various transducers.
<b>EE3202.6</b>	Know the construction and operation digital meters.





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<b>COURSE NAME: POWER SYSTEM ANALYSIS</b>	
<b>COURSE CODE: EE3203</b>	
<b>EE3203.1</b>	Draw impedance diagram for a power system network and calculate per unit quantities.
<b>EE3203.2</b>	Apply the load flow solution to a power system using different methods.
<b>EE3203.3</b>	Form zbus for a power system networks and analyse the effect of symmetrical faults.
<b>EE3203.4</b>	Find the sequence components.
<b>EE3203.5</b>	Power system components and analyse its effects of unsymmetrical faults.
<b>EE3203.6</b>	Analyse the stability concepts of a power system.

<b>COURSE NAME: SIGNALS AND SYSTEMS</b>	
<b>COURSE CODE: EE3204</b>	
<b>EE3204.1</b>	Apply the knowledge of various signals and operations.
<b>EE3204.2</b>	Analyze the spectral characteristics of periodic signals using fourier analysis.
<b>EE3204.3</b>	Classify the systems based on their properties.
<b>EE3204.4</b>	Determine the response of lsi system using convolution.
<b>EE3204.5</b>	Understand the process of sampling and the effects of under sampling.
<b>EE3204.6</b>	Apply Laplace and z-transforms to analyze signals and systems (continuous & discrete).

<b>COURSE NAME: SWITCHGEAR AND PROTECTION</b>	
<b>COURSE CODE: EE3205</b>	
<b>EE3205.1</b>	Illustrate the principles of arc interruption for application to high voltage circuit breakers of air - oil - vacuum - sf6 gas type.
<b>EE3205.2</b>	Analyse the working principle and operation of different types of electromagnetic protective relays.
<b>EE3205.3</b>	Acquire knowledge of protective schemes for generator and transformers for different fault conditions.
<b>EE3205.4</b>	Classify various types of protective schemes used for feeders.
<b>EE3205.5</b>	Bus bar protection and types of static relays.
<b>EE3205.6</b>	Analyse the operation of different types of over voltages protective schemes required for insulation co-ordination and types of neutral grounding.

<b>COURSE NAME: ELECTRICAL MEASUREMENTS AND INSTRUMENTATION LABORATORY</b>	
<b>COURSE CODE: EE32L1</b>	
<b>EE32L1.1</b>	Know about the phantom loading.
<b>EE32L1.2</b>	Learn the calibration process.
<b>EE32L1.3</b>	Measure the electrical parameters voltage - current - power - energy and electrical characteristics of resistance - inductance and capacitance.
<b>EE32L1.4</b>	Gain the skill knowledge of various bridges and their applications.
<b>EE32L1.5</b>	Learn the usage of ct's - pt's for measurement purpose.
<b>EE32L1.6</b>	Know the characteristics of transducers.



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<b>COURSE NAME: MICRO PROCESSORS AND MICRO CONTROLLERS LAB</b>	
<b>COURSE CODE: EE32L2</b>	
<b>EE32L2.1</b>	Write assembly language program using 8086 microprocessor based on arithmetic - logical - number systems and shift operations.
<b>EE32L2.2</b>	Write assembly language programs for numeric operations and array handling problems.
<b>EE32L2.3</b>	Write a assembly program on string operations.
<b>EE32L2.4</b>	Interface 8086 with i/o and other devices.
<b>EE32L2.5</b>	Do parallel and serial communication using 8051 & pic 18 micro controllers.
<b>EE32L2.6</b>	Program microprocessors and microcontrollers for real world applications.

<b>COURSE NAME: POWER SYSTEMS AND SIMULATION LAB</b>	
<b>COURSE CODE: EE32L3</b>	
<b>EE32L3.1</b>	Estimate the sequence impedances of 3-phase transformer and alternators.
<b>EE32L3.2</b>	Evaluate the performance of transmission lines.
<b>EE32L3.3</b>	Analyse and simulate power flow methods in power systems.
<b>EE32L3.4</b>	Analyse and simulate the performance of pi controller for load frequency control.
<b>EE32L3.5</b>	Analyse and simulate stability studies of power systems.
<b>EE32L3.6</b>	Simulate the performance of pi controller.

## IV YEAR-I SEM

<b>COURSE NAME: SWITCHGEAR AND PROTECTION</b>	
<b>COURSE CODE:EE4101</b>	
<b>EE4101.1</b>	Understand the principles of arc interruption for application to high voltage circuit breakers of air, oil, vacuum, sf6 gas type.
<b>EE4101.2</b>	Understand the working principle and operation of different types of electromagnetic protective relays.
<b>EE4101.3</b>	Students acquire knowledge of faults and protective schemes for high power generator and transformers.
<b>EE4101.4</b>	Improves the ability to understand various types of protective schemes used for feeders and bus bar protection.
<b>EE4101.5</b>	Understand different types of static relays and their applications.
<b>EE4101.6</b>	Understand different types of over voltages and protective schemes required for insulation co-ordination.



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<b>COURSE NAME: OOPS THROUGH JAVA</b>	
<b>COURSE CODE: EE4102</b>	
<b>EE4102.1</b>	Understand java programming concepts and utilize java graphical user interface in program writing.
<b>EE4102.2</b>	Write, compile, execute and troubleshoot java programming for networking concepts.
<b>EE4102.3</b>	Build java application for distributed environment.
<b>EE4102.4</b>	Design and develop multi-tier applications.
<b>EE4102.5</b>	Identify and analyze enterprise applications.
<b>EE4102.6</b>	Java concepts use in graphical user interface.

<b>COURSE NAME: RENEWABLE ENERGY SYSTEMS</b>	
<b>COURSE CODE: EE4103</b>	
<b>EE4103.1</b>	Analyze solar radiation data, extraterrestrial radiation, and radiation on earth's surface.
<b>EE4103.2</b>	Design solar thermal collectors, solar thermal plants.
<b>EE4103.3</b>	Design solar photo voltaic systems.
<b>EE4103.4</b>	Develop maximum power point techniques in solar pv and wind energy systems.
<b>EE4103.5</b>	Explain wind energy conversion systems, wind generators, power generation.
<b>EE4103.6</b>	Explain basic principle and working of hydro, tidal, biomass, fuel cell and geothermal systems.

<b>COURSE NAME: UTILIZATION OF ELECTRICAL ENERGY</b>	
<b>COURSE CODE: EE4104</b>	
<b>EE4104.1</b>	Know the various sources of electrical energy and its generation technologies for conventional and non-conventional energy sources.
<b>EE4104.2</b>	Know various types of illumination equipment.
<b>EE4104.3</b>	Illumination measurement and illumination techniques.
<b>EE4104.4</b>	Learn about various methods used for electrical energy based heating and welding applications.
<b>EE4104.5</b>	Know about the mechanisms, equipment and technology used in the electric traction.
<b>EE4104.6</b>	Understand the importance of electrical earthing, earthing equipment and electrical earthing measurement methods



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<b>COURSE NAME: HIGH VOLTAGE ENGINEERING</b>	
<b>COURSE CODE: EE4105</b>	
<b>EE4105.1</b>	Acquire knowledge of principle of operation, working of different electronic
<b>EE4105.2</b>	Select the instrument to be used based on the requirements.
<b>EE4105.3</b>	Understand and analyze different signal generators and analyzers.
<b>EE4105.4</b>	Understand the design of oscilloscopes for different applications.
<b>EE4105.5</b>	Design different transducers for measurement of different parameters
<b>EE4105.6</b>	Learn and understand the use of various measuring techniques for measurement of different physical parameters using different classes of transducers

<b>COURSE NAME: Linear &amp; Digital IC Applications Laboratory</b>	
<b>COURSE CODE: EE41L1</b>	
<b>EE41L1.1</b>	Understand the characteristics of ics-741, 555, 565, 566.
<b>EE41L1.2</b>	Apply the concepts of IC 741 for different applications.
<b>EE41L1.3</b>	Analyse the data connection circuits.
<b>EE41L1.4</b>	Develop the digital circuits.
<b>EE41L1.5</b>	Model the counters & Registers using IC's.
<b>EE41L1.6</b>	To model the digital circuits for different applications.

<b>COURSE NAME: Power Systems &amp; Simulation Laboratory</b>	
<b>COURSE CODE: EE41L2</b>	
<b>EE41L2.1</b>	Determine the parameters of various power system components which are frequently occur in power system studies.
<b>EE41L2.2</b>	He can execute energy management systems functions at load dispatch center.
<b>EE41L2.3</b>	To impart the practical knowledge of functioning of various power system components
<b>EE41L2.4</b>	Determination of various parameters .
<b>EE41L2.5</b>	LFC and Economic dispatch.
<b>EE41L2.6</b>	Simulation of load flows, transient stability.

## IV YEAR-II SEM

<b>COURSE NAME: EMBEDDED SYSTEM</b>	
<b>COURSE CODE: EE4201</b>	
<b>EE4201.1</b>	Understand the basic concepts of an embedded system.
<b>EE4201.2</b>	Able to know an embedded system design approach to perform a specific function.
<b>EE4201.3</b>	The hardware components required for an embedded system.
<b>EE4201.4</b>	The design approach of an embedded hardware.
<b>EE4201.5</b>	The various embedded firmware design approaches on embedded environment.
<b>EE4201.6</b>	Understand how to integrate hardware and firmware of an embedded system using real time operating system.



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<b>COURSE NAME: SPECIAL ELECTRICAL MACHINES</b>	
<b>COURSE CODE: EE4202</b>	
<b>EE4202.1</b>	distinguish between brush dc motor and brush less dc motor. <input type="checkbox"/>
<b>EE4202.2</b>	explain the performance and control of stepper motors, and their applications.
<b>EE4202.3</b>	explain theory of operation and control of switched motor. <input type="checkbox"/>
<b>EE4202.4</b>	explain theory of operation and control of reluctance motor.
<b>EE4202.5</b>	explain the theory of travelling magnetic field and applications of linear motors.
<b>EE4202.6</b>	understand the significance of electrical motors for traction drives.

<b>COURSE NAME: EMBEDDED SYSTEMS</b>	
<b>COURSE CODE: EE4203</b>	
<b>EE4203.1</b>	distinguish between brush dc motor and brush less dc motor. <input type="checkbox"/>
<b>EE4203.2</b>	explain the performance and control of stepper motors, and their applications.
<b>EE4203.3</b>	explain theory of operation and control of switched motor. <input type="checkbox"/>
<b>EE4203.4</b>	explain theory of operation and control of reluctance motor.
<b>EE4203.5</b>	explain the theory of travelling magnetic field and applications of linear motors.
<b>EE4203.6</b>	understand the significance of electrical motors for traction drives.