



SANTHIRAM ENGINEERING COLLEGE :: NANDYAL

Approved by AICTE, New Delhi: Permanently Affiliated to JNT University, Anantapuramu,

An ISO 9001:2015 Certified Institution

Recognition of the college under 2 (f) & 12 (B) of the UGC ACT, 1956

NH-40, Nandyal – 518501 :: Kurnool Dist. A.P.

Department of Electrical & Electronics Engineering

Year	CODE	SUB	Faculty Name	CO'S
II-I	19A54302	Complex Variables & Transforms	Dr.Seshaiah	<ol style="list-style-type: none"> 1. Understand the analyticity and harmonic property of complex functions 2. Understand the integration of complex functions and Evaluate improper integrals of complex functions using Residue theorem. 3. Understand the concept of Laplace transform of standard, general and some special functions 4. Understand and expand the function in Fourier series 5. Understand and apply the concepts of Fourier and Z transforms
II-I	19A02301T	Basic Electrical Circuits	UM Sandeep kumar	<ol style="list-style-type: none"> 1. To know about the basic characteristics of R, L, C parameters, their voltage and current relations and various combination of these parameter. 2. Understand and Analyze the voltage, current and Power relations and fundamental concepts of 1-Phase AC Circuits 3. To analyze of three phase balanced and unbalanced circuits and to measure active and reactive power in three phase circuits 4. Apply the network theorems suitably 5. Study of Network topology, Analysis of Electrical Networks, Duality and Dual Network
II-I	19A02302	Power System Architecture	V.Ramanjaneyulu	<ol style="list-style-type: none"> 1. Remember and understand the concepts of conventional power generating systems. 2. Remember and understand the concepts of nonconventional power generating systems. 3. Obtain the transmission line parameters for different types of lines and also for symmetrical and asymmetrical single and three phase, single and double circuit lines. 4. Obtain the classification of transmission lines and A,B,C,D constants for transmission lines, need of shunt compensation. 5. Compare DC vs AC and Under-Ground vs Over - Head Distribution Systems, types of Distribution Systems and Learn Substation and types of Substations, Various arrangements in Substations.
II-I	19A02303T	DC Machines & Transformers	M.Siva Sanker	<ol style="list-style-type: none"> 1. Analyze the electro mechanical energy conversion process by magnetic and electric fields. 2. Analyze the DC generators and their applications 3. To analyze the DC motors characteristics and their applications. 4. To describe the equivalent circuit of the transformer, and determine the performance and regulation. 5. To analyze the three phase transformers and tap changing transformers in terms of their connection, phase conversion.



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II-I	19A04306T	Semiconductor Devices and Circuits	Mr.P.Rambabu	<ol style="list-style-type: none"> 1. Explain the concept of PN junction diode and apply concept to developing rectifiers. 2. Study the characteristics of special purpose diodes and BJT with characteristics. 3. Learn the concept of biasing and its temperature stability and compensation. Apply transistor hybrid model to calculate h-parameters. 4. Know the concept of Miller's and dual of Miller's theorems and Apply the concept of BJT to develop amplifier circuits and also analyze the simplified hybrid model of transistor in various configurations 5. Learn the characteristics of JFET, MOSFET and UJT and Apply the characteristics of FETs and UJT to develop engineering solutions.
II-I	19A04304	Digital Electronics and Logic Design	Sreenivasa Rao N	<ol style="list-style-type: none"> 1. To understand and analyze the different types of number systems, Boolean algebra, its simplification and K – map and tabular simplification techniques 2. Apply Boolean algebra for describing combinational digital circuits, various Combinational logic circuits such as decoders and multiplexers. 3. Design synchronous sequential circuits using flip flops and construct digital systems using components such as registers and counters 4. Design the different types of RAM & ROM, Programmable Logic Devices. 5. Summarize significance of various TTL , I²L, ECL and CMOS subfamilies. 6. analyze the characteristics of digital ICs such as speed, power dissipation, figure of merit, fan-out, noise immunity etc. and bipolar and MOS logic families.
II-I	19A99302	Biology For Engineers	Dr. M.Swarna Kumari	<ol style="list-style-type: none"> 1. Explain about cells and their structure and function. Different types of cells and basics for classification of living Organisms. 2. Explain about biomolecules, their structure and function and their role in the living organisms. How biomolecules are useful in Industry. 3. Briefly about human physiology. 4. Explain about genetic material, DNA, genes and RNA how they replicate, pass and preserve vital information in living Organisms. 5. Know about application of biological Principles in different technologies for the production of medicines and Pharmaceutical molecules through transgenic microbes, plants and animals.



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II-II	19A54401	Numerical Methods & Probability Theory	Dr.B.Haritha	<ol style="list-style-type: none"> 1. Students can able to get the knowledge on calculate the roots of equations using various numerical methods. 2. Understand the concept of interpolation using Newton,Gauss and Lagranges formulae. 3. Evaluation of integrals by numerical methods and solution of differential equations by numerical methods 4. Understand the concept of probability. 5. Understand various probability distributions and calculate their statistical constants.
II-II	19A02401T	Electrical Circuit Analysis	UM Sandeep kumar	<ol style="list-style-type: none"> 1. Understand and analyze the locus diagram, occurrence of resonance in RLC circuits for different configurations and evaluate the quality factor and bandwidth of the resonant circuit configurations. 2. Understand and evaluate the network parameters for different two port networks. 3. Analyze and evaluate the transient responses of RLC networks with DC and AC excitations by using classical and Laplace transform approach. 4. Understand the properties of Fourier series and transforms and apply the Fourier transforms to the Electrical circuits for non-sinusoidal periodic and non-periodic waveforms. 5. Understand different types of filters, Attenuators and Equalizers and their characteristics, and design the Filter circuits, Attenuator circuits and Equalizer circuits based on the application requirement.
II-II	19A02402	Engineering Electromagnetics	M.YerriVeeresh	<ol style="list-style-type: none"> 1. The knowledge to understand the concepts of electrostatic charges and its field's analysis. 2. To analyze the behavior of conductors and dielectrics under the influence of electrostatic fields. 3. Capable to understand the concepts of magnetostatic charges and its field's analysis. 4. Able to analyse the and design various types of inductors and concept of magnetic potential. 5.To understand the knowledge of time varying electromagnetic fields by maxwell's equations and uniform plane & wave equations.
II-II	19A02403	Power Electronics	K.RajaSekhara Reddy	<ol style="list-style-type: none"> 1 Understand the operation, characteristics and usage of basic Power Semiconductor Devices 2 Understand different types of Rectifier circuits with different operating conditions. 3 Understand DC-DC converters operation and analysis of their characteristics. 4 Understand the construction and operation of voltage source inverters 5 Understand the construction and operation of Voltage Controllers and Cyclo Converters.



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II-II	19A04405	Analog Electronic Circuits	T.Nagamani	<ol style="list-style-type: none"> 1. List various types of amplifiers & Explain the operation of various electronic circuits and linear IC s 2. Apply various types of electronic circuits to solve engineering problems 3. Analyse various electronic circuits and regulated power supplies for proper understanding 4. Justify choice of transistor configuration in a cascaded amplifier. 5. Design electronic circuits for a given specification
II-II	19A05304T	Python Programming	G. Vara Prasad	<ol style="list-style-type: none"> 1. Demonstrate the fundamentals of Python Programming and Solve the problems by applying Modularity Principles of Python. 2. Evaluate Conditional Execution and Applying recursions to solve problems. 3. Use Data structures to enhance the execution and Designing programs for string operations. 4. Applying object oriented concepts and Organize data in the form of files. 5. Illustrate the principles of inheritance and Define classes and its features.
II-II	19A99301	Environmental Science	R. Ramadevi	<ol style="list-style-type: none"> 1. Grasp multidisciplinary nature of environmental studies and various renewable and nonrenewable resources. 2. Understand flow and bio-geo- chemical cycles and ecological pyramids. 3. Understand various causes of pollution and solid waste management and related preventive measures 4. About the rainwater harvesting, watershed management, ozone layer depletion and waste land reclamation 5. Cases of population explosion, value education and welfare programmes
II-II	19A52301	Universal Human Values	Mr. A.G. Venkateswarlu	<ol style="list-style-type: none"> 1. Students are expected to become more aware of themselves, and their surroundings (family, society, nature) 2. They would become more responsible in life, and in handling problems with sustainable solutions, while keeping human relationships and human nature in mind. 3. They would have better critical ability. 4. They would also become sensitive to their commitment towards what they have understood (human values, human relationship and human society). 5. It is hoped that they would be able to apply what they have learnt to their own self in different day-to-day settings in real life, at least a beginning would be made in this direction.



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III-I	19A02501T	AC Machines	Mr. U.M.Sandeep Kumar	<ol style="list-style-type: none"> 1. To Understand the fundamentals of AC machines, know equivalent circuit performance characteristics 2. To Understand the Construction, operation, starting methods and speed control of three phase induction motors. 3. To Understand the Construction, operation, starting methods of single phase induction motors and Special Machines like Reluctance motor, Steeper motor and BLDC motors. 4. To Understand the Construction, operation, and Synchronization of three Phase alternators 5. To Understand the Construction, operation, starting methods and Hunting phenomenon of of three phase Synchronous motors.
III-I	19A02504	Electrical Machine Design	Mr.S.Seetharamudu	<ol style="list-style-type: none"> 1. To know about various principles of design, rating based on the heating and cooling of electrical machines 2. To understand about the design aspects of dc machines 3. To understand about overall designing of 1- transformer 4. To know about designing of Induction machine along with winding configurations 5. To know about designing of Synchronous machines
III-I	19A52506a	Technical Communication and Presentation	Mrs.Sriliatha	<ol style="list-style-type: none"> 1.To develop awareness in students of the relavance of technical communication 2.To prepare the students for placements 3.To sensitize the students to the appropriate use of non verbal communication 4.To train students to use language appropriately for presentations and interviews 5.To enhance the documentation skills of the students with emphasis on formal and informal writing
III-I	19A02502	Control Systems	Mr. M. Siva Sankar	<ol style="list-style-type: none"> 1. Analyze the fundamentals of control systems and Evaluate the transfer function for physical systems by using differential equation approach, block diagrams and signal flow graphs. 2. Analyze the transient & Steady state responses of a control system for different inputs and evaluate the steady state error. 3. Understanding the concept of stability, Applying R-H criterion and Root locus to evaluate the stability. 4. Understanding the frequency domain specifications, Analyzing the stability by using Bode plots, Nyquist plots, Polar plot and Design of compensators. 5. Understanding the concepts of state space model, analyzing the state model for physical systems by different approaches.
III-I	19A02503d	Wind energy systemsCircuits	Dr.K.RajaSekhara Reddy	<ol style="list-style-type: none"> 1. Able to understand the basic concept of Wind Energy Systems 2. Able to Analyse the fixed speed induction generator to operate wind turbines. 3. Able to Apply the control strategies of DFIG and estimate its performance under different faults 4. Able to Understand the variable speed generators and FRC based wind generators. 5. Able to Analyze the Hybrid Energy Systems



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III-I	19A52601T	English Language Skills	Mr.A.G. Venkate swarulu	<ol style="list-style-type: none">1.Understand the context, topic, and pieces of specific information from social or transactional dialogues spoken by native speakers of English2.Apply grammatical structures to formulate sentences and correct word forms3.Analyze discourse markers to speak clearly on a specific topic in informal discussions4. Evaluate reading/listening texts and to write summaries based on global comprehension of these texts.5.Create a coherent paragraph interpreting a figure/graph/chart/table
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