



Department of Electrical Engineering

Course Outcomes

Course Name: APPLIED MATHEMATICS-III

Class:Thrid Semester BE

Course Code: BEELE301T

CBS-2015

CO1-To understand the basic concept of Laplace- Transform and its application

CO2-Describe the concept of Fourier transform and Fourier series

CO3-Students will be able to understand the concept of maxima and minima of functional and Euler's equation

CO4-To discuss analytic function, Cauchy- Riemann conditions, Cauchy integral theorem & integral formula, Residue theorem

CO5-Student will able to solve partial differential equations of first order first degree i.e. Lagrange's form, linear homogeneous equations of higher order with constant coefficients.

CO6- Student will able to solve second order linear differential equation with constant coefficients by matrix method

Course Name: ELECTRICAL MEASUREMENT AND INSTRUMENTATION

Class:Thrid Semester BE

Course Code:BEELE303T

CBS-2015

CO1-To analyze various bridges to find unknown values of Resistance, Inductance & Capacitance.

CO2-To understand the basic principles of different instruments like PMMC, MI and Electrodynamicometer type and derive its mathematical derivations.

CO3-Ability to measure power & energy using wattmeter methods and energy meter respectively.

CO4- Ability to measure frequency, phase, power factor using frequency meter, synchronoscope and power factor meter etc.

Ability to design healthy, legal & safely meters like energy meters, CT, PT in an ethical way to communicate in a group and give effective presentation.

CO5- To impart knowledge in measuring physical phenomenon's & analyze the principle of different devices like strain gauges, orifice plate, bourdon tube, flow meter, transducers, LVDT, accelerometers, pyrometers etc.

Course Name: NETWORK ANALYSIS

Class:Thrid Semester BE

Course Code: BEETE304T

CBS-2015

CO1-Student will be able to compare real life circuit design problem that are solved by using basics tools of circuit analysis

CO2-Student will be able to apply network techniques, like node analysis and loop analysis, to write equations for large linear circuits.

CO3-Student will be able to construct Thevenin and Norton theorems to analyze and design for maximum power transfer

CO4-Student will be able to analyze the time-domain and S- domain analysis of circuits and also obtain Transfer functions of circuits and analyse the stability using poles of the transfer function

CO5-Student will be able to analyze the frequency response of circuits and to obtain the correlation between time domain and frequency domain response specifications

CO6-Student will be able to apply given Electrical Circuit in terms of A,B,C,D and Z,Y Parameter model and solve the circuits

Course Name: ELECTRONIC DEVICES & CIRCUITS

Class:Thrid Semester BE

Course Code: BEETE305T

CBS-2015

CO1-Acquire basic knowledge on the working of various Semiconductor devices and designing Zener diode, voltage multipliers, filter and various rectifier circuit

CO2- To analysis the operation & configuration of BJT and design the biasing circuit using BJT.



G.H. RAISONI INSTITUTE OF ENGINEERING AND TECHNOLOGY, NAGPUR

Affiliated to RTM Nagpur University, Nagpur and NAAC Accredited.

Shradha Park, B-37/39-1, Hingna-Wad Link Road, Nagpur-440016, Phone Nos.:07104-234501

E-mail: ghrietrn@raisoni.net Website: http://ghrietrn.raisoni.net



CO3-Develop design competence of Power Amplifier & feedback Amplifier

CO4- To understand the working operation & characteristics of Oscillators, FET & MOSFET,

CO5-Develop knowledge on design of differential amplifier circuit

CO6-To study logic gates, boolean laws and analyze the function of different combinational and sequential circuits

Course Name: NON CONVENTIONAL ENERGY SOURCES

Class:Thrid Semester BE

Course Code: BEETE302T

CBS-2015

CO1-Create awareness among students about Non-Conventional sources of energy technologies.

CO2-To understand various renewable energy technologies and systems.

CO3-To understand basic principles of wind energy conversion, wind data & energy estimation, site selection consideration, basic components, classifications of wind energy conversion system.

CO4- Develop awareness of Energy cycles and Ocean thermal electric conversation.

CO5- To impart the knowledge of Storage technologies form the autonomous renewable energy sources.

CO6- Equip the students with knowledge and understanding of various possible mechanisms about renewable energy projects

Course Name: APPLIED MATHEMATICS - IV

Class:Fourth Semester BE

Course Code: BEELE401T

CBS-2015

CO1-Familiar with basic Mechanical systems, basic translational and rotational systems, basic R-L-C series and parallel their representation in Differential Equation.

CO2-To understand the basic concept of Z- Transform and its application

CO3-To discuss Fuzzy logic

CO4-To provide suitable and effective methods called Numerical Methods, for obtaining approximate representative numerical results of the problems.

CO5-Solve ordinary differential equations using Taylor's series method, Runge-Kutta 4th order method, Euler's modified method. Milne's Predictor- Corrector method,

CO6-To introduce the fundamental concepts and theorems of probability theory

Course Name: ELEMENTS OF ELECTROMAGNETICS

Class:Fourth Semester BE

Course Code: BEELE402T

CBS-2015

CO1-Remember the physical basis for the functioning of circuit element, basic knowledge of scalar & vector analysis as well as three dimensional coordinate systems.

CO2-To understand the concept of uniform plane wave propagation and electromagnetic power density flow in lossless medium.

CO3-To apply various laws in the analysis of electromagnetics system and electromagnetic boundary conditions as a knowledge of mathematics, engineering fundamentals.

CO4- To analyze different Maxwell equations used to study time varying electromagnetic or dynamic fields as a solution to complex engineering problems.

Course Name: DIGITAL AND LINEAR ELECTRONIC CIRCUITS

Class:Fourth Semester BE

Course Code: BEELE403T

CBS-2015

CO1-Student will be able to apply knowledge on basic digital electronic gates and develop competence in Combinational Logic Problem formulation and Logic Optimization.

CO2-Student will be able to develop design capability in synchronous and asynchronous sequential circuits

CO3-Student will be able to develop design competence in linear and non-linear Op-Amps Circuits



G.H. RAISONI INSTITUTE OF ENGINEERING AND TECHNOLOGY, NAGPUR

Affiliated to RTM Nagpur University, Nagpur and NAAC Accredited.
Shradha Park, B-37/39-1, Hingna-Wad Link Road, Nagpur-440016, Phone Nos.:07104-234501
E-mail: ghrietrn@raisoni.net Website: http://ghrietrn.raisoni.net



CO4-Student will be able to apply knowledge on commonly used linear and non-linear applications of Op-amps and Comparators
CO5-Student will be able to apply knowledge on Linear ICs and its application

Course Name: ELECTRICAL MACHINE-1

Class:Fourth Semester BE

Course Code: BEELE404T

CBS-2015

CO1-Understand the construction, principle, performance of 3-phase transformers, autotransformer
CO2- Understand the parallel operation of three phase transformer, conversion of three phase to two phase
CO3-Understand the construction, principle, performance, control and applications of DC Motors
CO4-Understand the construction, principle, performance, control and applications of three phase induction motor
CO-5To connect, run, control and test 3 ph Induction motor

Course Name: COMPUTER PROGRAMMING

Class:Fourth Semester BE

Course Code: BEELE405T

CBS-2015

CO1-To understand structure, Data types, Variables, Input/output statements, Storage class, operators of C programming
CO2- To use of Arrays and sorting techniques.
CO3- To understand Pointers and Structures in C programming
CO4-To acquire knowledge of C++ concepts.
CO5-To learn fundamentals of MATLAB Programming.
CO6- To use Matrix operation in C Program

Course Name:Electrical Power System -I

Class:Fifth Semester BE

Course Code: BEELE501T

CBS-2015

CO1-Study and analyze the different power system components and parameters.
CO2-Represent elements of a power system including generators, transmission lines, and transformers using single line diagram and analyze the whole system numerically.
CO-3 Study construction of different feeders, distributors and cables.
CO4-Demonstrate an awareness of the methods used for voltage regulation in electrical power networks
CO5-Apply load flow analysis to an electrical power network and interpret the results of the analysis
CO6- Identify real and reactive power flow in power system and control it using different methods

Course Name: Utilization in Electrical Energy

Class:Fifth Semester BE

Course Code: BEELE502T

CBS-2015

CO1-To comprehend the different issues related to electric heating, arc furnaces.
CO2-Ability to design illumination systems for various applications.
CO3- To comprehend the different issues related to electric heating, arc furnaces and electric welding.
CO4-To provide the students fundamental concepts of refrigeration and air conditioning to apply it in electric safety engineering.
CO5-To design fan & selection criteria, analyze performance & efficient operation of fan and pumps.
CO6-To train the students with a good engineering breadth as to analyze the accessing techniques for acquiring skills in areas like compressed air system components, DG-sets.

Course Name: Electrical Machine Design

Class:Fifth Semester BE

Course Code: BEELE503T

CBS-2015

CO1-Apply knowledge of materials used for efficient construction of transformers, Induction and synchronous machines



G.H. RAISONI INSTITUTE OF ENGINEERING AND TECHNOLOGY, NAGPUR

Affiliated to RTM Nagpur University, Nagpur and NAAC Accredited.

Shradha Park, B-37/39-1, Hingna-Wad Link Road, Nagpur-440016, Phone Nos.:07104-234501

E-mail: ghrietrn@raisoni.net Website: http://ghrietrn.raisoni.net



CO2-Design manually the winding details, magnetic circuit and physical dimensions of transformer, synchronous machine and asynchronous machine for given output ratings.

CO3-Understand the concept of electric and magnetic circuit design

Apply the knowledge of design for rotor core of Induction Motor design

CO4-Acquire knowledge to carry out a detailed design of an synchronous motor and provide the information required for the fabrication of the same along with an estimation of various performance indices

Course Name: Microprocessor & Interfacing

Class:Fifth Semester BE

Course Code: BEELE504T

CBS-2015

CO1-To learn the basics of Microprocessor based Systems.

CO2- To understand the pin diagram and block diagram of 8085 microprocessor and to understand its working.

CO3- To acquire the knowledge about programming instructions and stack operations.

CO4-To learn about interrupts and to program a processor using assembly language.

CO5-To explain the different data transfer techniques.

CO6-To learn configuring and using different peripherals in a digital system.

Course Name: Electrical Machine -2

Class:Fifth Semester BE

Course Code: BEELE505T

CBS-2015

CO1-Student will be able to apply knowledge about the constructional details and principle of operation of alternators

CO2-Student will be able to apply knowledge about the working of synchronous machines as generators and motors

CO3-Student will be able to apply knowledge about testing and applications of synchronous machines.

Course Name: Power Station Practice

Class:Sixth Semester BE

Course Code: BEELE601T

CBS-2015

CO1-To discuss the energy resources and energy conversion methods available for the production of electric power and to calculate load factor, capacity factor, average load and peak load etc. on a power plant.

CO2-To evaluate performance parameters of thermal power plant.

CO3-To acquire the knowledge about working principle of hydro power plant.

CO4-To study different types of nuclear reactors used in nuclear power plant

CO5-Ability to calculate tariffs for all types of power generating stations

CO6-To explain different cogeneration technologies and energy problems.

Course Name: Engineering Economics & Industrial Management

Class:Sixth Semester BE

Course Code: BEELE602T

CBS-2015

CO1- To remember the basic concepts such as inflation, deflation, stagflation & functions of central & commercial bank to assess societal issues, consequent responsibilities relevant to professional engineering practice.

CO2-To understand the demand of goods in market and laws, elasticity of demand & diminishing marginal utility & interpret the data to provide valid conclusions.

CO3-To apply the terms like marketing management, financial management, nature & scope of management as a professional ethics, responsibilities and norms of the engineering practices.

CO4-To analyze different competitions exists in market like for monopoly & oligopoly and the terms like ratio analysis, profit & loss account, balance sheet as it includes analysis & interpretation of data to provide valid conclusions.



G.H. RAISONI INSTITUTE OF ENGINEERING AND TECHNOLOGY, NAGPUR

Affiliated to RTM Nagpur University, Nagpur and NAAC Accredited.

Shradha Park, B-37/39-1, Hingna-Wad Link Road, Nagpur-440016, Phone Nos.:07104-234501

E-mail: ghrietrn@raisoni.net Website: http://ghrietrn.raisoni.net



Course Name: Electric Drives and their Control

Class:Sixth Semester BE

Course Code: BEELE603T

CBS-2015

CO1-Understand the fundamentals of different types of electric drives, dynamic condition and electrical characteristics of drive

CO2-Understand the parameter while selection of a drive for different applications, classification & control methods.

CO3-Knowledge about the programmable logic controllers, their architecture and programming methods & AC DC Contactors .

CO4-Understand the electric traction system. & recent drives used in industries.

Course Name: Power Electronics

Class:Sixth Semester BE

Course Code: BEELE604T

CBS-2015

CO1-To understand the components of Power electronics devices, characteristics and designing issues in circuit design.

CO2-To understand the components and application of power electronics.

CO4-Apply the skill of designing the AC-DC converter and apply the knowledge to find waveform.

CO5-To understand the application of AC-DC converter

CO6-Understand the working principle ,need, design and analyze the DC-DC and DC-AC converters.

CO7-To apply knowledge and analyze the circuits for reduction of harmonics.

Course Name: Control System-I

Class:Sixth Semester BE

Course Code: BEELE605T

CBS-2015

CO1-To Define Basic Principles of Control System and Transfer Function and explain compensators

CO2-To classify the model of dynamic control systems, state space forms and analyses common control schemes.

CO3-To explain different aspect of time response, steady state analysis, transient response, system pole location, and Sensitivity

CO4-Analyze the Absolute Stability and Relative Stability through Root locus and routh stability criteria.

CO5-To analyze techniques like Bode plot and Nyquist plots, Jury stability criteria, Routh stability criteria.

CO6-To simplify concepts of State Variable Approach.

Course Name: Functional English

Class:Sixth Semester BE

Course Code: BEELE606T

CBS-2015

CO1-Improve the English grammar having common errors, Transformation of sentences, phrases, Idioms and proverbs.

CO2-Prepare for competitive exam and to improve the skills of Interview Techniques.

CO3-Prepare the students in their writing skill including Business Letters, e-mail etiquettes, enquiries, job applications and Resume writing Meorandum, Circulars, notices.

CO4- Buit-up the Analytical Comprehension skill in students.

CO5-Prepare the students in Technical and scientific writing

Course Name: Control System-II

Class:Seventh Semester BE

Course Code: BEELE701T

CBS-2015

CO1-To Classify Different Types of Compensators and construct compensators using time domain and frequency domain specifications.

CO2-To define Laplace and Z-Transforms and Its Correlation for Digital Control system, analyze and design of State Variable.

CO3-Analyze & design State Variable Approach.

CO4-To Design and compare of different aspect optimal control system.



G.H. RAISONI INSTITUTE OF ENGINEERING AND TECHNOLOGY, NAGPUR

Affiliated to RTM Nagpur University, Nagpur and NAAC Accredited.

Shradha Park, B-37/39-1, Hingna-Wad Link Road, Nagpur-440016, Phone Nos.:07104-234501

E-mail: ghrietrn@raisoni.net Website: http://ghrietrn.raisoni.net



CO5-To Design Controller for Control System Using Jump resonance and Analyze describing Function Singular Points Method.

CO6-To Explain Fundamentals and Design Procedures of Sampled Data Control System ,Z-Transform and Jury's Test for Digital Control System.

Course Name: Electrical Power System-II

Class:Seventh Semester BE

Course Code: BEELE702T

CBS-2015

CO1-To acquire the knowledge of different methods of power system analysis.

CO2-Formulate and solve the mathematical models describing steady-state physical behavior of transmission and distribution lines.

CO4-Understand& formulate the economy of power system operation.

CO5-To analyze the power system problems on stability and short circuit

CO6-To understand the knowledge of design the models of interconnected electrical power networks.

CO7-Analyze line compensation techniques as applied in reactive power – voltage control and active power flow control.

Course Name: Flexible AC Transmission System

Class:Seventh Semester BE

Course Code: BEELE703T

CBS-2015

CO1-Apply the knowledge of different FACTS controller for increase the maximum power transfer capability and different stability condition.

CO2-To apply the knowledge of Power Electronic devices in FACTS controller for control the Active and Reactive in transmission line

CO3-To analyse the Reactive power compensation by using voltage source converter and current source converter in transmission line

CO4-To understand the objective of series & shunt controller, and operation of TCR, TSR, TSC, FC-TCR, STATCOM , GCSC, TSSC, TCSC& SSSC

CO5-Apply the knowledge of Thyristor controlled voltage regulator and Thyristor controlled phase angle regulator for power compensation in transmission line

CO6-Design Hybrid controller such as UPFC and IPFC. & identify an appropriate FACTS devices for Particular Application

Course Name: High Voltage Engineering

Class:Seventh Semester BE

Course Code: BEELE704T

CBS-2015

CO1-Analyze Break Down in Gaseous, Solid and Liquid Dielectrics

CO2-Learn different High voltage technologies, its application and protecting devices available

CO3-Study the Over Voltage Phenomenon and Insulation Co-Ordination

CO4-Identify the devices for Generation of High Voltages and Currents

CO5-Design the measurement devices for measurement of High Voltages and Currents

CO6- Study the safe testing of various Material and Electrical apparatus

Course Name: Electrical Installation & Designing

Class:Seventh Semester BE

Course Code: BEELE705T

CBS-2015

CO1- To remember the basic concept of loads, types of loads, load factor, power factor and apparatus selection for controlling electrical power.

CO2-To understand the construction, types & selection of PVC/XLPE cables & overhead conductors, relevant provisions of IE rules for low, medium & high voltage installation to assess safety, societal, legal issues & responsibilities.

CO3-To apply procedures for testing & commissioning of transformers along with accessories viz. OTI, Buchholz relay, Silica Gel Breather etc. as a lifelong learning in the context of technological change



G.H. RAISONI INSTITUTE OF ENGINEERING AND TECHNOLOGY, NAGPUR

Affiliated to RTM Nagpur University, Nagpur and NAAC Accredited.
Shradha Park, B-37/39-1, Hingna-Wad Link Road, Nagpur-440016, Phone Nos.:07104-234501
E-mail: ghrietrn@raisoni.net Website: http://ghrietrn.raisoni.net



CO4- To evaluate payback period for capacitor investment due to reduced system current and various reactive power compensation techniques in industries, synthesis of the information to provide valid conclusions.

Course Name: EHVAC-HVDC Transmission

Class: Eighth Semester BE

Course Code: BEELE801T

CBS-2015

CO1- To apply the knowledge of Power handling capacity of different transmission systems and to know the necessity, merits and demerits of EHVAC transmission and mechanical aspects.

CO2- To analyze the effect of Electrostatic and electromagnetic fields and corona due to EHVAC lines.

CO3- To analyse of EHVAC and HVDC systems and to identify the significance of DC over AC transmission system, types and application of HVDC links in practical power systems.

CO4- To analyze the voltage control and current control systems for power flow controls in HVDC system.

CO5- To understand the design parameters of AC filters, DC filters and Reactive power compensation.

CO6- To understand basic knowledge of HVDC system and its protection system

Course Name: Power semiconductor Based Electric Drives

Class: Eighth Semester BE

Course Code: BEELE802T

CBS-2015

CO1- To analyze steady state and Dynamic condition of Electric Drive. Four quadrant operation of DC Drive

CO2- To study the converter and chopper control of DC Drives.

CO3- To analyse semiconductor based control of induction and synchronous motors, also study variable frequency control using voltage source inverter

CO4- To study the four quadrant chopper fed to DC Separately Excited and Series Motor.

CO5- To analyse the non-conventional and renewable energy based drives.

Course Name: Switchgear and Protection

Class: Eighth Semester BE

Course Code: BEELE803T

CBS-2015

CO1- Acquire the knowledge of various protective relaying systems

CO2- Acquire the Knowledge of various conventional relays, their design and latest developments.

CO3- Ability to design protective scheme in power system for protecting equipment & personnel.

CO4- To Analyze recovery and restriking voltage and Arc interruption phenomenon

CO5- Implementation of recent technology for the protection of power system equipment

CO6- Acquire the Knowledge of various types of existing circuit breakers, their design & constructional details.

Course Name: Computer Application in Power System

Class: Eighth Semester BE

Course Code: BEELE804T

CBS-2015

CO1- Recall formulation of the YBUS, YBRANCH and ZBUS matrix for a small power grid

CO2- Classify the problem related to Power System

CO3- Make use of the algorithm for formation of bus impedance matrix

CO4- Analyze the load flow equation of Power system and using this information get the valid conclusion

CO5- Compare the steady state and transient stability of power system

CO6- Build the second-order dynamic equation of a generator.

M.TECH IPS/PEPS

Course Name: Advance Power Electronics

Class: First Semester IPS/PEPS

Course Code: PG IPS101T/PGPEPS 101T

CBCS-2016

CO1: To develop in depth knowledge of advanced power electronics devices.



G.H. RAISONI INSTITUTE OF ENGINEERING AND TECHNOLOGY, NAGPUR

Affiliated to RTM Nagpur University, Nagpur and NAAC Accredited.
Shradha Park, B-37/39-1, Hingna-Wad Link Road, Nagpur-440016, Phone Nos.:07104-234501
E-mail: ghrietr@raisoni.net Website: http://ghrietr.raisoni.net



CO2: To study, design and analyze the ac to ac converters.

CO3: Study, design and analyze dc to dc converters with their applications.

CO4: Understand and analyze various resonant and soft switching techniques for converters.

CO5: Study, design and analyze the dc to ac converters.

Course Name: Power System Modeling

Class: First Semester IPS/PEPS

Course Code: PG IPS102T/PGPEPS 102T

CBCS-2016

CO1: To use Park's transformation and per unit system for simulation and stability analysis of power system.

CO2: To understand the general construction and relationship between the various fluxes and its impact on induced emf during the small and transient disturbances.

CO3: Understand the operational behavior and problems of two machine and multi-machine power system for stability study

CO4: To obtain the equivalent circuit, its parameters and simulation model for various components including loads in power system for static and dynamic stability studies.

CO5: To do Simulation and analysis of Dynamics of synchronous generator connected to infinite bus or multi machine power system.

Course Name: Power System Deregulation and Automation

Class: First Semester IPS

Course Code: PGIPS103T

CBCS-2016

CO1: To build a practical knowledge various distribution system and its shortcomings with reference to of Indian scenario converters

CO2: To Adapt the idea of energy forecasting and load forecasting and the actual need of energy generation in terms of short, medium and long period of operation of the distribution system

CO3: Explain the role of automation to make distribution system more smart, reliable & efficient and correlate this aspect with required technology of PLC based components & SCADA.

CO4: To Define the role of reconfiguration of distribution system and understand the best use of distribution system with reduction of losses and faulty lines.

CO5: To Explain the role of SCADA making the distribution system more smart and all proof

Course Name: Power System Dynamics & Control

Class: First Semester IPS/PEPS

Course Code: PGIPS104T/PGPEPS104T

CBCS-2016

CO1: To understand short circuit and stability studies of components of power system.

CO2: To understand transient stability problem, its control and improvement in transient stability

CO3: To analyse different faults in single machine and multi-machine system

CO4: To understand new technologies for transient stability improvement and study excitation system

CO5: To study and analyze the Augmentation of stability

Course Name: Utilization of Electrical Energy

Class: First Semester IPS/PEPS

Course Code: PGOPEN 105T

CBCS-2016

CO1: To select their electric drive system based on application and availability of power source.

CO2: Apply power electronics technology in efficient utilization of electrical heating

CO3: Apply power electronics technology in efficient utilization of electrical welding

CO4: Create lighting system using illumination fundamentals and various illumination Technologies



G.H. RAISONI INSTITUTE OF ENGINEERING AND TECHNOLOGY, NAGPUR

Affiliated to RTM Nagpur University, Nagpur and NAAC Accredited.
Shradha Park, B-37/39-1, Hingna-Wad Link Road, Nagpur-440016, Phone Nos.:07104-234501
E-mail: ghrietrn@raisoni.net Website: http://ghrietrn.raisoni.net



CO5: Analyze effective utilization of Power Electronic technologies in Electrical Traction.

Course Name: HVDC & FACTS

Class: Second Semester IPS /PEPS

Course Code: PGIPS201T/PGPEPS201T

CBCS-2016

CO1: To Describe types of topology and multi terminal HVDC System

CO2: To Describe converter operation and its control in various modes

CO3: Analyse the fault in HVDC system and provide proper protection and apply knowledge of FACTS controller to AC transmission system

CO4: Apply shunt, series and their combination for compensation.

CO5: Understand the operating characteristic of various FACTS controllers

Course Name: Power Quality

Class: Second Semester IPS/PEPS

Course Code: PGIPS202T/PGPEPS202T

CBCS-2016

CO-1 Student will be able to define term like power quality disturbances, and their causes, detrimental effects and solutions.

CO-2 Student will be able to identify the causes of power quality problems and relate them to equipment

CO-3 Student will be able to formulate the indices used to analyse power quality issues

CO-4 Student will be able to understand power quality monitoring method, equipments and develop the ability to analyze the measured data

CO-5 Student will be able to identify the harmonic sources and design passive filters, active filters and standards.

Course Name: Power System Protection

Class: Second Semester IPS

Course Code: PGIPS203T

CBCS-2015

CO1: Acquire the knowledge of various abnormal conditions that could occur in power system.

CO2: Ability to design various protective devices in power system for protecting equipment and personnel.

CO3: Able to have knowledge of various types of existing circuit breakers, their design and constructional details.

CO4: Able to have knowledge of various conventional relays, their design and latest developments.

CO5: To learn the design procedure for controller for digital control system using root locus method, Bilinear transformation.

Course Name: Power System Planning

Class: Second Semester IPS

Course Code: PGIPS204T

CBCS-2015

CO1: Understanding concepts of power planning and electricity regulation

CO2: Able to use the basics of load forecasting generation planning that will be useful for engineering professional practice in the power sector operation.

CO3: Able to use the basics of transmission planning that will be useful for engineering professional practice in the power sector operation

CO4: Understanding concepts of power system reliability that will be useful for engineering professional practice in the power sector operation and planning.

CO5: Able to understand the System Operation & Environmental Aspects in Planning that will be useful for engineering professional practice in the power sector.



G.H. RAISONI INSTITUTE OF ENGINEERING AND TECHNOLOGY, NAGPUR

Affiliated to RTM Nagpur University, Nagpur and NAAC Accredited.
Shradha Park, B-37/39-1, Hingna-Wad Link Road, Nagpur-440016, Phone Nos.:07104-234501
E-mail: ghrietrn@raisoni.net Website: http://ghrietrn.raisoni.net



Course Name: Digital Control System

Class: Third sem IPS

Course Code: PGOPEN 301T BESI-1

CBCS-2016

CO1: To Explain the basic principles and modelling of digital control system in transfer function and state-space domain

CO2: Define application of Laplace and Z-transforms and its correlation for digital control system.

CO3: To analyse different aspect of time response like steady state , transient response with system pole location, disturbance rejection, robustness and sensitivity

CO4: To analyze techniques Root locus, Bode and Nyquist plots, Jury stability criteria, Routh stability criteria, Bilinear transformation

CO5: Design methods IIR and FIR filters and their realisation structures.

CO6: Explain finite wordlength effects in the implementation of digital filters

Course Name: PLC & SCADA

Class: Third sem IPS

Course Code: PGOPEN 301T

CBCS-2016

CO1: To understand overall PLC system in detail

CO2: To deal with the problems of PLC programming

CO3: To find out the real time schedule of operation of advanced PLC function.

CO4: To deal with various PLC application

CO5: To handle the problems related with automation and SCADA

Course Name: RESEARCH METHODOLOGY

Class: Foruth Sem IPS /PEPS

Course Code: PGFD205T Foundation Course -I

CBCS-2016

CO1: To have knowledge on various kinds of research questions and research designs

CO2: To formulate research problems (task) and develop a sufficiently coherent research design

CO3: To assess the appropriateness of different kinds of research designs

CO4: To have knowledge on qualitative, quantitative and mixed methods of research, as well as relevant ethical and philosophical considerations

CO5: To develop independent thinking for critically analyzing research reports