

**KARPAGA VINAYAGA COLLEGE OF ENGINEERING  
AND TECHNOLOGY**

**DEPARTMENT OF ELECTRICAL AND ELECTRONICS  
ENGINEERING**

**COURSE OUTCOMES**

**REGULATION 2013**

<b>Course Code &amp; Title : HS6151 Technical English-I</b>	
<b>Year / Semester : I Year/I Semester</b>	
1	Explain clearly, confidently, comprehensibly, and communicate with one or many listeners using appropriate communicative strategies.
2	Construct cohesively and coherently and flawlessly avoiding grammatical errors, using a wide vocabulary range, organizing their ideas logically on a topic.
3	Organize different genres of texts adopting various reading strategies.
4	Distinguish and comprehend different spoken discourses/excerpts in different accents.
5	Improve listening to different accents, speeches and presentations.
<b>Course Code &amp; Title : MA6151 Mathematics - I</b>	
<b>Year/ Semester : I Year/I Semester</b>	
1	Infer canonical form from quadratic form using the concepts of Eigen values and Eigen vectors.
2	Test the convergence of sequences and series.
3	Apply the techniques of differential calculus to find the evolute and envelope of curves.
4	Determine the maxima and minima of functions of two variables using partial derivatives.
5	Find the area enclosed by plane curves and volume of solids using multiple integrals.
<b>Course Code &amp; Title : PH6151 Engineering Physics - I</b>	
<b>Year/ Semester : I Year/I Semester</b>	
1	Describe the crystal structures and various crystal growth techniques.
2	Analyze the elastic nature of materials and thermal behaviour of materials.
3	Apply the knowledge of quantum mechanics and classical mechanics in addressing the problems related to science and technology.
4	Apply the knowledge about designing an auditorium with good acoustical properties and make use of Ultrasonics and its applications in various fields.
5	Illustrate the advantages of optical communication using LASER.
<b>Course Code &amp; Title : CY 6151 Engineering Chemistry -I</b>	
<b>Year/ Semester : I Year/I Semester</b>	
1	Describe the methods of polymerization, types, properties and uses of polymers.
2	Illustrate the concepts of basic thermodynamics and problem solving skills in various disciplines of Engineering.
3	Discuss the laws of photochemistry in recognizing the interaction of light with matter and its applications in luminescence and spectroscopy.
4	Review the use of phase rule in identifying its applications in metallurgy and alloys.
5	Summarize the basic knowledge in Nano-chemistry and distinguish the existing technology with nanotechnology.

<b>Course Code &amp; Title : GE6151 Computer Programming</b>	
<b>Year/ Semester : I Year/I Semester</b>	
1	Elaborate the organization of a digital computer and design the solution for simple computing problems using algorithm, flowchart and pseudo code
2	Apply different looping structures to solve simple scientific and statistical problems
.3	Devise solutions for simple problems using array and strings
4	Demonstrate the usage of Dynamic memory allocation and pointer variables
5	Illustrate the concepts of structures and unions with example programs
<b>Course Code &amp; Title : GE6152 Engineering Graphics</b>	
<b>Year/ Semester : I Year/I Semester</b>	
1	Sketch the conic sections, special curves, and draw orthographic views from pictorial views and models.
2	Apply the principles of orthographic projections of points in all quadrants, lines and planes in first quadrant.
3	Sketch the projections of simple solids like prisms, pyramids, cylinder and cone and obtain the traces of plane figures.
4	Practice the sectional views of solids like cube, prisms, pyramids, cylinders & cones and extend its lateral surfaces.
5	Sketch the perspective projection of simple solids, truncated prisms, pyramids, cone and cylinders and sketch the isometric projection of simple machine parts.
<b>Course Code &amp; Title : GE6161 Computer Programming Laboratory</b>	
<b>Year/ Semester : I Year/I Semester</b>	
1	Understand the usage of office automation tools.
2	Apply good programming design methods for program development.
3	Design and implement the C programs for simple applications.
4	Develop and implement the recursive programs.
5	Implement the c programs with the help of structures and unions.
<b>Course Code &amp; Title : GE6162 Engineering Practices Laboratory</b>	
<b>Year/ Semester : I Year/I Semester</b>	
1	Construct carpentry components and pipe connections including plumbing works.
2	Use welding equipment's to join the structures
3	Illustrate the basic machining operations
.4	Construct the models using sheet metal works
5	Describe centrifugal pump, Air conditioner, operations of smithy, foundry and fittings.
6	Construct the basic Electrical and Electronics circuits.
7	Examine the different types of electronic circuits and components.
8	Explain the electrical safety rules, grounding, general house wiring.
9	Perform soldering in various electronic circuits.
10	Illustrate the basic operation of domestic electrical appliances.
<b>Course Code &amp; Title : GE6163 Physics and Chemistry Laboratory - I</b>	

<b>Year/ Semester : I Year/I Semester</b>	
1	The hands on exercises undergone by the students will help them to apply physics principles of optics and thermal physics to evaluate engineering properties of materials.
2	Perform the quantitative chemical analysis of chloride and dissolved oxygen.
3	Determine the amount of acids by using the instruments of conductivity meter and pH meter.
<b>Course Code &amp; Title : HS 6251 Technical English-II</b>	
<b>Year/ Semester : I Year/ II Semester</b>	
1	Speak convincingly, express their opinions clearly, initiate a discussion, negotiate, argue using appropriate communicative strategies.
2	Write effectively and persuasively and produce different types of writing such as narration, description, exposition and argument as well as creative, critical, analytical and evaluative writing.
3	Read different genres of texts, infer implied meanings and critically analyse and evaluate them for ideas as well as for method of presentation.
4	Listen/view and comprehend different spoken excerpts critically and infer unspoken and implied meanings.
5	Students will become accomplished, active readers and will be able to write effectively for a variety of professional and social settings
<b>Course Code &amp; Title : MA6251 Mathematics - II</b>	
<b>Year/ Semester : I Year/ II Semester</b>	
1	Apply the knowledge of vector calculus in engineering disciplines.
2	Solve ordinary differential equations that model the engineering problems.
3	Find the Laplace transform of functions and solve the ordinary differential equations using Laplace transform.
4	Construct analytic functions and apply the knowledge of conformal mappings in engineering disciplines.
5	Evaluate contour integration and apply it in engineering problems.
<b>Course Code &amp; Title : PH6251 Engineering Physics - II</b>	
<b>Year/ Semester : I Year/ II Semester</b>	
1	Describe the conducting materials and their properties.
2	Analyze the semiconductors and able to differentiate various types of semiconductors.
3	Apply the knowledge of magnetic and superconducting materials for modern day to day applications.
4	Explain the properties and applications of dielectrics.
5	Apply the knowledge about the modern engineering materials for various applications.
<b>Course Code &amp; Title : CY6251 Engineering Chemistry - II</b>	
<b>Year/ Semester : I Year/ II Semester</b>	
1	Comprehend the importance of water technology in the purification of water and

	its domestic and industrial applications.
2	Explain the principles of electrochemistry, the factors affecting corrosion and The prevention of corrosion.
3	Understand the fundamentals of different alternative sources of energy and the generation processes.
4	Acquire the knowledge on different types of engineering materials and their applications.
5	Learn the know-how of industrial techniques of petroleum processing and the determination of calorific values and combustion parameters.
<b>Course Code &amp; Title : GE6251 Basic Civil and Mechanical Engineering</b>	
<b>Year/ Semester : I Year/ II Semester</b>	
1	To explain the usage of construction material and proper selection of construction materials.
2	To design building structures.
3	Identify the components used in power plants
4	Describe the working principles of Internal Combustion Engines
5	Explain the principle of Refrigeration and Air Conditioning System
<b>Course Code &amp; Title : EE6201 Circuit Theory</b>	
<b>Year/ Semester : I Year/ II Semester</b>	
1	Analyze circuits with ideal, independent, and controlled voltage and current sources.
2	Apply ohm's law, Kirchoff's laws, Network theorems to the analysis of AC and DC circuits.
.3	Solve first and second order AC and DC Circuits for Steady – State and transient response in the time domain and frequency domain.
4	Evaluate the response of the coupled circuits and two port networks
5	Estimate the power consumed by the three phase balanced and unbalanced circuits.
<b>Course Code &amp; Title : GE6262 Physics and Chemistry Laboratory - II</b>	
<b>Year/ Semester : I Year/ II Semester</b>	
1	Test materials by using their knowledge of applied physics principles in optics and properties of matter.
2	Determine the hardness, alkalinity and metal ion content in the water samples by volumetric titration.
3	Estimate the water quality parameters by potentiometer, conductometer and flame photometer.
<b>Course Code &amp; Title : GE6263 Computer Programming Laboratory</b>	
<b>Year/ Semester : I Year/ II Semester</b>	
1	Know the Structure of Unix Operating System and practice basic commands in Unix Shell
2	Devise solutions for simple problems using conditional statements and loops in Unix shell
3	Illustrate the concepts of Dynamic Memory Allocation, Pointers and File

	Allocation in C programming under Unix
<b>Course Code &amp; Title : EE6211 Electric Circuits Laboratory</b>	
<b>Year/ Semester : I Year/ II Semester</b>	
1	Solve the electrical circuit problems using circuit theorems and laws
.2	Verify the various circuit theorems experimentally as well as in simulation
3	Determine the frequency response and transients in passive circuits
.4	Simulate the resonance circuits for several applications such as designing of tuning circuit, signal processing and voltage magnification
.5	Estimate the solution of three phase circuits under both balanced and unbalanced conditions
<b>Course Code &amp; Title : MA6351 Transforms and Partial Differential Equations</b>	
<b>Year/ Semester : II Year/ III Semester</b>	
1	Solve the Partial Differential Equations.
.2	Determine the Fourier series expansion of functions and hence evaluate the value of infinite series.
3	Apply the method of separation of variables to solve one dimensional wave equation, one dimensional heat equation and two dimensional heat equation.
4	Find the Fourier transform of functions and also evaluate definite integrals using Fourier transform.
5	Calculate the Z-transform of discrete time systems and solve the difference equations using Z-transform.
<b>Course Code &amp; Title : EE6301 Digital Logic Circuits</b>	
<b>Year/ Semester : II Year/ III Semester</b>	
1.	Solve the problems in number systems and can examine the important characteristics of the digital logic family circuits.
2.	Develop combinational logic circuits with minimal hardware complexity.
3.	Construct various synchronous and asynchronous circuits with its application.
4.	Apply the concepts of asynchronous sequential circuits and PLAs.
5.	Perform a software platform for numerous digital circuits using VHDL.
<b>Course Code &amp; Title : EE6302 Electromagnetic Theory</b>	
<b>Year/ Semester : II Year/ III Semester</b>	
1.	Apply vector calculus to static electric-magnetic fields in different engineering situations.
2.	Explain electric potential problems in linear, isotropic media for simple geometrics.
3.	Determine voltage gradients for simple charge and current configurations and the force between charges and currents.
4.	Analyze Maxwell's equation in different forms (differential and integral) and apply them to diverse engineering problems.
5.	Examine the phenomena of wave propagation in free space and different media and its interfaces.
<b>Course Code &amp; Title : GE6351 Environmental Science and Engineering</b>	
<b>Year/ Semester : II Year/ III Semester</b>	

1.	Understand the importance of public awareness on environment and nature of biodiversity.
2.	Know about the various causes, effect and control measures of environmental pollution.
3.	Comprehend the human development that leads to environmental disasters, the value of natural resources and their conservation.
4.	Recognize the value of public participation in environmental protection, Environmental Management and Legislation Acts and sustainable development.
5.	Learn the problems related to population and their remedial measures.
<b>Course Code &amp; Title : EC6202 Electronic Devices and Circuits</b>	
<b>Year/ Semester : II Year/ III Semester</b>	
1.	Explain the structure, operation and characteristics of the basic PN junction diode and special diodes.
2.	Determine the characteristics and biasing circuits for transistor and thyristor devices.
3.	Develop BJT and FET small signal amplifier models.
4.	Construct applications using the basic electronic devices.
5.	Apply the concept of feedback to improve the stability of circuits.
<b>Course Code &amp; Title : EE6303 Linear Integrated Circuits and Applications</b>	
<b>Year/ Semester : II Year/ III Semester</b>	
1.	Discuss the fabrication process of different IC's.
2.	Determine the DC and AC characteristics of op-amps.
3.	Understand the concept of linear and nonlinear applications of op-amps.
4.	Examine the operation of special function IC's.
5.	Examine the operation of application IC's like voltage regulator and switching regulator.
<b>Course Code &amp; Title : EC6361 Electronics Laboratory</b>	
<b>Year/ Semester : II Year/ III Semester</b>	
1.	Explain the fundamentals of operation and characteristics of semiconductor devices.
2.	Calculate the basic parameters of semiconductor devices and their limiting factors.
3.	Demonstrate BJT amplifiers in various configurations including DC biasing techniques.
4.	Determine the frequency response characteristics of amplifiers.
5.	Construct basic electronic circuits, particularly with application to diodes, field-effect transistors and bipolar junction transistors.
<b>Course Code &amp; Title : EE6311 Linear and Digital Integrated Circuits Laboratory</b>	
<b>Year/ Semester : II Year/ III Semester</b>	
1.	Solve boolean functions and develop adder, subtractor circuits.
2.	Use various code converters to understand the importance of code conversion.
3.	Examine the operation of 4 - bit shift registers.

4.	Acquire knowledge on application of Op-Amp in various applications.
5	Construct counters using specific counter IC.
<b>Course Code &amp; Title : MA6459 Numerical Methods</b>	
<b>Year/ Semester : II Year/ IV Semester</b>	
1.	Solve the algebraic, transcendental and system of linear equations.
2.	Apply the Interpolation and approximations in various problems.
3.	Find the differentiations and integration using numerical tools.
4.	Determine the solution of initial value problems for ordinary differential equations.
5.	Determine the solution of boundary value problems in ordinary and partial differential equations
<b>Course Code &amp; Title : EE6401 Electrical Machines-I</b>	
<b>Year/ Semester : II Year/ IV Semester</b>	
1.	Apply techniques of magnetic-circuit analysis and introduce magnetic materials.
2.	Explore the operation and performance of single and three phase transformer.
3.	Demonstrate the concepts of electromechanical energy conversion and understand the concepts in rotating machines.
4.	Explain the working principles and performance of DC generator.
5.	Illustrate the working principles, starting, speed control and performance of DC motor.
<b>Course Code &amp; Title : CS6456 Object Oriented Programming</b>	
<b>Year/ Semester : II Year/ IV Semester</b>	
1.	Explain the difference between object oriented programming and procedural programming.
2.	Implement programs using C++ features such objects, operator overloading, dynamic memory allocation, and polymorphism.
3.	Develop applications using Object Oriented Programming concepts such as inheritance and Generic programming using C++.
4.	Implement simple Java programs using object-oriented concepts like classes, objects and inheritance.
5.	Apply exception handling and implement interfaces, packages, strings, I/O streams to various computing problems using Java.
<b>Course Code &amp; Title : EE6402 Transmission and Distribution</b>	
<b>Year/ Semester : II Year/ IV Semester</b>	
1.	Explain the basics of transmission and distribution in a power system and the operation of the different distribution schemes.
2.	Derive the expressions for the computation of transmission line parameters.
3.	Develop an equivalent circuit for the transmission lines based on distance and calculate the operating voltage for determining voltage regulation and efficiency.
4.	Calculate the voltage distribution in insulator strings and cables and methods to improve the same.
5.	Determine the mechanical design parameters of transmission lines.
<b>Course Code &amp; Title : EE6403 Discrete Time Systems and Signal Processing</b>	



<b>Year/ Semester : II Year/ IV Semester</b>	
1.	Analyze the properties of signals and systems.
2.	Analyze discrete time LTI systems using Z transform and DTFT.
3.	Apply the concepts of DFT and FFT to solve Electrical Engineering Problems.
4.	Design FIR and IIR digital filters.
5.	Describe the concepts of DSP Processors.
<b>Course Code &amp; Title : EE6404 Measurements and Instrumentation</b>	
<b>Year/ Semester : II Year/ IV Semester</b>	
1.	Determine various types of errors present in measurements.
2.	Explain the various types of electrical and electronics instruments.
3.	Compare a suitable measuring instrument used for measuring different electrical quantities.
4.	Explain the operating principles of different storage and display devices.
5.	Classify and select transducer for application in an electrical system.
<b>Course Code &amp; Title : CS6461 Object Oriented Programming Laboratory</b>	
<b>Year/ Semester : II Year/ IV Semester</b>	
1.	Implement the features of object oriented programming to solve real world problems.
2.	Design and implement the java programs for simple applications.
3.	Implement the Java programs with the help of interface and packages.
4.	Develop applications using object oriented programming concepts.
5.	Become familiar with the fundamentals and acquire programming skills in the Java language.
<b>Course Code &amp; Title : EE6411 Electrical Machines Laboratory-I</b>	
<b>Year/ Semester : II Year/ IV Semester</b>	
1.	Determine the performance of various D.C. Generators and understand the applications of it to power system
2.	Study the operation of various D.C. Generators
3.	Draw the performance characteristics of various D.C. Motors and understand the applications of it to power system
4.	Predetermine the performance of DC motor by conducting suitable tests
5.	Calculate the voltage regulation and predetermine the performance of the single phase and three phase transformer
<b>Course Code &amp; Title : EE6501 Power System Analysis</b>	
<b>Year/ Semester : III Year/ V Semester</b>	
1.	Classify the power system components such as generator, transformer and transmission lines and explain the concept of deregulated market.
2.	Derive steady state power flow using iterative techniques for planning, operation and control of a power system and use bus admittance matrix for power flow.
3.	Determine the short circuit capacity of any power system under symmetrical fault using bus impedance matrix and Thevenin's theorem concepts to calculate

	fault current.
4	Apply suitable protective scheme against unsymmetrical faults in power system and explain various sequence diagrams of a power system under unsymmetrical fault condition.
5	Explain the power system under transient condition and derive transient behaviour of the power system using numerical methods.
<b>Course Code &amp; Title : EE6502 Microprocessors and Microcontrollers</b>	
<b>Year/ Semester : III Year/ V Semester</b>	
1.	Explain the function of 8085 microprocessor and memory organization with timing diagram
2.	Write a program using 8085 microprocessor instructions.
3.	Elaborate the operation of 8051 microcontroller architecture.
4.	Describe the commonly used peripherals and interfacing.
5.	Develop an applications using 8051 microcontroller.
<b>Course Code &amp; Title : ME6701 Power Plant Engineering</b>	
<b>Year/ Semester : III Year/ V Semester</b>	
1.	Describe the various systems of coal based thermal power plant.
2.	Explain the various cycles and systems in diesel, gas and combined cycle power plant.
3.	Discuss the working of nuclear reactors in nuclear power plant.
4.	Explain the principle/construction and working of hydroelectric and various non-conventional power plants.
5.	Examine energy, economic and environmental issues of power plant.
<b>Course Code &amp; Title : EE6503 Power Electronics</b>	
<b>Year/ Semester : III Year/ V Semester</b>	
1.	Explain the basic operation and the characteristics of various Power Electronics devices like SCR, TRIAC, DIAC, IGBT, GTO etc.
2.	Understand the designing concept in various applications related to rectifiers by using above devices.
3.	Classify the chopper circuits and explain their applications in various fields.
4.	Understand and analyze various inverter circuits and PWM techniques.
5.	Explore the single phase and three AC voltage-controllers and their applications.
<b>Course Code &amp; Title : EE6504 Electrical Machines -II</b>	
<b>Year/ Semester : III Year/ V Semester</b>	
1.	Explain the concept, principle of salient and non-salient pole synchronous generator and its characteristics by examine various test.
2.	Describe the concept, principle and performance of synchronous motor.
3.	Illustrate the construction, working principle and performance of three phase induction motor.
4.	Examine various types of starting and speed control methods of three phase induction motor.
5.	Analyze the principle and performance of single phase induction motors and special electrical machines.
<b>Course Code &amp; Title : IC6501 Control systems</b>	

<b>Year/ Semester : III Year/ V Semester</b>	
1.	Develop transfer function models of electrical systems and mechanical systems.
2.	Derive the time response of systems and analyse the behaviour of the system.
3.	Draw the frequency response of the system and describe the effect of compensation on frequency response.
4.	Apply the concepts of system stability to analyse performance of closed loop systems.
5.	Explain the basic concepts of state variable analysis of systems and evaluate the solution of state and output equation.
<b>Course Code &amp; Title : EE6511 Control and Instrumentation Laboratory</b>	
<b>Year/ Semester : III Year/ V Semester</b>	
1.	Apply basic Science, circuit theory, Electro-magnetic field theory, control theory concepts for engineering problems
2.	Acquire the basic knowledge about the measurements and compare the characteristics of measuring devices.
3.	Explore the working of signal conditioning circuits.
4.	Develop mathematical models of electrical systems.
5.	Choose controller parameters based on tuning methods.
<b>Course Code &amp; Title : EE6512 Electrical Machines Laboratory-II</b>	
<b>Year/ Semester : III Year/ V Semester</b>	
1.	Determine the regulation of a synchronous generator and explain the applications to power system.
2.	Draw the performance characteristics of synchronous motor and explain the applications to power system.
3.	Draw the performance characteristics of three phase squirrel cage and slip ring induction motor and understand the applications to power system.
4.	Calculate the efficiency and performance characteristics of single phase induction motor.
5.	Troubleshoot the operation of various Induction and synchronous machine.
<b>Course Code &amp; Title : GE 6674 Communication and Soft Skills – Laboratory</b>	
<b>Year/ Semester : III Year/ V Semester</b>	
1.	Identify and interpret visuals, communicate in formal and informal conversations, give presentations, and participate in GD.
2.	Explain reading comprehension passages of higher levels, draft Resume, cover letter, reports, emails, and write blogs.
3.	Differentiate between IELTS & TOEFL and take placement oriented verbal ability tests.
4.	Demonstrate appropriate verbal, non-verbal and paralinguistic skills while attending job interviews.
5.	Show leadership traits, team skills and essential soft skills and efficiency to excel as a professional.
<b>Course Code &amp; Title : EC6651 Communication Engineering</b>	
<b>Year/ Semester : III Year/ VI Semester</b>	

1.	Apply various analog communication techniques in all communication systems.
2.	Apply various digital communication techniques in all communication systems.
3.	Apply Source and Error control coding in both wired and wireless communication systems.
4.	Analyze the various multiple access techniques.
5.	Explain the basic concepts used in satellite and optical fiber communications.
<b>Course Code &amp; Title : EE6601 Solid State Drives</b>	
<b>Year/ Semester : III Year/ VI Semester</b>	
1.	Explain the basics of dynamics and steady state stability of electric drive of different load.
2.	Describe the operation of converter/chopper fed dc drive.
3.	Apply the control methods for the induction motor drives.
4.	Analyze the performance of synchronous motor drives.
5.	Design and apply the current and speed controllers for drives.
<b>Course Code &amp; Title : EE6602 Embedded Systems</b>	
<b>Year/ Semester : III Year/ VI Semester</b>	
1.	Explain the building blocks of embedded systems
2.	Analyse the various communications in processors and input/output interfacing
3.	Explain the embedded development strategies
4.	Apply the various scheduling techniques in Real Time Operating System
5.	Apply the concepts of embedded system in application developments within realistic constraints such as economic, environmental, social and ethical
<b>Course Code &amp; Title : EE6603 Power System operation and Control</b>	
<b>Year/ Semester : III Year/ VI Semester</b>	
1.	Demonstrate the basic concepts of power system operation and control and apply the concept of load forecasting to predict the future energy requirement.
2.	Construct the power-frequency controller to single area and two area systems.
3.	Employ the suitable control actions to maintain the voltage profile by controlling reactive power against various types of load.
4.	Schedule the generators in power system economically by means of unit commitment and economic dispatch solutions.
5.	Apply the concept of computer control of power system to improve the control of power system.
<b>Course Code &amp; Title : EE6604 Design of Electrical Machines</b>	
<b>Year/ Semester : III Year/ VI Semester</b>	
1.	Explain about basic design concepts and various rating of electrical machines.
2.	Describe the design of various components of D.C. electrical machines.
3.	Discuss the design of overall dimensions of the transformer.
4.	Design the stator and types of rotor of three phase induction motor.
5.	Analyze the constraints and design the vital parts of Synchronous machines.
<b>Course Code &amp; Title : EE6002 Power System Transients</b>	

<b>Year/ Semester : III Year/ VI Semester</b>	
1.	Explore the source and effects of power system transients
2.	Explain the generation of switching transients and effects
3.	Explore the mechanism of lightning transients and lightning protection methods
4.	Analyze the travelling wave concepts
5.	Apply the travelling waves in integrated system
<b>Course Code &amp; Title : EE6611 Power Electronics and Drives Laboratory</b>	
<b>Year/ Semester : III Year/ VI Semester</b>	
1.	Demonstrate the gate pulse generation using various configurations.
2.	Explain the characteristics of power electronic switching devices.
3.	Compare the different power converters and its applications.
4.	Interpret the performance of AC voltage controller.
5.	Simulate various power electronic converter circuits.
<b>Course Code &amp; Title : EE6612 Microprocessors and Microcontrollers Laboratory</b>	
<b>Year/ Semester : III Year/ VI Semester</b>	
1.	Apply the arithmetic operations, logic operations and sorting using 8085 microprocessor.
2.	Write a program for code conversion, arithmetic operation, finding the maximum and minimum numbers in a series
3.	Analyze the operations of peripheral interfacing with 8085 microprocessor.
4.	Apply the arithmetic, logic operations and branching operation using 8051 microcontroller.
5.	Write a program for peripheral interfacing with 8051 microcontroller.
<b>Course Code &amp; Title : EE6613 Presentation Skills and Technical Seminar</b>	
<b>Year/ Semester : III Year/ VI Semester</b>	
1.	Understand the significance of learning new topics in electrical engineering discipline.
2.	Prepare and present the report on technical advancements and developments in electrical engineering.
3.	Organize the presentation using the concepts of ordering and determining the central, main and supporting ideas.
4.	Communicate effectively and clearly in front of peers and faculty members.
5.	Perform well in the placement interviews with good communication skills.
<b>Course Code &amp; Title : EE6701 High Voltage Engineering</b>	
<b>Year/ Semester : IV Year/ VII Semester</b>	
1.	Investigate the source, effects and protection methods of over voltages in power System
2.	Explore the breakdown mechanism in different dielectrics
3.	Explain the different methods of high voltage and current generation
4.	Understand the various overvoltage measurement methods
5.	Apply the concepts of high voltage power apparatus testing procedures
<b>Course Code &amp; Title : EE6702 Protection and Switchgear</b>	

<b>Year/ Semester : IV Year/ VII Semester</b>	
1.	Analyze the knowledge on different protective schemes in power system.
2.	Explain various electromagnetic relays and its application.
3.	Classify the protection scheme for various faults in motor, generator, transformer, bus bar, transmission line.
4.	Examine various static relays and numerical relays and its application.
5.	Describe concepts and principle of various circuit breakers.
<b>Course Code &amp; Title : EE6703 Special Electrical Machines</b>	
<b>Year/ Semester : IV Year/ VII Semester</b>	
1.	Explain the variable reluctance principle, different types of rotor construction and performance of synchronous reluctance motors.
2.	Describe the different types of stepper motors, closed loop control and its applications.
3.	Illustrate the sensor less operation and performance of switched reluctance motors using mathematical model.
4.	Classify the various types of permanent magnet materials used for Brushless D.C. motors and explain its performance.
5.	Explain the working of ideal PMSM, its performance along with power controllers used for various applications.
<b>Course Code &amp; Title : MG6851 Principles of Management</b>	
<b>Year/ Semester : IV Year/ VII Semester</b>	
1.	Explain the evolution of management and the functions and roles of managers.
2.	Exercise the different types of planning process and tools used for planning
3.	Apply the concept of organization structures and the functions of human resource manager in a management system.
4.	Classify the different theories of motivation and leadership.
5.	Illustrate the fundamental elements of controlling
<b>Course Code &amp; Title : EE6004 Flexible AC Transmission Systems</b>	
<b>Year/ Semester : IV Year/ VII Semester</b>	
1.	Calculate the rating of the compensators using the concept of passive and active reactive power control techniques.
2.	Employ different Static VAR compensators for various applications
3.	Illustrate various modes in thyristor controlled series capacitors and determine the rating of compensators.
4.	Solve the reactive power problem by active compensators and design the suitable scheme for different applications
5.	Apply different techniques to co-ordinate multiple FACTS controllers and study the interaction between FACTS controllers.
<b>Course Code &amp; Title : EI6704/Biomedical Instrumentation</b>	
<b>Year/ Semester : IV Year/ VII Semester</b>	
1.	Ability to understand the systems and their applications
2.	Analyze Instrumentation systems

3	Understand the basic principles in imaging techniques
4	Understand the concept measurement of certain important electrical and non-electrical parameters
5	To assisting and therapeutic devices
<b>Course Code &amp; Title : GE6081/ Fundamentals of Nano Science</b>	
<b>Design Year/ Semester : IV Year/ VII Semester</b>	
1	Classify the science of nonmaterial
2	Apply and demonstrate the preparation of nonmaterial
3	Understand to develop knowledge in characteristic nonmaterial
4	Understand the preparation methods and its type
5	To apply the nonmaterial in various applications
<b>Course Code &amp; Title : EE6711 Power System Simulation Laboratory</b>	
<b>Year/ Semester : IV Year/ VII Semester</b>	
1.	Develop a suitable program for determining the transmission line parameters and its performance evaluation.
2.	Simulate the power system to obtain the power flow solution using numerical iterative methods.
3.	Perform fault analysis for a given power system under symmetrical and unsymmetrical fault.
4.	Analyze the stability of the power system by simulation using appropriate techniques
5.	Develop a suitable program to solve economic dispatch problem and load frequency dynamics of interconnected power system.
<b>Course Code &amp; Title : EE6712 Comprehension</b>	
<b>Year/ Semester : IV Year/ VII Semester</b>	
1.	Describe the basic concepts of electrical and electronics subjects.
2.	Solve objective type questions in the field of electrical and electronics engineering
3.	Review, prepare and present technological developments
4.	Analyse the modern trends in the field of electrical and electronics engineering.
5.	Answer effectively during technical interviews.
<b>Course Code &amp; Title : EE6801 Electric Energy Generation, Utilization and Conservation</b>	
<b>Year/ Semester : IV Year/ VIII Semester</b>	
1.	Illustrate the various concepts of electric drives and the mechanism of train movement in electric traction system.
2.	Apply the energy efficient concept in illumination and lighting schemes.
3.	Describe the concepts of electric heating and electric welding.
4.	Explain the principle of Solar Radiation and Solar Energy Collectors.
5.	Analyze the principles and utilization of wind energy.
<b>Course Code &amp; Title : EE6009 Power Electronics for Renewable Energy Systems</b>	
<b>Year/ Semester : IV Year/ VIII Semester</b>	

1.	Describe the environmental aspects of electrical energy generation and utilization.
2.	Classify the various electrical machines for renewable energy applications.
3.	Explain the different power converters namely DC to AC, AC to DC, DC to DC and AC to AC converters for renewable energy sources.
4.	Compare and analyze the various operating modes of wind electrical generators and solar energy systems.
5.	Analyze the different type of Hybrid renewable energy system.
<b>Course Code &amp; Title : GE6757 Total Quality Management</b>	
<b>Year/ Semester : IV Year/ VIII Semester</b>	
1.	Discuss the contributions of Quality Guru
2.	Explain the principles of TQM
3.	Apply the tools and techniques of quality management to manufacturing and service processes
4.	Describe TQM tools and techniques such as Control Charts, QFD and TPM.
5.	Discuss the elements of Quality system standards
<b>Course Code &amp; Title : EE6811 Project work</b>	
<b>Year/ Semester : IV Year/ VIII Semester</b>	
1.	The students will be able to apply the fundamental knowledge and skills, which are acquired within the technical area, to a given problem
2.	<ul style="list-style-type: none"> <li>The students will be able to identify and summarize an appropriate list of literature review, analyze previous researchers' work and relate them to the project</li> <li>Within given constraints, even with limited information, the students will be able to independently analyze and discuss complex inquiries/problems and handle larger problems on the advanced level within the technical area.</li> </ul>
3.	<ul style="list-style-type: none"> <li>The students will be able to design engineering solutions to complex problems in a systematic approach.</li> <li>The students will be able to identify and apply appropriate parameters, assumptions and design criteria in consideration of health and safety (example: the use of codes of practice), ethics, economics, environment, sustainability</li> </ul>
4.	The students will be able to apply research and conduct experiments, as well as to analyze and interpret data that yield the results and answer important



	applicable research questions.
5	The students will be able to utilize technology tools for communication, collaboration, information management, and decision support.
6	The students will be able to demonstrate the knowledge, skills and attitudes of a professional engineer.
7	The students will be able to interact with team members in a professional manner, respecting differences, to ensure a collaborative project environment.
8	The students will be able to demonstrate a strong working knowledge of ethics and professional responsibility.
9	The students will be able to document and present one's own work, for a given target group, with strict requirements on structure, format, and language usage.
10	The students will be able to present the project outlining the approach and expected results using good oral and written presentation skills.
11	The students will be able to demonstrate effective organizational leadership and change skills for managing projects and project teams.
12	The students will be able recognize the need for life-long learning by undergoing the project work.