

Aditya Nagar, ADB Road, Surampalem - 533 437

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

1. Course Outcomes of B. Tech. EEE First Year – First Semester

Course Name with Code	CO No.	Course Outcome
	C111.1	Identifying the life of people, culture and tradition interpreting the information, speaking English
	CIII.I	to elicit information, identifying the vocabulary and Nouns
	C111.2	Understanding the responsibility and values, conversing for expressing greetings and leave takings, usage of articles, prepositions
Communicative English (C111)	C111.3	Remembering life and contributions of Stephen Hawking discuss about specific topics practice letter writing, CVs, E-mail etiquette, application of verb forms
	C111.4	Understanding the life of Wangari Maathai, Role plays, use of adjectives, adverbs, & vocabulary
	C111.5	Understanding way of life, technical writing and presentation, vocabulary common errors
	C111.6	Understanding soft skills, recognize Scientific and Technical English
	C112.1	Utilize mean value theorems to real life problems
	C112.2	To be able to form differential equation from some physical problems and to solve various first order differential equations.
Mathematics -I	C112.3	Solve the differential equations related to various engineering fields
(C112)	C112.4	Familiarize with functions of several variables which is useful in optimization
	C112.5	Apply double integration techniques in evaluating areas bounded by region
	C112.6	Students will also learn important tools of calculus in higher dimensions. Students will become familiar with 2- dimensional and 3-dimensional coordinate systems
	C113.1	Solve the system of linear algebraic equations using Matrix techniques
	C113.2	Determine the Eigen values and Eigen vectors of a system represented by a matrix
	C113.3	Compute the roots of algebraic and transcendental equations using iterative methods
Mathematics -II	C113.4	Apply various interpolation methods to estimate the unknown values from a known data value
(C113)	C113.5	Apply numerical integral techniques to different Engineering problems
	C113.6	Solve the ordinary differential equations of first order with initial conditions using numerical techniques
	C114.1	To write algorithms and to draw flowcharts for solving problems, converts both to C program finally compile and debug the programs.
Programming	C114.2	To use different operators, data types and write programs that use two-way/ multi-way selection.
for Problem	C114.3	To select the best loop construct for a given problem
Solving using C	C114.4	To design and implement programs to analyze the different pointer applications
(C114)	C114.5	To decompose a problem into functions and to develop modular reusable code
	C114.6	To apply File, I/O operation
	C115.1	Articulate better pronunciation through stress or word accent, intonation, and rhythm.
English Communication	C115.2	Acting out about a consistent accent and intelligibility in their pronunciation of English by providing an opportunity for practice in speaking.
Skills Lab	C115.3	Experimenting the fluency in spoken English and neutralize mother tongue influence
(C115)	C115.4	Mind Mapping of the students to a variety of self-instructional and learner-friendly modes of language learning.
Electrical	C116.1	Ability to interpret and discuss the difference, the limitations, tolerances, safety aspects of electrical systems and wiring.
Engineering Workshop (C116) Programming for Problem Solving using C Lab (C117)	C116.2	Ability to Select wires/cables and other accessories used in different types of wiring.
	C116.3	Ability to Construct and evaluate the performance of simple lighting and power circuits
	C116.4	Ability to demonstrate the usage of measuring equipment
	C116.5	Ability to impart methods in electrical machine wiring
	C117.1	Gains Knowledge on various concepts of a C language.
	C117.2	Able to draw flowcharts and write algorithms.
	C117.3	Able design and development of C problem solving skills.
	C117.4	Able to design and develop modular programming skills.
	C117.5	Able to design and develop file programming skills
	C117.6	Able to trace and debug a program



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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

2. Course Outcomes of B. Tech. EEE First Year – Second Semester

Mathematics-II (C121) Mathematics-II (C121) Model physical phenomena of a given periodic function by Fourier series in the given interval. C121.4 Solve engineering problems using Fourier Transforms and Inverse Fourier Transforms C121.5 Apply a range of techniques to solve first and second order linear partial differential equatic company of the physical phenomena of Heat and Wave equations by using Partial differential equatic company of the physical phenomena of Heat and Wave equations by using Partial differential equatic company of the physical phenomena of Heat and Wave equations by using Partial differential equatic company of the physical phenomena of Heat and Wave equations by using Partial differential equatic company of the property of the construction and working principles of various types of lasers I dentify the role of Schrodinger's time independent wave equation in engineering company of the property of the construction and working principles of various types of lasers I dentify the type of semiconductor and charge carriers using Hall effect C122.6 Identify the type of semiconductor and charge carriers using Hall effect C123.1 Linked lists for stacks, queues. C123.2 Complexity of algorithms and strings as Abstract data types C123.3 Linked lists for stacks, queues and for other applications. C123.4 Traversal methods in the Trees. C123.5 Various algorithms available for the graphs. C123.5 Various algorithms available for the graphs. C123.5 Sorting and searching in the data retrieval applications. C124.4 Apply Mesh analysis in an electrical network. C124.5 Linked lists for stacks, queues and for other applications. C124.6 Linked lists for stacks, queues and for other applications. C124.6 Linked lists for stacks. Queues. C124.	Course Name with Code	CO No.	Course Outcome
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C129.6 To understand the central and state relation financial and administrative			



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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

3. Course Outcomes of B. Tech. EEE Second Year – First Semester

Course Name with Code	CO No.	Course Outcome
Electrical Circuit Analysis – II (C211)	C211.1	Analyze three-phase balanced and unbalanced circuits and determine line voltages, line currents, phase voltages and phase currents
	C211.2	Analyze the transient response of series and parallel R, L, & C circuits for DC & AC excitations
	C211.3	Analyze Two port network parameters for given electrical circuits
	C211.4	Apply Fourier Series to electrical circuits excited by non-sinusoidal sources
	C211.5	Apply Fourier Series to electrical circuits excited by non-sinusoidal sources
	C211.6	Analyze different harmonics components from the response of an electrical network.
	C212.1	Evaluate the concepts of electromechanical energy conversion
	C212.2	Analyze the ill-effects of armature reaction and improve commutation in dc machines
Electrical	C212.3	Analyze the torque production mechanism and control the speed of dc motors.
Machines-I	C212.4	Analyze the performance of single-phase transformers.
(C212)	C212.5	Calculate regulation, losses, and efficiency of single-phase transformers
	C212.6	Analysis of Parallel transformers, control voltages with tap changing methods and achieve three- phase to two-phase transformation
	C213.1	Interpret the characteristics of semiconductor diodes.
F1 (C213.2	Compare the characteristics of rectifiers with and without filters.
Electronic	C213.3	Summarize the characteristics of BJT in different configurations.
Devices and Circuits (C213)	C213.4	Analyze the Field Effect Transistor characteristics and its applications
Circuits (C213)	C213.5	Apply biasing methods for stabilization of BJT and FET amplifiers.
	C213.6	Interpret small signal low frequency equivalent models of BJT and FET.
	C214.1	Ability to calculate Electric field, potential, Capacitance and Energy stored in Dielectrics using Gauss's law, Laplace's and Poisson's Equations
Electro	C214.2	Ability to find magnetic field intensity and to calculate magnetic Force, Torque, Self and Mutual Inductance and Energy stored in magnetic field.
Magnetic Fields	C214.3	Knowledge of Time varying fields, Displacement Current and Pointing Vector.
(C214)	C214.4	Students can calculate the magnetic forces and torque produced by currents in magnetic field.
	C214.5	Will the able to calculate self and mutual inductances and the energy stored in the magnetic field.
	C214.6	Students will gain knowledge on time varying fields and get ability to calculate induced emf.
	C214.0	Concepts of displacement current and Pointing vector and associated problems are solved
	C215.1	Interpret the working principle and various components of IC engine
Thermal and	C215.2	Discuss the basic principles of vapor power cycles
Hydro Prime	C215.3	Analyze the performance of the steam nozzles and steam turbines in a steam power plant
Movers (C215)	C215.4	Demonstrate the performance of an IC engine and gas turbine based on the performance.
1110 (615 (6215)	C215.5	Compare and contrast different types of pumps and their performance
	C215.6	Compare and contrast different types of turbines and their performance
	C216.1	Enumerate the concepts of Economics, Demand, and its Forecasting methods
Managerial	C216.2	Understanding the relationship among inputs, output, nature of cost, cost combinations.
Economics & Financial	C216.3	State the nature of Markets, its structure, Price- Output decisions under different market structures & pricing strategies
Analysis	C216.4	Identify various types of organizations and their characteristics based on ownership
(C216)	C216.5	Illustrate financial statements by using various accounting tools
	C216.6	Discuss various methods to select a financial proposal by using capital budgeting methods
	C217.1	Evaluate the performance of various IC engines
Thermal and Hydro Lab (C217)	C217.2	Sketch the port/valve diagram of IC engines
	C217.3	Explain procedure for standardization of experiments.
	C217.4	Evaluate the performance of various flow measuring devices
	C217.5	Determine the friction coefficient and loss of head in a pipeline
	C217.6	Test for the performance of pumps and turbines
Electrical Circuits Lab (C218)	C218.1	Apply various Network theorems
	C218.2	Determine Choke coil parameters
	C218.3	Able to calculate the Resonance for RLC circuits
	C218.4	Able to determine parameters for two port networks
	C218.5	Determine the self and mutual inductances of a magnetic fields
	C218.6	Able to measure three phase active power for poly phase circuits



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4. Course Outcomes of B. Tech. EEE Second Year – Second Semester

Course Name with Code	CO No.	Course Outcome
Electrical Measurements &	C221.1	Choose right type of instrument for measurement of ac and dc Electrical quantities.
	C221.2	Choose right type of instrument for measurement of power and power factor.
	C221.3	Select right type of bridge for measurement of R, L, C, and G
Instrumentation	C221.4	Understand the effectiveness of Transducer
(C221)	C221.5	Understand the various types of Digital Meters.
(C221)	C221.6	Apply digital techniques to measure voltage, frequency, and speed
	C222.1	Construction of AC Machines
Electrical	C222.2	Explain the operation and performance of three phase induction motor.
Electrical Machines-II	C222.3	Analyze the torque-speed relation, performance of induction motor and induction generator.
(C222)	C222.4	Derive the EMF equation of synchronous generator
(C222)	C222.5	Compare the starting of single-phase induction motors and synchronous motor
	C222.6	Perform winding design and predetermine the regulation of synchronous generators.
	C223.1	Able to differentiate various types of number systems & can detect and correct the errors.
	C223.2	Able to solve the Boolean expressions using various minimization techniques
Digital	C223.3	Able to design and realize a given combinational logic circuit using minimization techniques
Electronics	C223.4	Able to design and realize a given PLD using minimization techniques.
(C223)	C223.5	Able to discriminate and design various types of sequential circuits using flip-flops, registers, and counters.
	C223.6	Able to design various types of sequential circuits using state diagram and state reductions.
	C224.1	Evaluate the transfer function model for physical systems and control system components
	C224.2	Analyze the time response of systems and steady state errors
Control	C224.3	Determine the absolute and relative stability of a system using RH and root loci concepts.
Systems (C224)	C224.4	Use the basic knowledge in obtaining the open, and closed loop frequency responses of systems
	C224.5	Explain the stability analysis and types of compensators
	C224.6	Describe the state variable representation of physical system and solve the state equation
	C225.1	Ability to understand the different components of thermal power plants
	C225.2	Ability to understand the different components of nuclear Power plants
	C225.3	Ability to distinguish between AC & DC distribution systems and estimate voltage drops in both types of distribution systems
Power Systems	C225.4	Ability to analyze the location of different components of an air and gas insulated substations
– I (C225)	C225.5	Ability to identify single core and multi core cables with different insulating materials
	C225.6	Ability to analyze the effect of load factor, demand factor and diversity factor on the cost of generation of electrical power and able to identify the types of tariffs applicable to consumers based on their load demand
	C226.1	Categorize the signals and systems.
	C226.2	Examine the harmonic components present in the continues time signals using Fourier series.
Signal and	C226.3	Analyze the LTI systems in Frequency domain using Fourier Transform.
Systems (C226)	C226.4	Apply Laplace Transform on the continues time signals and systems.
	C226.5	Determine the Discrete time signals from continues time signals.
	C226.6	Apply Z Transform on the discrete time signals and systems.
	C227.1	Predetermine the regulation, Performance & efficiency on DC machine
	C227.2	No load and load the DC Machine to obtain the characteristics, torque, output and efficiency
Electrical Machines-I Lab (C227)	C227.3	Control the speed of DC shunt motor by using armature control and field control methods.
	C227.4	Separate the various losses present in DC shunt motor and single-phase transformer
	C227.5	Predetermine the regulation and efficiency for a single-phase transformer
	C227.6	Converting three phase sources to two phase sources
	C227.0	Experiment and characterize the two terminal devices.
Electronic Devices and Circuits Lab (C228)	C228.2	Construct a Rectifier circuit with and without filter
	C228.2	Examine the characteristics of BJT and FET
	C228.3	Demonstrate the operation of CRO
	C228.4 C228.5	Experiment and characterize the UJT.
	C228.5 C228.6	*
	C228.0	Analyze the frequency response characteristics of BJT and FET



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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

5. Course Outcomes of B. Tech. EEE Third Year – First Semester

Course Name with Code	CO No.	Course Outcome
	C311.1	Able to Compute the transmission line parameters
	C311.2	Able to estimate the performance of a short and medium transmission lines, and its Modeling
Power Systems- II (C311)	C311.3	Able to estimate the performance of a long transmission line and its Modeling
	C311.4	Able to analyze the effect of travelling waves on transmission lines.
	C311.5	Able to explain various factors affecting the performance of transmission lines and power factor
	C311.6	Calculate sag /tension of transmission line and performance of line insulators
	C312.1	Describe solar radiation, extraterrestrial radiation, radiation on earth's surface and tilted surface
	C312.2	Analyze the performance of solar collectors, and solar thermal systems
Renewable	C312.3	Illustrate the characteristics of solar PV systems and techniques
Energy Sources	C312.4	Demonstrate the performance of wind energy systems and MPPT in wind energy systems
(C312)	C312.5	Discuss the working and principle of Hydro and Tidal systems
	C312.6	Classify the Biomass, Fuel cells and Geothermal systems
	C313.1	Categorize the signals and systems.
	C313.1	
G: 1 1		Examine the harmonic components present in the continues time signals using Fourier series.
Signals and	C313.3	Analyze the LTI systems in Frequency domain using Fourier Transform.
Systems (C313)	C313.4	Apply Laplace Transform on the continues time signals and systems.
	C313.5	Determine the Discrete time signals from continues time signals.
	C313.6	Apply Z Transform on the discrete time signals and systems.
	C314.1	Analyze the concept of linear wave shaping circuits
	C314.2	Analyze the concept of nonlinear wave shaping circuits
Pulse & Digital	C314.3	Describe the switching characteristics of Diode and Transistor
Circuits (C314)	C314.4	Analysis and design of different types of Multivibrators.
	C314.5	Describe the functioning of Time base generators
	C314.6	Discuss the working and characteristics of Logic families and Sampling gates
	C315.1	Analyze the characteristics of various power semiconductor devices
	C315.2	Design firing circuits for SCR.
Power	C315.3	Analyze the operation of different types of AC-DC converters.
Electronics	C315.4	Analyze the operation of different types of DC-DC converters.
(C315)	C315.5	Explain inverters and application of PWM techniques for voltage and harmonic issues.
	C315.6	Analyze the operation of AC-AC regulators.
	C316.1	Calculate efficiency by conducting direct and indirect tests on induction motor.
	C316.2	
Electrical		Predetermine regulation of alternator by E.M.F, M.M.F, Z.P.F methods and performance curves.
Machines-II	C316.3	Sketch V and Inverter V Curves of a three-phase synchronous motor.
LAB (C316)	C316.4	Determine Xd and Xq of a salient pole synchronous machine.
	C316.5	Control the speed of the single-phase induction motor and to obtain equivalent circuit.
	C316.6	Improve the power factor of single-phase induction motor and to obtain its performance.
	C317.1	Able to analyze the behavior of second order system with time domain specifications.
Control	C317.2	Able to design different controllers
Systems Lab (C317)	C317.3	Able to evaluate stability of LTI system using bode plot.
	C317.4	Able to determine controllability and observability of given system.
	C317.5 C317.6	Able to derive the transfer function of different physical systems Able to evaluate stability of LTI system using Nyquist plot.
	C317.6	Understand the correct function of electrical parameters
Electrical Measurements Lab (C318)	C318.1	Demonstrate the calibration of electrical parameters voltage, current
	C318.2	Measure the electrical quantities power, energy
		Measure electrical characteristics of resistance, inductance, and capacitance of a circuits through
	C318.4	appropriate methods
	C318.5	Test transformer oil for its effectiveness
	C318.6	Analyze the parameters of inductive coil
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6. Course Outcomes of B. Tech. EEE Third Year – Second Semester

Course Name with Code	CO No.	Course Outcome
Power	C321.1	Able to explain the fundamentals of electric drive and different electric braking methods.
	C321.2	Able to analyze the operation of three phase converter-controlled dc motors and four quadrant operation of dc motors using dual converter
Electronic	C321.3	Able to analyze the converter control of dc motors in various quadrants
Controllers & Drives (C321)	C321.4	Able to analyze the concept of speed control of induction motor by using AC voltage controllers and voltage source inverters.
	C321.5	Able to analyze the principles of static rotor resistance control and slip power recovery schemes.
	C321.6	Able to analyze the speed control mechanism of synchronous motors.
	C322.1	Ability to discuss various components of power system and to draw reactance diagram.
	C322.2	Ability to evaluate steady state power flow analysis of power system using iterative methods
Power System	C322.3	Ability to Formulate Z-bus for a given power system network.
Analysis (C322)	C322.4	Ability to analyze symmetrical faults.
	C322.5	Ability to and analyze unsymmetrical faults using symmetrical components.
	C322.6	Ability to analyze stability of power system.
	C323.1	Describe the architecture and organization of Microprocessor (8086)
Micro	C323.2	Describe the maximum and minimum modes of 8086
Processors and	C323.3	Demonstrate the concept of interfacing MP and I/O using ICs and their functioning
Micro	C323.4	Describe the architecture and organization of Microcontroller (8051)
Controller (C323)	C323.5	Discuss the architecture of PIC
(C323)	C323.6	Develop programming in C for PIC
	C324.1	Summarize the properties, interfaces, and behaviors of basic abstract data types
	C324.2	Summarize the properties, interfaces, and behaviors of basic abstract data types
Data Structures	C324.3	Illustrate the computational efficiency of the principal algorithms for sorting & searching
(C324)	C324.4	Develop arrays, records, linked structures, stacks, queues, trees, and Graphs in writing program
()	C324.5	Develop different methods for traversing trees
	C324.6	Develop different methods for traversing trees
	C325.1	Able to Understand energy efficiency, scope, conservation, and technology
Energy Audit	C325.2	Able to Design energy efficient lighting systems
and	C325.3	Able to estimate power factor of systems and propose suitable compensation techniques.
Conservation &	C325.4	Able to Understand space heating and ventilation methods.
Management	C325.5	Able to calculate life cycle costing and return on investment on energy efficient technologies.
(C325)	C325.6	Able to Understand the concepts and compute the economic aspects of energy consumption
	C326.1	Design the gate drive circuits of SCR, IGBT and MOSFET and study their characteristics.
	C326.2	Analyze the performance of single-phase half and fully controlled.
Power	C326.3	Analyze the performance three phase full wave converter with resistive load.
Electronics Lab	C326.4	Analyze the operation of single phase and three phase AC voltage regulator.
(C326)	C326.5	Design the Buck and Boost converter in CCM and DCM and verify their voltage gain.
	C326.6	Analyze the operation of single phase PWM inverters.
	C327.1	Demonstrate Arithmetic operations on Multibyte and ASCII Numbers using MASM
) <i>(</i> '	C327.1	Demonstrate Logical and Shift operations on BCD and ASCII Numbers using MASM
Microprocessors and Microcontrollers Lab (C327)	C327.3	Develop programs on String operations using MASM
	C327.4	Develop programs for Interfacing 8086 with 8255,8259 and 8279 using MASM
	C327.5	Demonstrate parallel and serial communication using 8051
Data Structures Lab (C328)	C327.6	Develop programs for interfacing PIC 18 with I/O devices Develop skills to design and applying simple linear and poplinger data structures
	C328.1	Develop skills to design and analyze simple linear and nonlinear data structures
	C328.2	Perform practical applications of data structures
	C328.3	Strengthen the ability to identify and apply the suitable data structure
	C328.4	Apply the linear / non-linear data structure operations based on the user needs
	C328.5	Gain knowledge in practical applications of data structures
	C328.6	Express the Engineering activities with effective presentation and report.



Aditya Nagar, ADB Road, Surampalem - 533 437

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

7. Course Outcomes of B. Tech. EEE Fourth Year – First Semester

Utilization of Electrical Call.2 Analyze the Principles and methods of electric heating and welding. Call.3 Examine the laws of illumination and their application for various lighting schemes. Call.4 Estimate the illumination levels produced by various Sources and design different lightning systems by taking inputs. Call.4 Estimate the illumination levels produced by various Sources and design different lightning systems by taking inputs. Call.5 Estimate the illumination levels produced by various Sources and design different lightning systems by taking inputs. Call.6 Estplain mechanics of Train movement and associated calculations. Call.6 Estplain mechanics of Train movement and associated calculations. Call.2 Call.2 Describe the measuring techniques of performance parameters of differential amplifiers. Call.2 Call.2 Describe the measuring techniques of performance parameters of differential amplifiers. Call.2 C	Course Name with Code	CO No.	Course Outcome
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Aditya Nagar, ADB Road, Surampalem - 533 437

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

8. Course Outcomes of B. Tech. EEE Fourth Year - Second Semester

Course Name with Code	CO No.	Course Outcome
	C421.1	Able to distinguish the advantages of discrete time and continuous time signals
	C421.2	Able to explain z–transformations and their role in the mathematical analysis.
Digital Control	C421.3	Able to analyze the stability criterion for digital systems and methods adopted for testing.
Systems (C421)	C421.4	Able to analyze the conventional and state–space methods of design are also introduced.
	C421.5	Able to design the discrete–time control systems by conventional methods.
	C421.6	Able to design the state feedback controller through pole placement.
	C422.1	To Know basic concepts, types, and modern trends in HVDC
HWDC	C422.2	Able to analyze configuration and performance of HVDC converters
HVDC Transmissions	C422.3	Able to Know various schemes to control converters
(C422)	C422.4	Able to know reactive power controls and modelling of converters.
(C+22)	C422.5	Able to protect the converters, and formulate characteristics of harmonics
	C422.6	Able to design the different filters for HVDC transmission.
	C423.1	Analyze the classification of distribution systems
T214 1	C423.2	Discuss about various substations and feeders
Electrical Distribution	C423.3	Evaluate voltage drop and line loss calculations
Systems (C423)	C423.4	Understand the protection and its coordination techniques
Systems (C423)	C423.5	Determine the causes of low power factor and methods to improve power factor
	C423.6	Evaluate voltage regulating equipment to improve voltage profile
	C424.1	Able to determine power flow control in transmission lines by using FACTS Controllers
Flexible Alternating Current	C424.2	Able to explain operation and control of voltage source converter
	C424.3	Able to discuss compensation methods to improve stability and reduce power oscillations in the transmission lines.
Transmission	C424.4	Able to explain the methods of shunt compensation by using static VAR compensators
Systems (C424)	C424.5	Able to analyze the methods of compensation by using series compensators
	C424.6	Able to explain the operation of modern power electronics controllers (UPFC&IPFC)