E.G.S. PILLAY ENGINEERING COLLEGE (AUTONOMOUS)

NAGAPATTINAM – 611 002. TAMILNADU, INDIA
Approved by AICTE, New Delhi, Affiliated to Anna University, Chennai
(Accredited by NAAC with 'A' Grade and NBA)
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SEMESTER - I

COURSE CODE & NAME: C 101 - 1701MA101 & ENGINEERING MATHEMATICS-I

COURSE OUTCOME

1 Determine the nature of the matrix using orthogonal transform
2 Calculate the inverse and positive powers of a square matrix
3 Determine the solution of the higher order differential equations using method of variation of parameter
4 Develop the evolutes and envelopes of given curves by means of radius and centre of curvature
5 Correlate the maxima/minima for the given function with several variables by finding stationary points
6 Determine the nature of the series using Comparison, Ratio, Leibnitz tests

COURSE CODE & NAME: C 102 – 1701PH101 & APPLIED PHYSICS FOR ENGINEERS

COURSE OUTCOME

1 Compare the different ways of ultrasonic waves generation using Piezoelectric and Magnetostriction methods, their detection and industrial applications
2 Use ultrasonic waves for NDT, SONAR and medical scanning applications
3 Differentiate the phenomenon of interference, its application homojunction and CO_2 lasers and fiber optic communications
4 Correlate the types of crystal systems, planes through Miller Indices and structure determination using X-ray diffraction
5 Solve Schrödinger's wave equations, physical significance of wave function and application in electron microscopes
6 Determine different elastic moduli using twisting and uniform bending for solid materials and viscosity of liquids by streamline flow methods

COURSE CODE & NAME: C 103 - 1701EN101 & TECHNICAL ENGLISH

COURSE OUTCOME

1 Compose grammatically correct sentences for oral as well as written communication.
2 Interpret perfectly after paying attention to an audio on any theme.
3 Organize formal presentations effectively.
4 Explain the content of any written or visual material.
5 Generate technical and non-technical documents with appropriate contents and context.
6 Monitor, analyze and adjust their own communication.

COURSE CODE & NAME: C104 - 1701CH104 & APPLIED CHEMISTRY

COURSE OUTCOME

1 Explain the electrochemical principles and its application
2 Describe the various corrosion causing agents and its protective measures.
3 Differentiate the various energy sources and its application in day to day life
4 Discuss the polymer science principles and its application
5 Explain the various analytical methods for the estimation of elements in aqueous media

COURSE CODE & NAME: C105 - 1701GE102 & BASIC CIVIL ENGINEERING

COURSE OUTCOME

1 Realize the concepts of basic surveying
2 Select & utilize the suitable building materials
3 Demonstrate the classifications of foundation and superstructures
4 Explain the properties of solids
5 Explain the properties of fluids

COURSE CODE & NAME: C106 - 1701GE103 & BASIC MECHANICAL ENGINEERING

COURSE OUTCOME

1 Identify the components use in power plant cycle.
2 Demonstrate working principles of petrol and diesel engine
3 Explain the components of refrigeration and Air conditioning cycle
4 Explain the force system and free body diagram.
5 Explain the manufacturing process.

COURSE CODE & NAME: C107 - 1701HS151 & PHYSICS AND CHEMISTRY LAB –I

COURSE OUTCOME

1 Realize the concept of properties of matter and apply the same for practical applications
2 Identify the suitable laser source for fibre optic communication applications.
3 Determine the velocity of ultrasonic waves and apply the same for day today applications.
4 Classify the different types of crystal structures and analyse their properties.
5 Comprehend the efficacy of quantum equations in modern areas
6 Identify the pH of the solution.
7 Find the iron content of the water sample using potentiometer.
8 Explain and demonstrate the conductance of the solution.
9 Interpret the hardness and metal ions present in the water

COURSE CODE & NAME: C108 – 1701GEX52 & COMMUNICATION SKILLS LAB

COURSE OUTCOME

1 Accomplishment of sound vocabulary and its proper use contextually.
2 Flair in Writing and felicity in written expression
3 Enhanced job prospects.
4 Effective Speaking Abilities.

COURSE CODE & NAME: C109 – 1701GEX53 & Workshop practice

COURSE OUTCOME

1 Fabricate simple components using sheet metal & welding equipment/tools.
2 Make simple components / joints using carpentry and fitting tools
3 Prepare green sand mould using suitable tools.
4 Make simple household electrical & pipe line connections using suitable tools
5 Make / operate / utilize the simple engineering components

SEMESTER - II

COURSE CODE & NAME: C110 – 1701MA201 &ENGINEERING MATHEMATICS-II

COURSE OUTCOME

1 Construct Analytic functions and trace the image of a region using transformation
2 Solve complex integrals.
3 Apply multiple integral technique to find area and volume.
4 Compute surface integral in vector field.
5 Compute volume integral in vector field.
6 Apply Laplace Transform in solving Boundary value problems of second order ODE.

COURSE CODE & NAME: C111 – 1701PH202 & SEMICONDUCTOR PHYSICS AND DEVICES

COURSE OUTCOME

1 Identify different types of emission of electrons and significance of Fermi function
2 Explore the carrier concentration and its variation with temperature of different semiconducting materials
3 Analyse the I-V characteristics of a junction diode
4 Investigate the various polarization mechanisms in dielectrics
5 Select appropriate optical and magnetic materials for data storage devices

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COURSE CODE & NAME: C112 – 1701CH201 & ENVIRONMENTAL STUDIES

COURSE OUTCOME

1 Describe the importance of ecosystem and its conservation.
2 Differentiate various natural resources and the urgent need to conserve the natural resources.
3 Explain the different types of pollution and its effects.
4 Describe the various environmental protection acts.
5 Explain the major diseases, women, child development and the impacts of population explosion.

COURSE CODE & NAME: C113 – 1701GEX02 & ENGINEERING GRAPHICS

COURSE OUTCOME

1 Perform free hand sketching of basic geometrical constructions and multiple views of objects.
2 Do orthographic projection of lines and plane surfaces.
3 Draw projections, solids, and development of surfaces.
4 Prepare isometric and perspective sections of simple solids
5 Demonstrate computer aided drafting.

COURSE CODE & NAME: C114 – 1701GEX03 & PROGRAMMING IN C

COURSE OUTCOME

1 Describe basic concepts of computers
2 Paraphrase the operations of number system
3 Describe about basic concepts of C-Language
4 Understand the code reusability with the help of user defined functions
5 Analyse the structure concept, union in C language
6 Analyse the file management and pre-processor in C language

COURSE CODE & NAME: C115 – 1702EE201 & ELECTRIC CIRCUIT ANALYSIS

COURSE OUTCOME

1 Explain the basic laws, theorems and concepts of DC / AC (1 phase and 3 phase)circuits, Resonant and coupled circuits
2 Solve the problems in network topology and to identify the dual of the network.
3 Solve the problems in resonance circuits, coupled circuits and two port networks
4 Analyse the transient behaviour of first and second order circuits using Laplace transforms.
5 Apply Ohms law, Kirchhoff 'laws, mesh &nodal methods and network theorems to solve Circuit problems.
6 Analyse three phase 3 wire/ 4wire balanced/ unbalanced star/delta connected loads.

COURSE CODE & NAME: C116 – 1701GEX51 & PROGRAMMING IN C LAB

COURSE OUTCOME

1	Understand basic concepts of computers.
2	Implement basic concepts of c-language.
3	Implement arrays, strings and pointers.
4	Implement the basics of structures, unions in C language
5	Implement the file management and pre-processor in C language

COURSE CODE & NAME: C117 – 1701HS251 & PHYSICS AND CHEMISTRY LAB II

COURSE OUTCOME

1	Realize the concept of properties of matter and apply the same for practical applications.
2	Identify the suitable laser source for fiber optic communication applications.
3	Determine the velocity of ultrasonic waves and apply the same for day today applications
4	Classify the different types of crystal structures and analyse their properties
5	Comprehend the efficacy of quantum equations in modern areas.
6	Illustrate the EMF of the Redox reaction.
7	Compare the Alkalinity of given water Sample with their standards.
8	Identify the concentration of metal ion present in water sample
9	Outline the precipitation titration using conductivity meter
10	Interpret the dissolved oxygen present in the water

SEMESTER - III

COURSE CODE & NAME: C 201 - 1701MA301 & ENGINEERING MATHEMATICS-III

COURSE OUTCOME

1	Use Fourier series analysis which is central to many applications in engineering
2	Apply Fourier transform techniques used in wide variety of situations
3	Compute the solution of partial differential equations
4	Solve boundary value problem using partial differential equation
5	Apply Z transform techniques for discrete time systems

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COURSE CODE & NAME: C202 - 1702EE301 &ELECTRON DEVICES AND CIRCUITS

COURSE OUTCOME

1 Explain the structure, operation and V-I Characteristics of Diodes.

2 Describe the V-I characteristics of BJT in CB, CE & CC configurations also able to design and analyze amplifier circuits containing BJT as a device.

3 Discuss the structure, operation and V-I characteristics of FET also able to design and analyze amplifier circuits containing FET as a device.

4 Explain the need and operation of differential amplifiers, single tuned amplifiers and power amplifiers able to analyze differential and single tuned amplifiers.

5 Analyse negative feedback amplifiers to determine necessary expressions & RC, LC and Crystal Oscillators to find out frequency of oscillations.

COURSE CODE & NAME: C203 - 1702EE301 & Digital Electronics

COURSE OUTCOME

1 Solve digital system problems using number systems, binary codes, logic gates and Boolean algebra.

2 Apply Boolean laws and Karnaugh map to reduce the switching functions.

3 Construct combinational logic circuits using logic gates and multiplexers.

4 Build synchronous sequential logic circuits using excitation table, stable table and state diagrams.

5 Construct asynchronous sequential logic circuits using flow table, transition table, state assignment and state reduction techniques.

6 Implement Boolean functions and combinational logic circuits using memories, programmable logic devices and logic families.

COURSE CODE & NAME: C204 - 1702EE303 & ELECTROMAGNETIC THEORY

COURSE OUTCOME

1 Explain the basics of electromagnetism, gauss law, coulomb's law, ampere law and thermos of divergence, stokes and pointing.

2 Make use of vector, gradient, divergence, curl in electrostatics and magneto statics.

3 Correlate gauss law, coulomb is law for calculating the charges, forces, field intensity and flux density for a finite, infinite, circular line and boundary condition in an electric field.

4 Correlate gauss law, coulomb's law for calculating the charges, forces, field intensity and flux density or a finite, infinite, circular line and boundary condition in a magnetic field.

5 Determine the Maxwell's equation, wave equation for a time varying field.

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COURSE CODE & NAME: C205 - 1702EE304 & POWER PLANT ENGINEERING

COURSE OUTCOME

1 Understand the construction and operation of Thermal power plants.
2 Select the suitable turbine for hydro power plants.
3 Identify the required turbine, site for diesel and gas power plant.
4 Explain the reactor operation and selection of site in Nuclear power plant.
5 Describe the power generation from various renewable resources.

COURSE CODE & NAME: C206 - 1702EE305 & ELECTRICAL MACHINERY-I

COURSE OUTCOME

1 Understand the operation characteristics of DC machines.
2 Understand the operation characteristics of Transformer.
3 Analyse the performance parameters of DC machine and Transformer.
4 Elucidate the applications of transformer.
5 Apply the different testing methods to assess the performance of Electrical machines.

COURSE CODE & NAME: C 207 -1702EE351 & ELECTRICAL MACHINERY LABORATORY-I

COURSE OUTCOME

1 Understand the operation characteristics of DC machines.
2 Understand the operation characteristics of Transformer.
3 Analyse the performance parameters of DC machine and Transformer.
4 Elucidate the applications of transformer.
5 Apply the different testing methods to assess the performance of Electrical machines.

COURSE CODE & NAME: C208 - 1702EE352 & ELECTRON DEVICES AND CIRCUITS LABORATORY

COURSE OUTCOME

1 Illustrate the turn on and turn off process of different switches.
2 Design a circuit, which is used to convert ac signal to dc signal.
3 Determine voltage gain from CE and CB configurations.
4 Determine the frequency and gain value of various types of oscillators and amplifiers.
5 Study and understand the operation of digital storage oscilloscope.

COURSE CODE & NAME: C209 - 1704EE353 & TECHNICAL SEMINAR I

COURSE OUTCOME

1 Identify and utilize various technical resources available from multiple field
2 Improve the technical presentation and communication skills
3 Improve communicative competence
4 Interact and share their technical knowledge
5 Understand and adhere to deadlines and commitment to complete the assignments

COURSE CODE & NAME: C210 - 1704GE351&LIFESKILLS:SOFT SKILLS

COURSE OUTCOME

1 Communicate effectively in their business environment.
2 Improve their interpersonal skills, which are mandatory in a corporate world.
3 Brand themselves to acquire a job.
4 Involve in corporate etiquettes.
5 Survive in the different situations.

SEMESTER - IV

COURSE CODE & NAME: C211 - 1702MA403 &NUMERICAL METHODS AND STATISTICS

COURSE OUTCOME

1 Communicate effectively in their business environment.
2 Improve their interpersonal skills, which are mandatory in a corporate world.
3 Brand themselves to acquire a job.
4 Involve in corporate etiquettes.
5 Survive in the different situations.

COURSE CODE & NAME: C212 – 1702EE402 & MEASUREMENTS AND INSTRUMENTATION

COURSE OUTCOME

1 Describe the basic functional elements of measuring instruments and the errors in the measurements systems.
2 Discuss the operation and applications of measuring instrument under typical environment.
3 Identify the unknown values of resistor, inductor and capacitor of given network using suitable bridge circuit.
4 Explain the construction and working principle of various storage and display devices.
5 Make use of sensor and transducers in measuring purpose using data acquisition system.

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COURSE CODE & NAME: C213 – 1702EE402 - LINEAR INTEGRATED CIRCUITS

COURSE OUTCOME

1. Explain the fundamentals of IC technology and fabrication of diode, capacitance, resistance, FET and typical circuits.
2. Describe the functional block diagram, performance parameters and frequency compensation techniques of operational amplifier.
3. Construct analog circuits using operational amplifiers for linear applications.
4. Construct analog circuits with operational amplifiers for non-linear applications.
5. Build signal converters using operational amplifiers.
6. Design timer and voltage regulator circuits using special function ICs.

COURSE CODE & NAME: C214 - 1702EE403 & TRANSMISSION AND DISTRIBUTION

COURSE OUTCOME

1 Infer knowledge on the basics of transmission system of power system
2 Develop expressions for the computation of transmission line parameters
3 Obtain the voltage regulation and efficiency from the equivalent circuit of the transmission Lines
4 Apply the voltage distribution in insulator strings
5 Interpret the parameters related to underground cable
6 Develop the transmission line and modern substation layout with grounding techniques.

COURSE CODE & NAME: C215 - 1702EE404 & ELECTRICAL MACHINERY-II

COURSE OUTCOME

1 Investigate the percentage regulation of three-phase AC generator using various regulation methods
2 Inspect the performance characteristics of three-phase synchronous motor by conducting various test
3 Identify the performance characteristics of three-phase induction motor by conducting OC and SC test
4 Gain Knowledge about the concepts of starters & speed control methods
5 Describe the characteristics behavior of various types of single-phase induction motor and special machines

COURSE CODE & NAME: C216 - 1702EC406 & COMMUNICATION ENGINEERING

COURSE OUTCOME

1 Explain the fundamental techniques of generations and detections for Amplitude, Frequency and Phase modulations
2 Construct a sampled and quantized signal for baseband transmission.
3 Describe the concepts of Digital modulation schemes for digital data transmission.
4 Apply cellular concepts in mobile communication networks
5 Make use of multiple access mechanisms of mobile communication networks

COURSE CODE & NAME: C217 - 1702EE451 & ELECTRICAL MACHINERY LABORATORY-II

COURSE OUTCOME

1 Investigate various regulation methods of synchronous machines by conducting OCC and SCC test
2 Experiment on synchronous machines for obtaining performance characteristics by conducting V and inverted V curve test
3 Compute the performance characteristics of single phase and three-phase induction motor by conducting load, no load and blocked rotor test
4 Construct the characteristics of special machines
5 Study about various types of starters in AC motor

COURSE CODE & NAME: C218 - 1702EE452 & ANALOG AND DIGITAL INTEGRATED CIRCUITS LABORATORY

COURSE OUTCOME

1 Apply various types of biasing and amplifier configuration
2 Use simplification techniques to design a combinational hardware circuit
3 Design and Implement combinational and sequential circuits
4 Design and Implement a simple digital system
5 Apply analog and digital electronic circuits

SEMESTER –V

COURSE CODE & NAME: C301 - 1702EE501&ELECTRICAL MACHINE DESIGN

COURSE OUTCOME

1 Explain the major considerations in electrical machine design by considering thermal, magnetic and electric loadings
2 Calculate the design parameters of a DC machine
3 Compute the design parameters of a transformer
4 Calculate the design parameters of Induction motor
5 Calculate the design parameters of synchronous machine

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COURSE CODE & NAME: C302 - 1702EE502& LINEAR CONTROL SYSTEMS

COURSE OUTCOME

1 Calculate transfer function of various systems using block diagram reduction, signal flow graph technique
2 Investigate the time response behaviour of first and second order system using time domain specification
3 Analyse the frequency response of open loop transfer function using bode plot and polar plot
4 Examine the Stability and compensator design in control systems using various Plots
5 Organize the concept of State Variable models and its applications

COURSE CODE & NAME: C303 - 1702EE503& POWER ELECTRONICS

COURSE OUTCOME

1 Understand the structure and characteristics of power semiconductor devices
2 Elucidate the operation of power modulators
3 Analyze the control techniques used in power modulators
4 Analyze the performance parameters of power converters
5 Explain the operation and characteristics of various power electronics converters

COURSE CODE & NAME: C304 - 1703EE001&SPECIAL ELECTRICAL MACHINES

COURSE OUTCOME

1 Explain the constructional features and operation of special electrical machines.
2 Draw and explain the phasor diagram and characteristics of special electrical machines.
3 Determine the torque and voltage equations of special electrical machines.
4 Describe the operations of circuits associated with special electrical machines.
5 Explain the constructional features and operation of special electrical machines.

COURSE CODE & NAME: C305 - 1703EE002&ELECTRICAL SAFETY AND MANAGEMENT

COURSE OUTCOME

1 Understand the Indian electricity rules and their significance.
2 Identify hazardous areas in Industrial sectors.
3 Describe the various steps in first aid and safety during electrical installation.
4 Investigate the various fire extinguishers and its mode of operation.
5 Make use of energy management and energy auditing procedures in industrial sectors.

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COURSE CODE & NAME: C310 - 1702CS504 & OBJECT ORIENTED PROGRAMMING

COURSE OUTCOME

1 Define the features of C++ supporting object oriented programming
2 Understand the major object-oriented concepts such that constructor and operator overloading in C++
3 Identify to implement error handling techniques using exception handling
4 Identify classes, objects, methods of a class and relationships among them in Java
5 Understand the principles of Packages, Interfaces, Multithreading in Java

COURSE CODE & NAME: C311 - 1702CS554 & OBJECT ORIENTED PROGRAMMING LABORATORY

COURSE OUTCOME

1 Develop program to illustrate basic concept of OOP features and C++ concept
2 Implement the program using unary and binary operator overloading in C++
3 Write program to implement concept of inheritance and polymorphism in C++
4 Understand and Apply Object oriented features and Java concepts.
5 Develop and implement program using exception handling and templates in Java

COURSE CODE & NAME: C312 - 1702EE551 & MEASUREMENT AND CONTROL LABORATORY

COURSE OUTCOME

1 Investigate various characteristics of sensors and transducers
2 Make use of bridge networks in measurement circuits for measuring unknown values
3 Discuss the concept of controllers and compensators
4 Analyze the stability of LTI system using software tool
5 Perform the signal conditioning operation and power measurements.
Investigate the role of position control system and transfer function of DC machines in control system.

COURSE CODE & NAME: C314 - 1704GE551 & LIFE SKILLS: APTITUDE-I

COURSE OUTCOME

1 Understand about number system.
2 Gather information about ratio and proportion, averages
3 Discuss about percentages, profit and loss
4 Describe about coding and decoding, direction sense
5 Understand the number and letter series number

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SEMESTER – VI

COURSE CODE & NAME: C315 - 1701MGX02 & INDUSTRIAL ECONOMICS

COURSE OUTCOME

1 Understand the fundamentals of Industrial Economics
2 Explain about demand and supply in market
3 Calculate the cost involved in production function using Cost Curves
4 Describe the different market structure involved in economics
5 Summarize the macro economics and financial accounting

COURSE CODE & NAME: C316 - 1702EE601& SOLID STATE DRIVES

COURSE OUTCOME

1 Explain the dynamics of motor load system and types of load along with their characteristics.
2 Determine speed current voltage and torque of rectifier and chopper fed DC drive in all
3 Calculate the performance parameters of induction motor drives with appropriate power electronics converter in motoring and braking modes
4 Discuss about speed control techniques of VSI, CSI and cycloconverter fed synchronous motor drives
5 Design a speed & current controller for a closed loop drive system.

COURSE CODE & NAME: C317 - 1702EE602& POWER SYSTEM ANALYSIS

COURSE OUTCOME

1 Explain the fundamentals of power system with the aid of single line diagram and per unit analysis
2 Develop power flow models by addressing various power flow problems using iterative techniques
3 Apply the symmetrical fault calculation methods for the unbalanced network using z bus matrix
4 Apply the unsymmetrical fault calculation methods for the unbalanced network using sequence network analysis
5 Make use of power system stability studies for planning and operation of network through various solution techniques

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COURSE CODE & NAME: C318 - 1702EE603 & MICROPROCESSOR, MICROCONTROLLER AND ITS APPLICATIONS

COURSE OUTCOME

1 Explain the architecture, memory organization, timing diagram and interrupt structure of microprocessor
2 Perform mathematical operation using 8085 & 8051instruction set
3 Explain the architecture, interrupt, memory organization and addressing modes of 8051
4 Practice interfacing of commonly used programmable peripheral devices using 8085 and 8051
5 Make use of 8051 controller for the control of simple electrical systems

COURSE CODE & NAME: C319 - 1703EE005 &POWER SYSTEM TRANSIENTS

COURSE OUTCOME

1 Understand about the causes, types and effects of transients.
2 Investigate the phenomenon of switching transients and its effect
3 Investigate the phenomenon of lightning transients and its effect.
4 Compute the transient response of travelling waves on transmission line
5 Discuss the transients in integrated power system.

COURSE CODE & NAME: C320 - 1703EE006 &DIGITAL SIGNAL PROCESSING

COURSE OUTCOME

1 Make use of discrete Fourier transfer in various filtering algorithms
2 Analyze IIR filter by using various mathematical approaches
3 Analyze FIR filter by using various mathematical approaches
4 Investigate the effects of finite word length in DSP applications
5 Acquire knowledge in various digital signal processers and its architecture

COURSE CODE & NAME: C327 - 1702EE651 & POWER ELECTRONICS AND DRIVES LABORATORY

COURSE OUTCOME

1 Construct experiments on power electronic component for obtaining characteristics curve
2 Make use of half-controlled converter for DC motor
3 Identify the characteristic plot of IGBT based PWM inverter
4 Infer the operation of AC voltage controller and Switched mode power converter
5 Make use of Simulation of PE circuits

COURSE CODE & NAME: C328 - 1702EE652 & MICROPROCESSOR, MICROCONTROLLER AND ITS APPLICATIONS LABORATORY

COURSE OUTCOME

1 Perform mathematical operations and control instructions using 8085 processor
2 Practice interfacing of commonly used programmable peripheral interfaces using 8085
3 Perform arithmetical operations using 8051 microcontroller
4 Practice interfacing of commonly used programmable peripheral interfaces using 8051
5 Develop assembly language program to control simple electrical system using 8085, 8051

SEMESTER- VII

COURSE CODE & NAME: C401 - 1701MGX01 & PROFESSIONAL ETHICS

COURSE OUTCOME

1 Discuss about Engineering ethics by using various theorems
2 Describe the role of engineering as social experimentation
3 Explain the role of engineers for safety
4 Discuss various responsibility and rights in professional ethics
5 Discuss about various global issues and its impact in society

COURSE CODE & NAME: C402 - 1702EE701 & PROTECTION & SWITCHGEAR

COURSE OUTCOME

1 Explain the principle and operation of various protection schemes
2 Describe the function and characteristics of different types of relay
3 Describe the causes of abnormal operating condition of power system components
4 Outline the arc phenomenon and switching behaviour of circuit breakers
5 Explain the classification of circuit breakers with testing standards

COURSE CODE & NAME: C403 - 1702EE702 & POWER SYSTEM OPERATION AND CONTROL

COURSE OUTCOME

1 Explain the principle and operation of various protection schemes
2 Make use of the importance of real power & frequency control in power system
3 Apply various methods of reactive power & voltage control in power system
4 Calculate the solution for unit commitment and least cost methodology for power generation
5 Describe the SCADA, EMS and various security schemes in power system

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COURSE CODE & NAME: C404 - 1702EE703 & HIGH VOLTAGE ENGINEERING

COURSE OUTCOME

1 Describe the fundamentals of over voltages, causes of over voltages and protection against over voltages
2 Explain the breakdown mechanism in gaseous, liquid, and vacuum dielectrics
3 Review the methods of generation of high voltages and high currents
4 Summarize the measurement techniques of high voltages and high currents
5 Infer the high voltage testing of electrical power apparatus like insulator, bushing, circuit breaker, isolator and transformer

COURSE CODE & NAME: C405 - 1703EE010&ELECTRIC AND HYBRID VEHICLES

COURSE OUTCOME

1 Describe the importance and challenges of electric vehicles
2 Discuss the energy storage system and battery technology in electric vehicles
3 Infer about various charging system and starting system
4 Explain the role of hybrid electric vehicle with its safety
5 Discuss the emerging technologies and its benefits

COURSE CODE & NAME: C406 - 1702EE751& POWER SYSTEM SIMULATION LABORATORY

COURSE OUTCOME

1 Understand and to solve the basic problems in power systems
2 Compute and model the transmission line parameters
3 Analyse the load flow in power systems
4 Model the power system dynamics components
5 Analyse the stability of the power systems

COURSE CODE & NAME: C407 - 1702EE752 & COMPUTER AIDED ELECTRICAL DRAWING LABORATORY

COURSE OUTCOME

1 Draw the various symbols, notations and single line electrical drawings using software
2 Sketch the electrical machine assembly and winding diagram of induction motor
3 Draw the single line diagram of different panel boards and substation layout
4 Sketch the control and main circuit of motor starters
5 Draw the circuit diagram and simulate/test simple electrical and electronics circuits using simulation software

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COURSE CODE & NAME: C411 - 1703EE017&FLEXIBLE AC TRANSMISSION SYSTEMS

COURSE OUTCOME

1 Discuss about various FACTS devices used in Reactive power control
2 Apply the characteristics of static VAR compensator reactive power control applications
3 Make use of different modes of operation of TCSC for stability studies
4 Investigate the characteristics of voltage source converter based FACTS controllers
5 Correlate the interaction between various FACTS controller using linear control & genetic algorithms

COURSE CODE & NAME: C412 - 1703EE018&POWER ELECTRONICS FOR RENEWABLE ENERGY SYSTEMS

COURSE OUTCOME

1 List the various renewable energy sources and its impacts like wind, ocean, biomass, fuel cell, and hydrogen and hybrid energy system
2 Describe the applications of various generators & power converters like PWM Inverters, Buck Boost converter, AC voltage controller and matrix inverter in solar and WECS
3 Explain the need of hybrid energy systems and its impacts with case studies
4 Explain the stand-alone and grid interactive issues related with solar & WECS.
5 Illustrate P&O, INC and Hybrid algorithms for solar system

COURSE CODE & NAME: C413 - 1703EE019&ELECTRICAL ENERGY GENERATION UTILIZATION AND CONSERVATION

COURSE OUTCOME

1 Recall the tractive effort for the propulsion of train, traction motors, characteristics of traction motor control, track equipment and collection gear.
2 Explain the different light sources and various illumination systems for the lighting schemes
3 Discuss the different methods of electric heating and types of electric welding schemes employed in industries.
4 Explain the concept of solar radiation and Physical principles of the conversion of solar radiation into heat.
5 Describe the aerodynamic forces acting on the blade and basic components of a WECS.
6 Discuss the performance of a flat plate collector and cylindrical parabolic concentrating collector.

E.G.S. PILLAY ENGINEERING COLLEGE (AUTONOMOUS)

NAGAPATTINAM – 611 002. TAMILNADU, INDIA

Approved by AICTE, New Delhi, Affiliated to Anna University, Chennai

(Accredited by NAAC with 'A' Grade and NBA)

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COURSE CODE & NAME: C414 - 1704EE851 & PROJECT – VIVA VOCE

COURSE OUTCOME

1. Formulate a real world problem, identify the requirement and develop the design solutions
2. Identify technical ideas, strategies and methodologies
3. Utilize the new tools, algorithms, techniques that contribute to obtain the solution of the project
4. Perform test and validate through conformance of the developed prototype
5. Analysis the cost Effectiveness of the project
6. Explain the acquired knowledge through preparation of report and oral presentations