



# ESWAR COLLEGE OF ENGINEERING

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

KESANUPALLI (V), NARASARAOPETA-522549, AP

www.eswarcollegeofengg.org, email:eswarcollegeofengg@gmail.com

## DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING

### Course Outcomes

Year/Sem: II B.Tech I SEM

A.Y:2022-2023

<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.



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EE2205.5	The learner is able to prepare financial statements and the usage of various accounting tools for analysis.
EE2205.6	The learner can able to evaluate various investment project proposals with the help of capital budgeting techniques for decision making.

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

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

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

## III YEAR-1 SEM

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



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## COURSE NAME: POWER ELECTRONICS

### COURSE CODE: EE3102

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

## COURSE NAME: CONTROL SYSTEMS

### COURSE CODE: EE3103

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

## COURSE NAME: RENEWABLE ENERGY SOURCES

### COURSE CODE: EE3104

EE3104.1	Analyze solar radiation data, extra-terrestrial radiation, radiation on earth's surface and solar energy storage.
EE3104.2	Illustrate the components of wind energy systems.
EE3104.3	Illustrate the working of biomass, digesters.
EE3104.4	Illustrate the working of geothermal plants.
EE3104.5	Demonstrate the principle of energy production from otec, tidal and waves.
EE3104.6	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.



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<b>COURSE NAME: ELECTRICAL MEASUREMENTS AND INSTRUMENTATION LABORATORY</b>	
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<b>COURSE CODE: EE32L1</b>	
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<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.

<b>COURSE NAME: MICRO PROCESSORS AND MICRO CONTROLLERS LAB</b>	
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<b>COURSE CODE: EE32L2</b>	
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<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>	
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<b>COURSE CODE: EE32L3</b>	
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<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.



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## 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.

<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.



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<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

<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.



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<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.

<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. □
<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. □
<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.



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<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. □
<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. □
<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.