

## **Electrical Engineering Department**

### **Course outcomes**

<b>DEPARTMENT OF ELECTRICAL ENGINEERING-SEMESTER III</b>	
<b>Name of Course: MATHEMATICS III</b>	
<b>Course code: BEELE301T</b>	
<b>Sr. No.</b>	<b>Course Outcomes (The Student would be able to)</b>
CO301T.1	<b>Explain</b> the concept of Laplace transform & can apply to solve D.E and integral equation.
CO301T.2	<b>Evaluate</b> Fourier series and Fourier transform of function in different interval.
CO301T.3	<b>Evaluate</b> extremal of functional using Euler's equation.
CO301T.4	<b>Identify</b> analytic function & can apply Cauchy integral formula or residue theorem to solve complex integral.
CO301T.5	<b>Solve</b> P.D.E and apply it for initial value problems and boundary value problems
CO301T.6	<b>Extend</b> the concept of matrices to eigen value & eigen vector and use it to solve various engineering problems.

<b>DEPARTMENT OF ELECTRICAL ENGINEERING-SEMESTER III</b>	
<b>Name of Course:NON-CONVENTIONAL ENERGY SOURCE</b>	
<b>Course code: BEELE302T</b>	
<b>Sr. No.</b>	<b>Course Outcomes(The Student would be able to)</b>
CO302T.1	<b>Understand</b> the fundamentals of solar radiation geometry & its measurement.
CO302T.2	<b>Understand</b> the principles of different solar energy collectors and energy storage.
CO302T.3	<b>Explain</b> various applications of solar energy.
CO302T.4	<b>Understand</b> the basic principle, components and classification of WECS.
CO302T.5	<b>Understand</b> the concept of electricity generation through OTEC, Tidal and wave.
CO302T.6	<b>Understand</b> the working of various non-conventional energy sources.

<b>DEPARTMENT OF ELECTRICAL ENGINEERING-SEMESTER III</b>	
<b>Name of Course:Electrical Measurement and Instrumentation</b>	
<b>Course code: BEELE303T</b>	
<b>Sr. No.</b>	<b>Course Outcomes(The Student would be able to)</b>
CO303T.1	<b>Measure</b> the resistances, inductance and capacitance using different bridges.
CO303T.2	<b>Explain</b> the different electrical instruments used for electrical measurement.
CO303T.3	<b>Measure</b> power and energy in polyphase circuit.
CO303T.4	<b>Explain</b> the details of CT, PT and errors.
CO303T.5	<b>Explain</b> static and dynamic characteristics of instrument and block diagram of data acquisition system.
CO303T.6	<b>Measure</b> force, torque, velocity, acceleration, temperature, pressure and flow using different instruments.

DEPARTMENT OF ELECTRICAL ENGINEERING-SEMESTER III	
Name of Course: Electrical Measurement And Instrumentation	
Course code: BEELE303P	
Sr. No.	Course Outcomes (The Student would be able to)
CO303P.1	Apply and deduce the principles of Electrical Measurements and Instrumentation Engineering through laboratory experimental work.
CO303P.2	Connect the circuit to perform experiments, measure, analyze the observed data to come to a conclusion.
CO303P.3	Organize reports based on performed experiments with effective demonstration of diagrams and characteristics/graphs.
CO303P.4	Measure resistance, inductance and capacitance using bridges
CO303P.5	Measure three phase power and energy
CO303P.6	Understand the working of LVDT

DEPARTMENT OF ELECTRICAL ENGINEERING-SEMESTER III	
Name of Course: Network Analysis	
Course code: BEELE304T	
Sr. No.	Course Outcomes (The Student would be able to)
CO304T.1	<b>Explain</b> the concept of Laplace transform & can apply to solve D.E and integral equation.
CO304T.2	<b>Evaluate</b> Fourier series and Fourier transform of function in different interval.
CO304T.3	<b>Evaluate</b> extremal of functional using Euler's equation.
CO304T.4	<b>Identify</b> analytic function & can apply Cauchy integral formula or residue theorem to solve complex integral.
CO304T.5	<b>Solve</b> P.D.E and apply it for initial value problems and boundary value problems
CO304T.6	<b>Extend</b> the concept of matrices to eigen value & eigen vector and use it to solve various engineering problem.

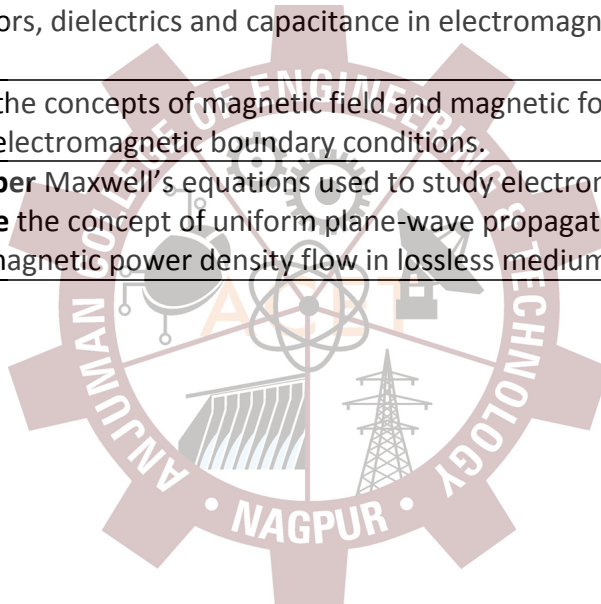
DEPARTMENT OF ELECTRICAL ENGINEERING-SEMESTER III	
Name of Course: Electronic device and circuit	
Course code: BEELE305T	
Sr. No.	Course Outcomes (The Student would be able to)
CO305T.1	<b>Define and explain</b> the principle and working of basic semiconductor devices, rectifier
CO305T.2	<b>Identify and examine</b> the transistor characteristics and biasing arrangement
CO305T.3	<b>Classify</b> various power amplifiers and define the positive and negative amplifier
CO305T.4	<b>Illustrate</b> the FET and MOSFET devices and also define and interpret various oscillators
CO305T.5	<b>Summarize</b> and relate the various differential circuits and their stages
CO305T.6	<b>Translate</b> the conversion of numbers from one code to other code and classify various logic gates and truth tables of digital circuits

<b>DEPARTMENT OF ELECTRICAL ENGINEERING-SEMESTER III</b>	
<b>Name of Course: Network Analysis(pract)</b>	
<b>Course code: BEELE304P</b>	
<b>Sr. No.</b>	<b>Course Outcomes(The Student would be able to)</b>
CO304P.1	Make the circuit connections required to perform the Experiment, take observations and analyze the data to make valid conclusions.
CO304P.2	Apply and Verify the Principals of Network Analysis through Laboratory Experimental Work
CO304P.3	Demonstrate & Verify different Network Theorems as applicable to Electric circuit (Exp. No. 1, 2, 3, 4, 5)
CO304P.4	Understand & Verify the relation between Line and Phase values of Voltage & Current for Three Phase Star & Delta Connected System (Exp. No. 6, 7)
CO304P.5	Compute Z-Parameter for Ladder Network (Exp. No. 8)
CO304P.6	Make the circuit connections required to perform the Experiment, take observations and analyze the data to make valid conclusions.

<b>DEPARTMENT OF ELECTRICAL ENGINEERING-SEMESTER III</b>	
<b>Name of Course:Electronic dvce and circuit(PRAC)</b>	
<b>Course code: BEELE305P</b>	
<b>Sr. No.</b>	<b>Course Outcomes(The Student would be able to)</b>
CO305P.1	<b>Apply</b> and Recall the principle of Electronics devices and circuits through laboratory experimental work
CO305P.2	<b>Connect</b> the circuit to perform experiments, measure, analyse the observed data to come to a conclusion
CO305P.3	<b>Organize</b> report based on performed experiments with effective demonstration of diagram and characteristics/graph
CO305P.4	<b>Evaluate</b> and <b>analyse</b> the characteristics of diodes and transistors
CO305P.5	<b>Classify</b> name and make use of various logic gates and boolean algebra

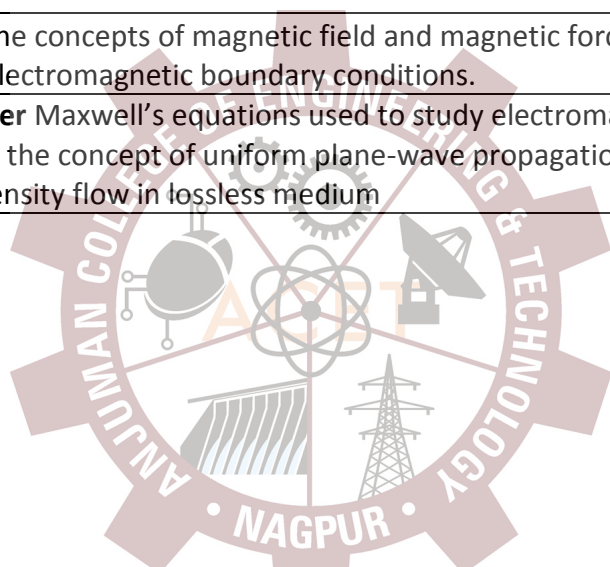
<b>DEPARTMENT OF ELECTRICAL ENGINEERING-SEMESTER-IV</b>	
<b>Name of Course:M4</b>	
<b>Course code: BEELE401T</b>	
<b>Sr. No.</b>	<b>Course Outcomes(The Student would be able to)</b>
CO401T.1	<b>Apply</b> the concept of laplace transform to find Transfer functionfor Mathematical modelling
CO401T.2	<b>Apply</b> the concept of Z-transform and use it to solve differential equation
CO401T.3	<b>Explain</b> the basic concept of fuzzy sets & fuzzy logic.
CO401T.4	<b>Evaluate</b> numerical solution of simultaneous and algebric equation
CO401T.5	<b>Evaluate</b> numerical solution of differential equation
CO401T.6	<b>Extend</b> the conceptof probability to find Distribution and Expectation

<b>Name of Course: ELEMENTS OF ELECTROMAGNETISM</b>	
<b>Course code: BEELE402T</b>	
<b>Sr. No.</b>	<b>Course Outcomes(The Student would be able to)</b>
CO402T.1	<b>Compare</b> and <b>Describe</b> the concept of Cartesian, cylindrical and spherical coordinate systems
CO402T.2	<b>Explain</b> the coulomb's law and <b>Apply</b> its concepts the analysis of electromagnetic & electrostatic system
CO402T.3	<b>Explain</b> the gauss's law and <b>Apply</b> its concepts the analysis of electromagnetic & electrostatic system
CO402T.4	<b>Utilize</b> the physical basis and <b>apply</b> the concepts for the functioning of conductors, dielectrics and capacitance in electromagnetic & electrostatic circuits
CO402T.5	<b>Explain</b> the concepts of magnetic field and magnetic forces and <b>Analyze</b> various electromagnetic boundary conditions.
CO402T.6	<b>Remember</b> Maxwell's equations used to study electromagnetic fields and <b>Illustrate</b> the concept of uniform plane-wave propagation and electromagnetic power density flow in lossless medium



<b>Name of Course: DLEC</b>	
<b>Course code: BEELE403T</b>	
<b>Sr. No.</b>	<b>Course Outcomes(The Student would be able to)</b>
CO403T.1	Explain the basic concepts of digital electronics.
CO403T.2	Identify, analyze and design combinational and logical circuits
CO403T.3	Design various synchronous and asynchronous sequential circuits
CO403T.4	Interpret the terminal characteristics of Op-Amps, analyze and design fundamental circuits based on Op-Amps
CO403T.5	Analyze feedback and its effect on the performance of Op-Amp.
CO403T.6	Analyze and design linear and non-linear applications of Op-Amps.

<b>Name of Course: ELEMENTS OF ELECTROMAGNETISM</b>	
<b>Course code: BEELE402T</b>	
<b>Sr. No.</b>	<b>Course Outcomes(The Student would be able to)</b>
CO402T.1	<b>Compare</b> and <b>Describe</b> the concept of Cartesian, cylindrical and spherical coordinate systems
CO402T.2	<b>Explain</b> the coulomb's law and <b>Apply</b> its concepts the analysis of electromagnetic & electrostatic system
CO402T.3	<b>Explain</b> the gauss's law and <b>Apply</b> its concepts the analysis of electromagnetic & electrostatic system
CO402T.4	<b>Utilize</b> the physical basis and <b>apply</b> the concepts for the functioning of conductors, dielectrics and capacitance in electromagnetic & electrostatic circuits
CO402T.5	<b>Explain</b> the concepts of magnetic field and magnetic forces and <b>Analyze</b> various electromagnetic boundary conditions.
CO402T.6	<b>Remember</b> Maxwell's equations used to study electromagnetic fields and <b>Illustrate</b> the concept of uniform plane-wave propagation and electromagnetic power density flow in lossless medium



<b>DEPARTMENT OF ELECTRICAL ENGINEERING-SEMESTER-IV</b>	
<b>Name of Course:Electrical Machines – I (practical)</b>	
<b>Course code: BEELE404P</b>	
<b>Sr. no</b>	<b>Course Outcomes(The Student would be able to)</b>
CO404P.1	Apply and Deduce the principles of Electrical Machines through laboratory experimental work
CO404P.2	Connect the circuit to perform experiments, measure, analyze the observed data & come to a conclusion
CO404P.3	Organize reports based on performed experiments with effective demonstration of diagrams and characteristics /graph
CO404P.4	Demonstrate the starting & speed control of various AC & DC motors
CO404P.5	Perform various tests, find efficiency & voltage regulation of electrical machines

DEPARTMENT OF ELECTRICAL ENGINEERING-SEMESTER-IV	
Name of Course:Computer programming	
Course code: BEELE405T	
Sr. No.	Course Outcomes(The Student would be able to)
CO405T.1	<b>Explain</b> structure of 'C' program, data types, storage class, variable, expression, operators & functions.
CO405T.2	<b>Classify</b> use of arrays & sorting techniques
CO405T.3	<b>Interpret</b> the use of Pointer, Structure & file handling
CO405T.4	<b>Explain</b> Basic Concepts of C++
CO405T.5	<b>Explain</b> introductory tools of MATLAB programming
CO405T.6	<b>Make</b> use of MATLAB functions for simple tasks on matrix operation, graphics, file handling.

DEPARTMENT OF ELECTRICAL ENGINEERING-SEMESTER-IV	
Name of Course:DIGITAL & LINEAR ELECTRONIC CIRCUIT Lab	
Course code: BEELE403P	
Sr. No.	Course Outcomes(The Student would be able to)
CO403P.1	<b>Apply</b> the design Procedures to design basic sequential circuits
CO403P.2	The ability to understand, analyze and design various combinational and sequential circuits
CO403P.3	Design op-amp circuits to perform arithmetic operations.
CO403P.4	Analyze and design linear and non-linear applications using op-amps.
CO403P.5	Analyze and design oscillators and filters using functional ICs

DEPARTMENT OF ELECTRICAL ENGINEERING-SEMESTER-IV	
Name of Course:Electrical Machines – I (practical)	
Course code: BEELE404P	
Sr. No.	Course Outcomes(The Student would be able to)
CO404P.1	Apply and Deduce the principles of Electrical Machines through laboratory experimental work
CO404P.2	Connect the circuit to perform experiments, measure, analyze the observed data & come to a conclusion
CO404P.3	Organize reports based on performed experiments with effective demonstration of diagrams and characteristics /graph
CO404P.4	Demonstrate the starting & speed control of various AC & DC motors
CO404P.5	Perform various tests, find efficiency & voltage regulation of electrical machines

<b>DEPARTMENT OF ELECTRICAL ENGINEERING-SEMESTER-IV</b>	
<b>Name of Course:Computer programming (practical)</b>	
<b>Course code: BEELE405P</b>	
<b>Sr.No.</b>	<b>Course Outcomes (The Student would be able to)</b>
CO405P.1	<b>Explain</b> structure of 'C' program and construct programs using variables of different data types
CO405P.2	<b>Construct</b> programs displaying the application of decision control structures
CO405P.3	<b>Construct</b> programs displaying the application of loop control structures
CO405P.4	<b>Explain</b> and show the working of sorting techniques through arrays
CO405P.5	<b>Construct</b> programs in MATLAB for conditional and iterative statements, matrix operations and graphic tools
CO405P.6	<b>Organize</b> and submit reports based on different executed programs

<b>DEPARTMENT OF ELECTRICAL ENGINEERING-SEMESTER-IV</b>	
<b>Name of Course:ENVIRONMENTAL STUDIES</b>	
<b>Course code: BEELE406T</b>	
<b>Sr.No.</b>	<b>Course Outcomes (The Student would be able to)</b>
CO406T.1	Explain and <b>demonstrate</b> the scope and importance of Environmental Studies and natural resources for sustainable development.
CO406T.2	Recognize structure and functions of an ecosystem and various energy cycles to protect the environment.
CO406T.3	Explain different levels and conservation of biodiversity in environment.
CO406T.4	Apply problem-solving skills to reduce different types of pollutions
CO406T.5	Elaborate about sustainable development, Environment Legislations and human health.

<b>DEPARTMENT OF ELECTRICAL ENGINEERING-SEMESTER-V</b>	
<b>Name of Course: Electrical POWER SYSTEM-I</b>	
<b>Course code: BEELE501T</b>	
<b>Sr.No.</b>	<b>Course Outcomes (The Student would be able to)</b>
CO501T.1	Demonstrate details about generation, transmission & distribution of electrical power
CO501T.2	Determine Per unit values of different electrical parameters
CO501T.3	Modeling and representation of the system components used in power system and Make use of concept of feeders, distributors, cables, insulator
CO501T.4	Analyze & design parameters of transmission line
CO501T.5	Illustrate the basic concept of load flow analysis
CO501T.6	Illustrate elementary concept of real & reactive power control , automatic voltage regulator

DEPARTMENT OF ELECTRICAL ENGINEERING-SEMESTER-V	
Name of Course: Utilisation Of Electrical Energy	
Course code: BEELE502T	
Sr.No.	Course Outcomes (The Student would be able to)
CO502T.1	<b>Explain</b> types & methods of electrical Heating & application of electric heating equipments
CO502T.2	<b>Explain</b> types of electric welding and their application.
CO502T.3	<b>Explain</b> terms used in illumination, different types of lighting schemes & energy saving in lighting systems.
CO502T.4	<b>Explain</b> terminologies, types & applications of refrigeration systems, different types of Air conditioning system
CO502T.5	<b>List</b> types of fans, blowers and their applications
CO502T.6	<b>Classify</b> types of compressors, DG Set and their applications

DEPARTMENT OF ELECTRICAL ENGINEERING-SEMESTER-V	
Name of Course: Electrical Machine Design	
Course code: BEELE503T	
Sr.No.	Course Outcomes (The Student would be able to)
CO503T.1	<b>Classify &amp; select</b> proper material for the design of an electrical machine
CO503T.2	<b>Design</b> overall transformer.
CO503T.3	<b>Estimate</b> the performance characteristics of Transformer with the constraints specified.
CO503T.4	<b>Design</b> Stator core & stator winding of an Induction motor.
CO503T.5	<b>Design</b> rotor core & rotor winding of an induction motor & calculate load current & other performance characteristics
CO503T.6	<b>Design</b> overall dimensions of synchronous machine & cooling of synchronous generator

DEPARTMENT OF ELECTRICAL ENGINEERING-SEMESTER-V	
Name of Course: Micro-processor	
Course code: BEELE504T	
Sr.No.	Course Outcomes (The Student would be able to)
CO504T.1	<b>Recall</b> VLSI circuit concept and organization of computer with microprocessor unit
CO504T.2	<b>Outline</b> the architecture description, software instructions & various addressing modes of 8085
CO504T.3	Make use of software instructions to develop simple stack related programs
CO504T.4	Understand interrupts-concepts and structure in 8085 and construct simple programs using advanced instructions
CO504T.5	<b>Explain</b> the methods of data transfer, IN/OUT instructions and develop simple hardware interface to 8085
CO504T.6	Understand the hardware considerations and general awareness about microcomputer system related products



DEPARTMENT OF ELECTRICAL ENGINEERING-SEMESTER-V	
Name of Course: Electrical Machines – II	
Course code: BEELE505T	
Sr.No.	Course Outcomes (The Student would be able to)
CO505T.1	<b>Illustrate</b> constructional features of synchronous machines, winding details, induce EMF
CO505T.2	<b>Develop</b> phasor diagram & <b>examine</b> steady state performance of synchronous machines, <b>determine</b> voltage regulation of an alternator
CO505T.3	<b>Interpret</b> parallel operation of alternators & <b>determine</b> various sequence reactances of synchronous machines
CO505T.4	<b>Analyze</b> the behavior of synchronous machine connected to infinite bus
CO505T.5	<b>Explain</b> transient behavior of synchronous machines & determination of time constant and equivalent circuit parameters under transient conditions
CO505T.6	<b>Explain</b> working principle of special machines

DEPARTMENT OF ELECTRICAL ENGINEERING-SEMESTER-V	
Name of Course: Electrical Machines – II	
Course code: BEELE505T	
Sr.No.	Course Outcomes (The Student would be able to)
CO505T.1	<b>Illustrate</b> constructional features of synchronous machines, winding details, induce EMF
CO505T.2	<b>Develop</b> phasor diagram & <b>examine</b> steady state performance of synchronous machines, <b>determine</b> voltage regulation of an alternator
CO505T.3	<b>Interpret</b> parallel operation of alternators & <b>determine</b> various sequence reactances of synchronous machines
CO505T.4	<b>Analyze</b> the behavior of synchronous machine connected to infinite bus
CO505T.5	<b>Explain</b> transient behavior of synchronous machines & determination of time constant and equivalent circuit parameters under transient conditions
CO505T.6	<b>Explain</b> working principle of special machines

DEPARTMENT OF ELECTRICAL ENGINEERING-SEMESTER-V	
Name of Course: Microprocessor & Interfacing	
Course code: BEELE504P	
Sr.No	Course Outcomes (The Student would be able to)
CO504P.1	Recall the fundamentals of microprocessor.
CO504P.2	Translate the knowledge of programming in to developing basic data transfer related programs.
CO504P.3	Translate the knowledge of programming into developing basic arithmetic operations related programs.
CO504P.4	Translate the knowledge of programming into developing basic array related programs.

<b>DEPARTMENT OF ELECTRICAL ENGINEERING-SEMESTER-V</b>	
<b>Name of Course: Electrical Machine-II(pract)</b>	
<b>Course code: BEELE505P</b>	
<b>Sr.No.</b>	<b>Course Outcomes (The Student would be able to)</b>
CO505P.1	Verify the theory and working of electrical machines through laboratory experimental work.
CO505P.2	Make circuit diagram connections to perform experiments, measure, analyze the observed data to come to a conclusion.
CO505P.3	Organize reports based on performed experiments with effective demonstration of diagrams and characteristics/graphs.
CO505P.4	Determine the different parameters of a three-phase alternator and its regulation
CO505P.5	Determine the different parameters of a three-phase synchronous motor as well as its 'V' and 'inverted V' curves
CO505P.6	Explain the working of a Universal motor

<b>DEPARTMENT OF ELECTRICAL ENGINEERING-SEMESTER-V</b>	
<b>Name of Course: EDS</b>	
<b>Course code: BEELE506P</b>	
<b>Sr.No.</b>	<b>Course Outcomes (The Student would be able to)</b>
CO506P.1	Make use of various electrical circuit and model by using MATLAB, PSCAD, and Visio.
CO506P.2	Relate with the latest trends in drawing, designing and analysis of electrical systems by using MATLAB, PSCAD
CO506P.3	Demonstrate the different aspects of the components of electrical systems by using MATLAB, PSCAD
CO506P.4	Develop single line diagram of Electrical layout in industry/office/house

<b>DEPARTMENT OF ELECTRICAL ENGINEERING-SEMESTER-V</b>	
<b>Name of Course: Electrical Engineering Workshop</b>	
<b>Course code: BEELE507P</b>	
<b>Sr. No.</b>	<b>Course Outcomes (The Student would be able to)</b>
CO507P.1	<b>Analyze</b> of load survey of electrical energy consumption and calculation of KVA rating of transformer.
CO507P.2	<b>Examine</b> and come to the valid conclusion for the experiment by proper connection of given circuit.
CO507P.3	<b>Demonstrate</b> of turbo trainer kit.
CO507P.4	<b>Summerise</b> and <b>explain</b> the prepared report based on substation or industrial visit.
CO507P.5	<b>Estimate</b> various designing parameters of three phase induction motor.

<b>DEPARTMENT OF ELECTRICAL ENGINEERING-SEMESTER-VI</b>	
<b>Name of Course: Power station practice</b>	
<b>Course code: BEELE601T</b>	
<b>Sr. No.</b>	<b>Course Outcomes (The Student would be able to)</b>
CO601T.1	Describe different sources of energy & various factors of electrical power station
CO601T.2	Demonstrate principle, construction, types, working of thermal power plant
CO601T.3	Explain complete information about working of Hydropower plant
CO601T.4	Get the Importance of Nuclear power plant and can Explain its working
CO601T.5	Evaluate the tariff for different customer
CO601T.6	Illustrate the basic concepts of co-generation ,captive power generation & sustainable development of energy

<b>DEPARTMENT OF ELECTRICAL ENGINEERING-SEMESTER-VI</b>	
<b>Name of Course: Engineering Economics &amp; Industrial Management</b>	
<b>Course code: BEELE602T</b>	
<b>Sr.No.</b>	<b>Course Outcomes (The Student would be able to)</b>
CO602T.1	Understand the law of demand and factors of production
CO602T.2	Students will be familiar with market competition and price determination
CO602T.3	Understand the functions of banks and taxes.
CO602T.4	Students will be aware of management skills at professional level.
CO602T.5	Students will get acquainted with knowledge of marketing strategies
CO602T.6	Students will understand balance sheet and ratio analysis.

<b>DEPARTMENT OF ELECTRICAL ENGINEERING-SEMESTER-VI</b>	
<b>Name of Course: Electrical Drives &amp; Their Control</b>	
<b>Course code: BEELE603T</b>	
<b>Sr.No.</b>	<b>Course Outcomes (The Student would be able to)</b>
CO603T.1	<b>Understand</b> the law of demand and factors of production
CO603T.2	Students will be familiar with market competition and price determination
CO603T.3	Understand the functions of banks and taxes.
CO603T.4	Students will be aware of management skills at professional level.
CO603T.5	Students will get acquainted with knowledge of marketing strategies
CO603T.6	Students will understand balance sheet and ratio analysis.

DEPARTMENT OF ELECTRICAL ENGINEERING-SEMESTER-VI	
Name of Course: Power Electronics	
Course code: BEELE604T	
Sr. No	Course Outcomes (The Student would be able to)
CO604T.1	<b>Explain</b> basic operation of silicon controlled rectifier (SCR), <b>analyze</b> characteristics & protection schemes of SCR
CO604T.2	<b>Analyze</b> characteristics & <b>explain</b> working of MOSFET, GTO, IGBT, TRIAC & UJT
CO604T.3	<b>Explain</b> and <b>analyze</b> single phase & three phase fully controlled AC to DC converter circuits, <b>evaluate their performance</b>
CO604T.4	<b>Understand</b> and <b>analyze</b> working of single phase & three phase half controlled AC to DC converter circuits
CO604T.5	<b>Examine</b> the working principle of chopper and series resonant inverter
CO604T.6	<b>Analyze</b> DC to AC inverter circuits , <b>understand</b> harmonic attenuation concepts used for inverters

DEPARTMENT OF ELECTRICAL ENGINEERING-SEMESTER-VI	
Name of Course: Control system-I	
Course code: BEELE605T	
Sr. No	Course Outcomes (The Student would be able to)
CO605T.1	<b>Demonstrate</b> an understanding of the fundamentals of (feedback) control system, explain mathematical modeling of the system.
CO605T.2	<b>Explain</b> the effect of feedback and illustrate the different control system components.
CO605T.3	<b>Explain &amp; analyze</b> the time response and time response specifications.
CO605T.4	<b>Analyze</b> the stability of a control system and <b>determine</b> the relative stability of a system through root locus technique
CO605T.5	<b>Evaluate</b> frequency response tools like Bode plot & Nyquist plot and evaluate the stability of a system using these tools.
CO605T.6	<b>Outline</b> the introductory concept of state variable approach.

DEPARTMENT OF ELECTRICAL ENGINEERING-SEMESTER-VI	
Name of Course: Functional English	
Course code: BEELE607T	
Sr. No.	Course Outcomes (The Student would be able to)
CO607T.1	Make use of functional grammar proficiently
CO607T.2	Interpret word building, technical jargons, Synonyms/Antonyms, types & techniques of Interview
CO607T.3	Construct business letters and make use of email etiquettes effectively
CO607T.4	Make use of analytical comprehension and draft technical documents effectively
CO607T.5	Utilize technical writing skills effectively

DEPARTMENT OF ELECTRICAL ENGINEERING-SEMESTER-VI	
Name of Course: Power Electronic Practical	
Course code: BEELE604P	
Sr. No	Course Outcomes (The Student would be able to)
CO604P.1	<b>Apply</b> and <b>deduce</b> the concepts of Power Electronics through laboratory experimental work.
CO604P.2	Connect the circuit to perform <b>experiments, measure, analyze</b> the observed data to come to a conclusion.
CO604P.3	<b>Organize</b> reports based on performed experiments with effective demonstration of diagrams and characteristics/graphs.
CO604P.4	<b>Estimate and Interpret</b> the V-I characteristics of various Power Electronic Devices
CO604P.5	<b>Examine and design</b> the working of various power electronic converter circuits

DEPARTMENT OF ELECTRICAL ENGINEERING-SEMESTER-VI	
Name of Course: Control system-I(pract)	
Course code: BEELE605P	
Sr. No	Course Outcomes (The Student would be able to)
CO605P.1	Apply and deduce the principles of control system engineering through laboratory experiment
CO605P.2	Connect the circuit, measure and analyse observed data and summarize
CO605P.3	Compose report based on performed experiments(journals) with effective demonstrate
CO605P.4	Evaluate Root Locus and bode plot by using MATLAB software
CO605P.5	Make use of Electrical equipment, evaluate their functioning and assess their performance

DEPARTMENT OF ELECTRICAL ENGINEERING-SEMESTER-VII	
Name of Course: Control System-II	
Course code: BEELE701T	
Sr. No	Course Outcomes
CO701T.1	<b>Illustrate</b> the need for compensation, <b>classify &amp; evaluate</b> various compensation techniques
CO701T.2	<b>Outline</b> the state variable approach, <b>analyze</b> STM & analyse state equation
CO701T.3	<b>Design &amp; develop</b> state variable feedback process and its effect on controllability & observability
CO701T.4	<b>Analyse, design</b> of optimal control with & without constraints
CO701T.5	<b>Describe &amp; analyse</b> common non-linearities and examine non-linear stability
CO701T.6	<b>Explain and develop</b> discrete time control system

DEPARTMENT OF ELECTRICAL ENGINEERING-SEMESTER-VII	
Name of Course: ELECTRICAL POWER SYSTEM-II	
Course code: BEELE702T	
Sr. No	Course Outcomes (The Student would be able to)
CO702T.1	<b>Apply</b> the knowledge of symmetrical components for analyzing unbalanced power system.
CO702T.2	<b>Analyze</b> and solve problems on symmetrical and unsymmetrical faults.
CO702T.3	<b>Analyze</b> power system stability to various systems.
CO702T.4	<b>Evaluate</b> economy of operation to minimize operating costs of power system.
CO702T.5	<b>Understand</b> different types of grounding and compensation.

DEPARTMENT OF ELECTRICAL ENGINEERING-SEMESTER-VII	
Name of Course: HIGH VOLTAGE ENGINEERING	
Course code: BEELE704T	
Sr. No	Course Outcomes (The Student would be able to)
CO704T.1	<b>Identify</b> the breakdown mechanism in different types of dielectrics
CO704T.2	<b>Explain</b> in detail about lightning and switching over-voltages, effects and its protection.
CO704T.3	<b>Illustrate</b> the concepts of travelling waves and insulation coordination
CO704T.4	<b>Analyze</b> different methods of generation of high voltage and high current in laboratory
CO704T.5	<b>Analyze</b> different methods of measurement of high voltage and high current in laboratory
CO704T.6	<b>Describe</b> the different methods of non-destructive & high voltage testing of electrical apparatus

DEPARTMENT OF ELECTRICAL ENGINEERING-SEMESTER-VII	
Name of Course: E.I.D.	
Course code: BEELE705T	
Sr. No	Course Outcomes (The Student would be able to)
CO705T.1	<b>Apply</b> the concept of load forecasting, solve problems based on regression analysis
CO705T.2	<b>Explain</b> construction, types and selection of PVC/ XLPE cables and overhead conductors.
CO705T.3	<b>Design</b> single line diagrams with specifications for distribution networks, motor and power control centers for industrial installations and design reactive power Compensation.
CO705T.4	<b>Develop</b> 11kV and 33 kV substations for utility and industrial installations and specify the ratings and specifications of apparatus used.
CO705T.5	<b>Illustrate</b> procedure for receipt, storage, testing and commissioning of transformers along with its accessories viz OTI, WTI, Silica Gel Breather, MOG, Buchholz relay etc.
CO705T.6	<b>Identify</b> the provisions for system and equipment earthings as per IS 3043.

<b>DEPARTMENT OF ELECTRICAL ENGINEERING-SEMESTER-VII</b>	
<b>Name of Course: High voltage Engg.(PRACT)</b>	
<b>Course code :- BEELE704P</b>	
<b>Sr. No</b>	<b>Course Outcomes (The Student would be able to)</b>
CO704P.1	Apply the concepts of High Voltage Engineering through laboratory experimental work
CO704P.2	Connect the circuit to perform experiments, measure, analyze the observed data to come to a conclusion.
CO704P.3	Organize reports based on performed experiments with effective presentation of diagrams and characteristics/graphs.
CO704P.4	Evaluate the performance of breakdown testing of various dielectrics, lightning arrestors
CO704P.5	Calibrate the breakdown voltage of air using sphere-gap assembly

<b>DEPARTMENT OF ELECTRICAL ENGINEERING-SEMESTER-VII</b>	
<b>Name of Course: Electrical installation and design(PRACT)</b>	
<b>Course code: BEELE705P</b>	
<b>Sr. No</b>	<b>Course Outcomes (The Student would be able to)</b>
CO705P.1	<b>Study and understand</b> the working of substation
CO705P.2	<b>Understand</b> various safety devices and earthing used in electrical system
CO705P.3	<b>Study</b> the maintenance and testing of transformer and induction motor
CO705P.4	<b>Organize</b> reports based on performed experiments with effective demonstration of diagram.
CO705P.5	<b>Study and understand</b> the wiring diagram of star-delta starter of three phase induction motor
CO705P.6	Simulation for 3-phase short circuit current in distribution system using Matlab software.

<b>DEPARTMENT OF ELECTRICAL ENGINEERING-SEMESTER-VII</b>	
<b>Name of Course: Project &amp; Seminar</b>	
<b>Course code :-BEELE706P</b>	
<b>Sr. No</b>	<b>Course Outcomes (The Student would be able to)</b>
CO706P.1	Undertake problem identification, formulation and solution
CO706P.2	Demonstrate a sound technical knowledge of their selected project topic.
CO706P.3	Analyze and assemble the basic information to find solution of a complex engineering problem by using suitable methodology/procedure.
CO706P.4	Communicate with engineers and the community at large in written and oral forms.
CO706P.5	Demonstrate the knowledge, skills and attitudes of a professional engineer.
CO706P.6	Document and report the project work carried out and proposed work in an appropriate format.

<b>DEPARTMENT OF ELECTRICAL ENGINEERING-SEMESTER-VIII</b>	
<b>Name of Course: EHVAC AND HVDC TRANSMISSION LINES</b>	
<b>Course code: BEELE801T</b>	
<b>Sr. No</b>	<b>Course Outcomes (The Student would be able to)</b>
CO801T.1	<b>Evaluate</b> the power handling capacity of different transmission systems
CO801T.2	<b>Analyze</b> electrostatic and electromagnetic fields and corona in EHVAC lines
CO801T.3	<b>Explain</b> basic configuration of EHVAC & HVDC system
CO801T.4	<b>Utilize</b> the voltage control and current control systems for power flow control in HVDC systems
CO801T.5	<b>Design</b> the AC filters as well as DC filters, Reactive power compensation
CO801T.6	<b>Describe</b> different types of HVDC systems such as MTDC, protection and substation layout of HVDC power plant

<b>DEPARTMENT OF ELECTRICAL ENGINEERING-SEMESTER-VIII</b>	
<b>Name of Course: Power Semiconductor Based Drives</b>	
<b>Course code: BEELE802T</b>	
<b>Sr. No</b>	<b>Course Outcomes (The Student would be able to)</b>
CO802T.1	<b>Explain</b> dynamics and control of electric drives
CO802T.2	<b>Examine</b> the operation of semiconductor converter controlled dc motor drives
CO802T.3	<b>Explain</b> basic principle of control of induction motors and <b>Utilize</b> those principles using semiconductor converter controlled drives
CO802T.4	<b>Explain</b> basic drives schemes used for synchronous motor control
CO802T.5	<b>Understand</b> the basics of switched reluctance motor drives, brushless dc motor drives and solar and battery powered drives
CO802T.6	<b>Explain</b> semiconductor converter controlled DC and AC traction drives

<b>DEPARTMENT OF ELECTRICAL ENGINEERING-SEMESTER-VIII</b>	
<b>Name of Course: Switch Gear &amp; Protection</b>	
<b>Course code: BEELE803T</b>	
<b>Sr. No</b>	<b>Course Outcomes (The Student would be able to)</b>
CO803T.1	Describe basic terminology of Protective Relaying, different types of faults and components used in Power System protection
CO803T.2	Describe and Design the Overcurrent Protection schemes used for Medium Voltage Line
CO803T.3	Differentiate and Describe various distance protection schemes used for High Voltage line
CO803T.4	Explain differential protection as applicable to bus bars, transformers, alternators, motors and Employ suitable protection scheme for various abnormal and faulty conditions
CO803T.5	Describe and Differentiate Static Relays with Electromechanical Relays
CO803T.6	Discuss various methods of Arc interruption and Explain Principle of operation, working and applications of different types of Circuit Breakers



<b>DEPARTMENT OF ELECTRICAL ENGINEERING-SEMESTER-VIII</b>	
<b>Name of Course: COMPUTER APPLICATION IN POWER SYSTEM</b>	
<b>Course code: BEELE804T</b>	
<b>Sr. No</b>	<b>Course Outcomes (The Student would be able to)</b>
CO804T.1	Build Bus Impedance and Admittance matrix (required for load flow and short circuit studies) by graphically, inspection.
CO804T.2	Buid bus impedance matrix by building algorithm (single phase & three phase)
CO804T.3	Distinguish and apply load flow study of a power system by Newton-Raphson, Gauss-Seidel and fast decoupled iterative method.
CO804T.4	Analyze short circuit studies in power system.
CO804T.5	Evaluate transient stability by using modified Euler's method and RK 4 <sup>th</sup> order method.

<b>DEPARTMENT OF ELECTRICAL ENGINEERING-SEMESTER-VIII</b>	
<b>Name of Course: Switch Gear &amp; Protection(PRACT)</b>	
<b>Course code: BEELE803P</b>	
<b>Sr. No.</b>	<b>Course Outcomes (The Student would be able to)</b>
CO803P.1	Make the circuit connections required to perform the Experiment, take observations and analyze the data to make valid conclusions
CO803P.2	Apply and verify the principals of Switchgear & Protection through Laboratory Experimental Work
CO803P.3	Demonstrate the magnetization characteristics of Current Transformer and Identify the Problems associated with CT saturation (Exp. No. 1)
CO803P.4	Demonstrate & Discuss the operation of various Static Relays (Exp. No. 2, 3, 6, 8)
CO803P.5	Understand and Demonstrate the working of IDMT Relay by plotting it's Time-Current Characteristics (Exp. No. 4, 9)
CO803P.6	Understand & Demonstrate the operation of Rewirable Fuse, Biased Differential Relay & Earth fault sensing Relay (Exp. No. 5, 7, 10)

<b>DEPARTMENT OF ELECTRICAL ENGINEERING-SEMESTER-VIII</b>	
<b>Name of Course: COMPUTER APPLICATION IN POWER SYSTEM(PRACT)</b>	
<b>Course code: BEELE804P</b>	
<b>Sr. No.</b>	<b>Course Outcomes (The Student would be able to)</b>
CO804P.1	Survey different software used in Electrical Engineering.
CO804P.2	Construct programs using MATLAB to obtain different power system matrices
CO804P.3	Construct programs using MATLAB to study power system stability
CO804P.4	Make use of ETAP software for studying load flow & short circuit studies
CO804P.5	Organize reports based on experiments using flowcharts and diagrams

<b>DEPARTMENT OF ELECTRICAL ENGINEERING-SEMESTER-VIII</b>	
<b>Name of Course: Project</b>	
<b>Course code: BEELE805P</b>	
<b>Sr. No.</b>	<b>Course Outcomes (The Student would be able to)</b>
CO805P.1	Undertake problem identification, formulation and solution
CO805P.2	Demonstrate a sound technical knowledge of their selected project topic.
CO805P.3	Analyze and assemble the basic information to find solution of a complex engineering problem by using suitable methodology/procedure.
CO805P.4	Communicate with engineers and the community at large in written and oral forms.
CO805P.5	Demonstrate the knowledge, skills and attitudes of a professional engineer.
CO805P.6	Document and report the project work carried out in an appropriate format.

