Department of Electronics and Communication Engineering

A Y: 2018-2019

I Year I Semester

CO No.	Subject: English-I	Taxonomy Level
After completing the course the student shall be able to		
C111.1	Students enhanced communication skills and team work	Applying
C111.2	students can understand the structure of a paragraph	Understanding
C111.3	students will improve self motivation and self esteem	Creating
C111.4	students can apply problem solving adaptability and stress management in their lives	Applying
C111.5	students will learn personal presentation	Analyzing
C111.6	students will develop conversation proficiency	Applying

CO No.	Subject: Mathematics-I	Taxonomy Level
After completing the course the student shall be able to		
C112.1	Find the solutions of first order ordinary differential equations.	Understanding
C112.2	Apply the technique of solving ordinary differential equations in some engineering problems like electrical circuits, simple harmonic motions etc.	Applying
C112.3	Define Laplace transform and inverse Laplace transform of various functions and solve ordinary differential equations using Laplace transform.	Applying
C112.4	Utilize the technique of partial differentiation to find the extreme values of functions of several variables.	Applying
C112.5	Find the solutions of linear and nonlinear partial differential equations of first order.	Understanding
C112.6	Solve the higher order linear partial differential equations.	Understanding

Department of Electronics and Communication Engineering

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CO No.	Subject: Mathematics-II	Taxonomy Level
After completing the course the student shall be able to		
C113.1	Understand the most basic numerical method to solve simultaneous linear equations.	Understanding
C113.2	Define interpolation and compute interpolating polynomial from the given data using interpolating formula.	Remembering
C113.3	Solve differential equations numerically using numerical methods.	Applying
C113.4	Understand the basic concepts of complex function and analytic functions using C-R equations.	Remembering
C113.5	Make use of Cauchy's theorem and Cauchy's Integral theorem to evaluate complex integration.	Applying
C113.6	Make use of residues to evaluate complex integration.	Applying

CO No.	Subject: Applied Physics	Taxonomy Level
After completing the course the student shall be able to		
C114.1	Explain the properties of light supporting the wave nature and working of optical instruments	Understanding
C114.2	Apply Lasers in scientific research and engineering by developing knowledge on basic principle in the working of Lasers & optical fibers.	Applying
C114.3	Describe the concept of Electrical or Electronic gadgets and their performance under E- or H- fields.	Understanding
C114.4	Explain the concept of Acoustics of Buildings, and the behavior of materials in the external magnetic and electric fields and physical significance of Maxwell's equations.	Understanding
C114.5	Explain the concept of matter waves, free electron theory and origin of energy band formation in solids .	Understanding
C114.6	Explain the intrinsic and extrinsic semiconductors ,drift ,diffusion currents in semiconductors.	Understanding

Department of Electronics and Communication Engineering

A Y: 2018-2019

CO No.	Subject: Computer Programming	Taxonomy Level
After completing the course the student shall be able to		
C115.1	Explain the basic terminology used in computer programming	Understanding
C115.2	Discuss the design of Algorithms, writing and executing programs	Understanding
C115.3	Explain the different data types, selection and Basic loop structures	Understanding
C115.4	Apply the modular programming and recursive solution formulations.	Applying
C115.5	Demonstrate the data representations using arrays.	Applying
C115.6	Implement data structures, dynamic memory, create, update data files	Applying

CO No.	Subject: Engineering Drawing	Taxonomy Level
After completing the course the student shall be able to		
C116.1	Learn the usage of drawing instruments and how to draw Polygons, Engineering Curves and Scales	Remembering
C116.2	Explain about the Orthographic Projections, Projection of Points And Lines	Understanding
C116.3	Solve and draw the projections of straight lines inclined to both the planes	Applying
C116.4	Solve and draw the projection of planes	Applying
C116.5	Solve and draw the projection of solids	Applying
C116.6	Draw the Isometric Views to Orthographic Views and vice versa	Applying

Department of Electronics and Communication Engineering

A Y: 2018-2019

CO No.	Subject: English-Communications Skills Lab-I	Taxonomy Level
After completing the course the student shall be able to		
C117.1	Explain the basic concepts of language useful for pupils in their career	Applying
C117.2	Illustrate the usage of tenses in everyday life.	Understanding
C117.3	Apply the techniques of science through language ability in a practical way.	Applying
C117.4	Make use of grammatical sentences for perfect communication	Creating
C117.5	Analyze the importance of future tense with examples (	Analyzing
C117.6	Find the speaking and writing skills through reading ability of safety measures	Applying

CO No.	Subject: Applied Physics Lab	Taxonomy Level
After completing the course the student shall be able to		
C118.1	Explain the appropriate application of Optics in Newton rings	Understanding
C118.2	Explain the appropriate application of Optics in Diffraction Grating	Understanding
C118.3	Apply the basic concepts of laser and techniques for the optics experiments.	Applying
C118.4	Apply the mathematical concepts/equations to obtain quantitative results.	Applying
C118.5	Explain the basic concepts of semiconductor physics, which are useful to understand the operation of Zener diode and PN junction diode	Understanding
C118.6	Develop basic communication skills through working in groups in performing the laboratory experiments and by interpreting	Evaluating

Department of Electronics and Communication Engineering

A Y: 2018-2019

CO No.	Subject: Engineering Workshop & IT Workshop	Taxonomy Level
— After completing the course the student shall be able to		
C119.1	Identify the different tools and prepare prototypes in the trades of Carpentry and Tinsmithy such as Cross half lap joint, Dove tail joint, rectangular Tray and Open scoop	Applying
C119.2	Identify the different tools and prepare prototypes in the trades of Fitting and Black smithy	Applying
C119.3	Apply the various House Wiring techniques such as connecting one lamp with one switch, connecting one lamp with two switches, connecting a fluorescent tube	Applying
C119.4	Apply the knowledge for computer assembling, software installation and trouble shoot and up gradation of system	Applying
C119.5	Learn MS-office package, internet tools and Apply the tools for preparation of PPT, Documentation and spread sheet etc	Applying

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Department of Electronics and Communication Engineering

A Y: 2018-2019

I Year II Semester

CO No.	Subject: English-II	Taxonomy Level
After completing the course the student shall be able to		
C121.1	Acquire the knowledge of education and how to serve the society accordingly	Remembering
C121.2	Classify the different perspective of science in the sense of a common man and scientist	Understanding
C121.3	Apply the knowledge to adjust ourselves towards the environmental conditions in the society	Applying
C121.4	Create an awareness on the present day and traditional beliefs	Applying
C121.5	Create the awareness on health threats due to climate changes.	Applying
C121.6	Identify the greatness and the hard work of the pioneers and try to inspire in attainting language communication skills	Remembering

CO No.	Subject: Mathematics-III	Taxonomy Level
After completing the course the student shall be able to		
C122.1	Applying analytical and numerical techniques to solve linear system of equations using matrices.	Applying
C122.2	Find the Eigen values and Eigen vectors of the square matrices and discuss the nature of quadratic forms.	Remembering
C122.3	Applying the techniques of multiple integrals to find the areas and volumes.	Applying
C122.4	Find the values of definite integrals using Beta and Gamma functions	Remembering
C122.5	Find the gradient of scalar point functions, divergence and curl of vector point functions. .	Remembering
C122.6	Applying Green's, Stokes and Gauss's divergence theorems to find line, surface and volume integrals. . (Applying) (K3)	Applying

Department of Electronics and Communication Engineering

A Y: 2018-2019

CO No.	Subject: Applied Chemistry	Taxonomy Level
After completing the course the student shall be able to		
C123.1	Differentiate the plastics and rubber materials and their uses	analysing
C123.2	Explain the origin of fuel and their economic advantages and limitations	understanding
C123.3	Explain the working of batteries and its applications	understanding
C123.4	Describe the synthesis of nano materials and green methods	understanding
C123.5	Classify the types of solids and magnetic materials	understanding
C123.6	Discuss the non conventional energy resources and fuel cells	understanding

CO No.	Subject: Electrical & Mechanical Technology	Taxonomy Level
After completing the course the student shall be able to		
C124.1	Explain the principles of electrical law's, principles of operation details of DC machine and transformers	Understanding
C124.2	Analyze the principle and operation of alternator&3-phase Induction motor	Analyzeing
C124.3	Explain the principle & construction of various measuring instruments	Understanding
C124.4	Identify renewable energy sources and their utilization & demonstrate the ability to perform a thermodynamic analysis of Otto, Diesel, and Dual cycle models.	Applying
C124.5	Understand how heat and energy is transferred between the elements of a system for different configurations.	Understanding
C124.6	Understand mechanism of power transfer through belt, rope, chain and gear drives & also functions and operations of machine tools	Understanding

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A Y: 2018-2019

CO No.	Subject: Data Structures	Taxonomy Level
After completing the course the student shall be able to		
C125.1	Find solutions to different problems using arrays.	Understanding
C125.2	Find solutions to different problems using stack and queue	Understanding
C125.3	Perform different operations for storage and retrieval of data on linked lists.	Applying
C125.4	Handle various operations like searching, insertion, deletion, Traversing mechanism etc. on various Trees data structures	Applying
C125.5	Handle various operations like searching, Traversing mechanism etc. on various Graph data structure	Applying
C125.6	Explain concepts of sorting techniques	Understanding

CO No.	Subject: English Communication Skills Lab-II	Taxonomy Level
After completing the course the student shall be able to		
C127.1	Explain the importance of body language	Understanding
C 127.2	Summarize the skill of general English through dialogue	Understanding
C 127.3	Develop short presentations on simple topics	Applying
C 127.4	Summarize training offered to students through Group Discussion	Analyzing
C 127.5	Describe the stand of interview skills through that students will successes	Remembering
C 127.6	Explain the knowledge ability to communicate the needs and requirements of Debate	Understanding

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A Y: 2018-2019

CO No.	Subject: Environmental Studies	Taxonomy Level
After completing the course the student shall be able to		
C126.1	Explain the concepts of the ecosystem and its functions in the environment.	Understanding
C126.2	Summarize the natural resources and their importance for the sustenance of life & need to conserve the natural resources	Understanding
C126.3	Demonstrate the values, threats, conservation practices to protect the biodiversity.	Applying
C126.4	Describe various attributes of the pollution and their impacts and measures to reduce pollution along with waste management practices.	Understanding
C126.5	Evaluate social issues both rural and urban environment and the possible means to combat the challenges, with help of environmental legislations of India	Evaluation
C126.6	Implement Environmental Impact Assessment, Green campus, business, & politics in their daily life	Applying

CO No.	Subject: Engineering Chemistry Laboratory	Taxonomy Level
After completing the course the student shall be able to		
C128.1	describe the experimental skills to design new experiments in engineering	Understanding
C 128.2	explain tge different types of titrations and acquire skills in instrumentation	Understanding
C 128.3	determine hardness of various water sample	Evaluating
C 128.4	determine tge no of free ions and charges in a mixture of acids using conductivity meter	Evaluating
C 128.5	calculate the potential between reference electrode and un known solution by using potentio mete	Understanding

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Department of Electronics and Communication Engineering

A Y: 2018-2019

CO No.	Subject: Computer Programming Lab	Taxonomy Level
After completing the course the student shall be able to		
C129.1	Explain the basic terminology of C programming development environment	Understanding
C129.2	Discuss the design of Algorithms, writing, compiling, debugging and executing Programs.	Understanding
C129.3	Analyzing the complexity of problems and modular programming	Analyzing
C129.4	Understand and apply the in-built and user defined functions for solving problems.	Applying
C129.5	Understand and apply the pointers and memory allocations techniques for solving Problems.	Applying
C129.6	Implement different data structures, and create, update data files	Applying

Coordinator

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of Institutions, VALLURU, A.P 523 272

Department of Electronics and Communication Engineering

A Y: 2018-2019

II Year I Semester

CO No	Subject: Electronic Devices and Circuits	Taxonomy level
Student should be able to		
C211.1	Describe the basic concepts of Semiconductor Physics	Understanding
C211.2	Analyze the operation & V-I characteristics of diodes.	Understanding
C211.3	Design Half Wave & Full Wave Rectifiers with & without filters.	Applying
C211.4	Sketch the characteristics of Transistors.	Understanding
C211.5	Analyze biasing methods, Stabilization and Compensation techniques of Transistors.	Analyzing
C211.6	Analyze the Small Signal Low Frequency Transistor Amplifier models.	Analyzing
CO No	**Subject: Switching Theory &Logic Design**	**Taxonomy level**
Student should be able to		
C212.1	Explain the basics of different number systems, logic operations and codes	Understanding
C212.2	Simplify the Boolean functions using Minimization techniques	Analyzing
C212.3	Design different combinational circuits	Evaluating
C212.4	Develop a PLD for the given Boolean functions	Applying
C212.5	Design different sequential circuits	Evaluating
C212.6	Design FSM's by using sequential circuits	Analyzing
CO No	**Subject: Signals &Systems**	**Taxonomy level**
Student should be able to		
C213.1	Characterize the signals and systems and principles of vector spaces, Concept of orthgonality.	Understanding
C213.2	Analyze the continuous-time signals and continuous-time systems using Fourier series, Fourier transform and Laplace transform.	Analyzing
C213.3	Apply sampling theorem to convert continuous-time signals to discrete-time signal and reconstruct back	Applying
C213.4	Undestand the relationships among the various representations of LTI systems	Understanding
C213.5	Understand the Concepts of convolution, correlation, Energy and Power density and ththspectrum and their relationships.	Understanding
C213.6	Apply z-transform to analyze discrete-time signals and systems.	Applying

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A Y: 2018-2019

CO No	Subject: Network Analysis	Taxonomy level
Student should be able to		
C214.1	Student able to explain the basic network elements and analyze the performance of periodic waveforms	Analyzing
C214.2	Student Will analyze the RLC circuits behavior in detailed	Analyzing
C214.3	Student able to analyze the coupled circuit and resonance	Analyzing
C214.4	Student will apply theorems for electrical circuits both ac and dc	Applying
C214.5	Student Gain the knowledge in characteristics of two port network parameters (Z, Y, ABCD, h & g).	Evaluating
C214.6	Student will analyze the filter design concepts in real world applications.	Analyzing
CO No	**Subject: Random variables & Stochastic Process**	**Taxonomy level**
Student should be able to		
C215.1	Mathematically model the random phenomena and solve simple probabilistic problems.	Understanding
C215.2	Identify different types of random variables and compute statistical averages of these random variables.	Understanding
C215.3	Characterize the random processes in the time and frequency domains.	Applying
C215.4	Analyze the LTI systems with random inputs.	Analyzing
C215.5	Apply these techniques to analyze the systems in the presence of different types of noise.	Applying
C215.6	Understand the difference between time avgs and statistical avg	Understanding
CO No	**Subject: Managerial Economics & Financial Analysis**	**Taxonomy level**
Student should be able to		
C216.1	Relate Economic Principles with Business Practices for getting successful outcomes	Understanding
C216.2	Make use of Cost analysis to find Break Even Point (BEP) of an enterprise in order to avoid losses	Understanding
C216.3	Compare the Price – out determinations under different competitions in the Markets and Pricing strategies	Understanding
C216.4	Interpret different forms of business organizations and the new economic environment in the real business.Interpret different forms of business organizations and the new economic environment in the real business.	Applying
C216.5	Make use of the financial statements and relevant ratios for evaluating company's financial performance to make optimal decisions	Applying
C216.6	Illustrate different Capital Budgeting Methods to estimate the best investment decision in business practices	Understanding

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Department of Electronics and Communication Engineering

A Y: 2018-2019

CO No	Subject: EDC Lab	Taxonomy level
Student should be able to		
C217.1	Identifying of electronic components and electronic equipment	Remember
C217.2	Analyzing characterstics of different diodes and transistors	Understanding
C217.3	Describe application of diode	Applying
C217.4	Analyze the different transmitters and receivers techniques	Understanding
C217.5	Understanding the use of RPS and CRT	Understanding
C217.6	Analyzing experimental data and preparing a lab record	Applying
CO No	**Subject: N&ET Lab**	**Taxonomy level**
Student should be able to		
C218.1	Analyze RLC Circuits And Understand Resonant Frequency And Q-Factor.	Analyzing
C218.2	Determine the Z,Y-parameters	Evaluating
C218.3	Apply network theorems to analyze the electrical network.	Applying
C218.4	Determine the performance of dc shunt machine.	Evaluating
C218.5	Determine the performance of 1-phase transformer.	Evaluating
C218.6	Perform tests on 3-phase induction motor and alternator to determine their performance characteristic	Evaluating

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Department of Electronics and Communication Engineering

A Y: 2018-2019

II Year II Semester		
CO No	**Subject: Electronic Circuit Analysis**	**Taxonomy level**
Student should be able to		
C221.1	Design of small signal high frequency transistor amplifier using BJT and FET.	Analyzing
C221.2	Design of multi stage amplifiers using BJT & FET	Analyzing
C221.3	Apply the concept of feedback to various types of amplifier circuits	Applying
C221.4	Apply the principle of oscillations and to different types of oscillators	Applying
C221.5	Analyse different power amplifiers and their analysis with performance comparison.	Analyzing
C221.6	Analyse different tuned amplifiers based on their performance	Analyzing

CO No	**Subject: Control Systems**	**Taxonomy level**
Student should be able to		
C222.1	Describe concepts of feedback and its advantages to various control systems	Understanding
C222.2	Determine the transfer function for a givensystem using block diagram and signal flow graph methods	Evaluating
C222.3	Analyse the transient and steady state response of control systems.	Analyzing
C222.4	Calculate the stability of a system.	Applying
C222.5	Design compensation networks	Applying
C222.6	Analyze of state variables and state models	Analyzing
CO No	**Subject: Electromagnetic Waves and Transmission Lines**	**Taxonomy level**
Student should be able to		
C223.1	To understand the basic concepts of Electrostatics and magneto statics	Evaluating
C223.2	Acquire the knowledge of Maxwell's equations in Time varying Fields and boundary conditions of electric and magnetic fields	Applying
C223.3	To Learn the basic wave equationsand observe the EM wave characteristics of Different mediums	Analyzing
C223.4	To understand the power flow calculations of EM wave, Reflection and refraction of plane waves	Analyzing
C223.5	Design and Analysis of transmission lines	Evaluating
C223.6	Design and Analysis of Smith chart	Evaluating

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CO No	Subject: Analog Communications	Taxonomy level
Student should be able to		
C224.1	Familiarize with the fundamentals of analog communication systems, Amplitude modulation and demodulation	Understanding
C224.2	Familiarize with various techniques for Frequency modulation and demodulation	Understanding
C224.3	Familiarize with various techniques for analog modulation and demodulation of signals	Understanding
C224.4	Develop the ability to classify and understand various functional blocks of radio transmitters and receivers	Analyzing
C224.5	Distinguish the figure of merits of various analog modulation methods	Analyzing
C224.6	Familiarize with basic techniques for generating and demodulating various pulse modulated signals	Understanding

CO No	Subject: Pulse and Digital Circuits	Taxonomy level
Student should be able to		
C225.1	Design linear wave shaping circuits.	Analyzing
C225.2	Design non-linear wave shaping circuits.	Analyzing
C225.3	Classification of switching circuits and logic families.	Understanding
C225.4	Analysis of different multi vibrators.	Applying
C225.5	Analysis of different synchronization frequency division circuits and sampling gates.	Applying
C225.6	Analysis of different Time base Generators	Applying
CO No	Subject: Management Science	Taxonomy level
Student should be able to		
C226.1	Understand the basic concepts of management scienc	Remembering.
C226.2	Distinguish all functional management.	Understanding
C226.3	Analyze management operations management.	Remembering.
C226.4	Analyze real project management and solve PERT and CPM	Remembering.
C226.5	Understand the management strategic management.	Understanding
C226.6	Discuss contemporary management practices.	Remembering.

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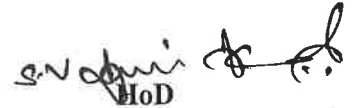
A Y: 2018-2019

CO No	Subject: ECA Lab	Taxonomy level
Student should be able to		
C227.1	Design small signal single stage amplifiers and then observe it's frequency response.	Analyzing
C227.2	Design multi stage amplifiers and then observe it's frequency response.	Analyzing
C227.3	Design feedback amplifiers and then observe it's frequency response.	Analyzing
C227.4	Design an oscillator circuit and calculate it's output frequency.	Analyzing
C227.5	Design power amplifiers and then observe it's frequency response.	Analyzing
C227.6	Design tuned amplifiers and then observe it's frequency response.	Analyzing
C227.7	Understanding the use of RPS and CRT	Analyzing
CO No	Subject: Analog Communications Lab	Taxonomy level
Student should be able to		
C228.1	Analyze the modulation and demodulation techniques of conventional AM scheme.	Analyzing
C228.2	Analyze the modulation and demodulation techniques of conventional DSB & SSB scheme.	Analyzing
C228.3	Analyze the modulation and demodulation techniques of conventional angle modulation scheme.	Analyzing
C228.4	Analyze the different transmitters &receivers techniques.	Analyzing
C228.5	Analyze the circuit diagrams of PLL&AGC.	Analyzing
C228.6	Analyze the different digital modulation and de-modulation techniques.	Analyzing

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Department of Electronics and Communication Engineering

A Y: 2018-2019

CO No.	III Year I Semester	
CO No.	**Subject: Computer Architecture and Organization**	**Taxonomy level**
After going through this course the student will be able to		
C311.1	Analyze the performance of a Digital Communication System using pulse digital modulation techniques	Understanding
C311.2	Analyze digital transmission methods and detection techniques for baseband transmission	Understanding
C311.3	Evaluate the Error performance of Digital Modulation schemes	Applying
C311.4	Analyze the Information theory in communication systems	Remembering
C311.5	Apply the source coding techniques on transmission medium in digital communication system	Understanding
C311.6	Understanding of how a computer performs arithmetic operation of positive and negative numbers.	Analyzing
CO No	**Subject: Linear I C Applications**	**Taxonomy level**
Student should be able to		
C312.1	Describe the op-amp and internal circuitry of op-amps	Analyzing
C312.2	Discuss the applications of operational amplifier and design of various applications of op-amp	Analyzing
C312.3	Understanding the active filters using operational Amplifier	Creating
C312.4	Operation and design of active filters using operational Amplifier	Creating
C312.5	Design and applications of 555 timer and Phase locked loop	Applying
C312.6	Use the Op-Amp in A to D & D to A Converters	Analyzing
CO No	**Subject: Digital I C Applications**	**Taxonomy level**
Student should be able to		
C313.1	Explain the concepts of logic families used in ics	Understanding
C313.2	Develop digital logic with vhdl simulation and synthesis	Applying
C313.3	Develop vhdl applications by using different statements	Applying
C313.4	Design the combinational circuits using vhdl for real time applications	Applying
C313.5	Design the sequential circuits using vhdl for real time applications	Applying
C313.6	Design state diagrams state tables state reduction with the help of mealay and moore circuits	Applying

Department of Electronics and Communication Engineering

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CO No	Subject: Digital Communications	Taxonomy level
Student should be able to		
C314.1	Analyse the performance of dc system using pulse digital modulation techniques	Analyzing
C314.2	Analyse digital transmission method s and detection techniques for base band transmisson	Analyzing
C314.3	Evaluate the error performance of digital modulation schemes	Evaluating
C314.4	Analyse the information theory in communication systems	Analyzing
C314.5	Apply source coding technique on transmission mediam in digital communicaton system	Applying
C314.6	Apply the channel coding techniques in digital communication system in order to provide error detection and correction capabilities to the receiver.	Applying
CO No	**Subject: Antenna and Wave Propagation**	**Taxonomy level**
Student should be able to		
C315.1	Describe all the basic parameters of an antenna	Understanding
C315.2	Analyze the parameters of linear wire antennas and explain the antenna theorems	Analyzing
C315.3	Design and analyze various antenna arrays	Creating
C315.4	Explain the operation of non resonant antennas	Understanding
C315.5	Describe about VHF, UHF and Microwave antennas and its measurements.	Understanding
C315.6	Explain the characteristics of radio wave propagation	Understanding
CO No	**Subject: PDC Lab**	**Taxonomy level**
Student should be able to		
C316.1	Design linear and non linear wave shaping circuits	Analyzing
C316.2	Design transistor as a switch	Analyzing
C316.3	Examine the functionality of combinational and sequential logic circuits	Analyzing
C316.4	Examine the performance of sampling gates	Analyzing
C316.5	Design astable,bistable and monostablemultivibrators using transistors	Applying
C316.6	Design UJT relaxation oscillator and bootstrap sweep circuit	Applying

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A Y: 2018-2019

CO No	Subject: LICA Lab	Taxonomy level
Student should be able to		
C317.1	Design of adder, subtractor, comparator Circuits.	Analyzing
C317.2	Design of Integrator and Differentiator Circuits using IC 741.	Applying
C317.3	Examine the frequency response of filters.	Applying
C317.4	Design of RC Phase shift and Wien bridge Oscillator using IC 741	Understanding
C317.5	Applications of PLL,VCO	Understanding
C317.6	Understandig the operation of 4 bit DAC using Op-Amp	Applying
CO No	Subject: DSD & DICA Lab	Taxonomy level
Student should be able to		
C318.1	Implement & Design Logic Gates By Using Vhdl Or Hardware	Analyzing
C318.2	Implement & Design 3 To 8 Decoder -74138 By Using Vhdl Or Hardware.	Analyzing
C318.3	Implement & Design 8 X 1 Multiplexer By Using Vhdl Or Hardware	Analyzing
C318.4	Implement & Design D-Flipfloop By Using Vhdl Or Hardware	Analyzing
C318.5	Implement & Design Shiff Register By Using Vhdl Or Hardware	Analyzing
C318.6	Implement &Design ALU By Using Vhdl Or Hardware	Analyzing

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A Y: 2018-2019

III Year II Semester		
CO No	**Subject: Micro Processors & Micro Controllers**	**Taxonomy level**
Student should be able to		
C321.1	Acquire knowledge about the processors, Understand the basic concepts of Microprocessors and addressing modes	Analyzing
C321.2	Develop program for different addressing modes.	Applying
C321.3	Understand the different types of interrupts that are functional at the work Place.	Applying
C321.4	Understand and capable or interfacing the microprocessor to the I/O devices.	Analyzing
C321.5	Develop simple applications on microcontroller based systems.	Analyzing
C321.6	Understand the development and improvement in Microprocessors and controllers.	Creating
CO No	**Subject: Micro Wave Engineering**	**Taxonomy level**
Student should be able to		
C322.1	Analysze the different waveguide characteristics	Evaluating
C322.2	Design different modes in waveguide structures	Evaluating
C322.3	Caluculate S-matrix for various waveguide components	Understanding
C322.4	Evaluate the Splitting the microwave energy in a desired direction	Understanding
C322.5	Evaluate the Distinguish between microwave tubes and solid state devices, calculation of efficiency of devices	Evaluating
C322.6	Apply the Measure various microwave parameters using a microwave test bench	Understanding
CO No	**Subject: VLSI Design**	**Taxonomy level**
Student should be able to		
C323.1	Describe the IC Technologies and various MOS fabrication techniques	Understanding
C323.2	Design N-MOS, P-MOS & C-MOS stick and layout diagrams with various techniques.	Creating
C323.3	Measure the various types of sheet resistance concept applied to MOS transistor.	Evaluating
C323.4	Describe the chip inputs,outputs and its testability	Understanding
C323.5	Describe FPGA design	Understanding
C323.6	Describe Low Power VLSI Design	Understanding

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CO No	Subject: Digital Signal Processing	Taxonomy level
Student shold be able to		
C324.1	Examine discrete-time signals and systems, linear constant coefficient difference equation and frequency domain representation.	Analyzing
C324.2	Analyze Discrete Fourier Series, Discrete Fourier Transform and Fast Fourier Transform algorithms	Analyzing
C324.3	Design structures for digital filters and solve difference equations using Z-Transforms.	Evaluating
C324.4	Design digital IIR filter using analog filter and digital FIR filter using windowing techniques.	Evaluating
C324.5	Distinguish Decimation and interpolation for Multi-rate signal processing.	Analyzing
C324.6	Describe DSP processors, memory architecture for DSP, addressing modes and registers	Understanding
CO No	Subject: Bio-Medical Engineering	Taxonomy level
Student should be able to		
C325.1	Expalijn the concepts of bio medical potentials	understanding
C325.2	Classify the different types of electrodes and transducers	understanding
C325.3	Analysis about cardiovascular system and respiratory system	Analyzing
C325.4	Explain about patient care monitoring therapeutic devices and prosthetic devices	Evaluating
C325.5	Illustate diagnostic techniques and bio telemetry	understanding
C325.6	Demonstrate monitors and recorders and shocking Hazards	understanding
CO No	Subject: MPMC Lab	Taxonomy level
Student should be able to		
C326.1	To develop basic knowledge of Tasm software	Understanding
C326.2	To develop and execute simple programs on 8086 micro controller	Applying
C326.3	To develop and execute the assembly language programs for interfacing Intel 8086 with peripheral devices	Applying
C326.4	To develop and execute variety of assembly language programs of Intel 8086 including sorting and string manipulation instructions arithmetic and logical,sorting, searching, and string manipulation operations.	Applying
C326.5	To develop and execute the assembly language programs for interfacing Intel 8051 with peripheral devices peripheral devices	Applying
C326.6	To develop and execute simple programs on 8051 micro controller	Applying

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CO No	Subject: VLSI Lab	Taxonomy level
Student should be able to		
C327.1	Design and implementation of logic gates	Applying
C327.2	Design and implementation of combinational circuits	Applying
C327.3	Design and implementation of lathes	Applying
C327.4	Design and implementation of RAM cell and differential amplifier	Applying
C327.5	Design and implementation of counter	Applying
C327.6	Design and implementation of oscillator	Applying
CO No	Subject: DC Lab	Taxonomy level
Student should be able to		
C328.1	Understand the basic theories of digital communication system in practical	Analyzing
C328.2	Analyse the pulsed modulation systems and their performance	applying
C328.3	Analyse the different digital modulation and demodulation schemes	Analysis
C328.4	Identify and describe techniques in modern digital communication in source coding	applying
C328.5	Analyse the companding techniques	Analysis
C328.6	Able to perform channel coding	Understanding
CO No	Subject: IPR & Patents	Taxonomy level
Student should be able to		
C329.1	Define different Intellectual Properties rights and agencies for registration.	Remembering
C329.2	List out the formalities of copyright registration	Remembering
C329.3	Outline the process of patent for the protection of software and innovations.	Understanding
C329.4	Classify dilution of ownership to protect the trademark.	Understanding
C329.5	Define the trade secrete laws for employees confidentiality	Remembering
C329.6	Illustrate Cybercrime with example and how to secure data.	Understanding

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IV Year I Semester		
CO No	Subject: VLSI Design	Taxonomy level
Student should be able to		
C411.1	Describe the IC Technologies and various MOS fabrication techniques	Understanding
C411.2	Design N-MOS, P-MOS & C-MOS stick and layout diagrams with various techniques	Create
C411.3	Measure the various types of sheet resistance concept applied to MOS transistor.	Evaluate
C411.4	Describe the Chip inputs, Outputs and its testability	Understanding
C411.5	Describe the FPGA design	Understanding
C411.6	Describe the low power VLSI Design	Understanding
CO No	Subject: Computer Networks	Taxonomy level
Student should be able to		
C412.1	Illustrate the different network models with examples	Analyzing
C412.2	Evaluate the performance of different guided and unguided media	Evaluate
C412.3	Explain the concept of ALOHA,MAC	Create
C412.4	Analyze the different types of routing algorithms	Create
C412.5	Differentiate the concept of TCP and UDP protocols	Create
C412.6	Illustrate the different network models with examples	Analyzing
CO No	Subject: Digital Image Processing	Taxonomy level
Student should be able to		
C413.1	Apply transform techniques on images.	Applying
C413.2	Analyze spatial and frequency domain filtering on images.	Analyzing
C413.3	Apply image restoration operations on images.	Applying
C413.4	Analyze color conversions on images and code images to achieve good compression.	Analyzing
C413.5	Develop coding techniques for image compression and wavelet based image processing.	Applying
C413.6	Develop morphological operations and segmentation techniques on images.	Analyzing

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CO No	Subject: Computer Architecture & Organization	Taxonomy level
Student should be able to		
C414.1	Understand the fundamentals of different instruction set architectures and their relationship to the CPU design.	Understanding
C414.2	Understand the principles and the implementation of computer arithmetic and ALU.	Understanding
C414.3	Understand the micro programming consecpt	Understanding
C414.4	Understand the memory system interfacing and organization	Understanding
C414.5	Understand the I/O interfacing organization	Understanding
C414.6	Understand the operation of modern CPUs including interfacing, pipelining, memory systems and busses	Understanding
CO No	Subject: Radar Systems	Taxonomy level
Student should be able to		
C415.1	Derive the radar range equation and to solve some analytical problems	Understanding
C415.2	Understand the CW,FM-CW radars and its application	Understanding
C415.3	Understand the MTI,Pule Doppler radars and its applications	Understanding
C415.4	Understand the concept of Tracking and different Tracking Techniques	Understanding
C415.5	Derive the characteristics of a matched filter and distinguish different phased array antennas	Applying
C415.6	Understand the various components of radar receiver and its performance	Understanding
CO No	Subject: Optical Communication	Taxonomy level
Student should be able to		
C416.1	Understand the historical development and advantages of optical fiber communication.	Analyzing
C416.2	Explain the principles of optical waveguides, modes, and single-mode fiber characteristics.	Remembering
C416.3	Analyze the properties of different fiber materials and assess their suitability.	Analyzing
C416.4	Evaluate signal distortion factors, including attenuation, dispersion, and losses.	Application
C416.5	Demonstrate proficiency in connector types, splicing, and optical source characteristics.	Evaluating
C416.6	Comprehend optical receiver operation, digital transmission, and system design principles..	Remembering

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CO No	Subject: VLSI Lab	Taxonomy level
Student should be able to		
C417.1	Design and implementation of logic gates	Creating
C417.2	Design and implementation of combinational circuits	Creating
C417.3	Design and implementation of lathes	Creating
C417.4	Design and implementation of RAM cell and differential amplifier	Creating
C417.5	Design and implementation of counter	Creating
C417.6	Design and implementation of oscillator	Creating
CO No	Subject: MWE Lab	Taxonomy level
Student should be able to		
C418.1	Describe the Basic microwave bench set up	Understanding
C418.2	Observe the characteristics of Reflex Klystron & Gunn diode	Analyzing
C418.3	Calculate VSWR , wavelength, impedance, frequency of waveguide	Evaluating
C418.4	Measure the scattering parameters of microwave devices.	Evaluating
C418.5	Measure the losses in fibers and NA	Evaluating
C418.6	Observe VI characteristic of with optical sources	Analyzing

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RISE Krishna Sai Gandhi Group
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IV Year II Semester		
CO No	**Subject: Cellular Mobile Communication**	**Taxonomy level**
Student should be able to		
C421.1	Analyze analog and digital cellular radio systems for mobile communication.	Analyzing
C421.2	Design a cellular system using frequency reuse concept and cell coverage for Signal traffic.	Evaluating
C421.3	Design the antenna system parameters by considering the effects in the reduction of C/I ratio.	Evaluating
C421.4	Apply frequency management and channel allocation schemes to improve the trunking efficiency.	Applying
C421.5	Analyze the Concepts of Handoff, cell splitting and operation of cellular system.	Analyzing
C421.6	Describe digital cellular networks.	Understanding

CO No	**Subject: Electronic Measurements and Instrumentation**	**Taxonomy level**
Student should be able to		
C422.1	Analyze performance characteristics of electronic measuring instruments.	Understanding
C422.2	Explain signal generators, wave and distortion analyzers.	Analyzing
C422.3	Demonstrate the functionality of oscilloscopes.	Understanding
C422.4	Analyze bridges for measurement of inductance and capacitance	Analyzing
C422.5	Analyze active and passive transducers.	Creating
C422.6	Describe physical parameters force, pressure, velocity, humidity, moisture, speed proximity and data acquisition system.	Creating
CO No	**Subject: Embedded systems**	**Taxonomy level**
Student should be able to		
C423.1	Understand the basic concepts and applications of embedded systems.	Understanding
C423.2	Distinguish all communication devices in embedded system, other peripheral device.	Analyzing
C423.3	Analyze embedded firmware design approaches and development languages.	Analyzing
C423.4	Analyze real time operating systems with examples of Task Communication, Synchronization.	Analyzing
C423.5	Understand the embedded software development tools.	Understanding
C423.6	Design, implement and test an embedded system.	Creating
CO No	**Subject: Wireless Sensors and Networks**	**Taxonomy level**

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Student should be able to		
C424.1	Apply concepts of WSN to driving applications By enabling technologies and different architectures	Applying
C424.2	Analyze different topologies in networking technologies	Analyzing
C424.3	Design MAC protocol for Ad-Hoc wireless networks and different contention based on MAC protocols	Creating
C424.4	Categorize different routing protocols and their issues in design	Analyzing
C424.5	Compose transport layer protocol for issues in designing, design goals, classification of transport layer solutions, other protocols for Ad-hoc wireless networks	Creating
C424.6	Discover security in wireless sensor network ,differ sensor n networks platforms and tools for application in wireless sensor network	Analyzing

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CO No	Subject: SEMINAR	Taxonomy level
Student should be able to		
C425.1	Interpret logical progression of the paper and present with suitable presentation	Application
CO NO	**Project**	**Taxonomy level**
Student should be able to		
C426.1	Develop applications in various areas for societal needs	Creating
C426.2	Develop skills for analyzes and synthesis of practical systems	Creating
C426.3	Acquire the use of new tools effectively and creatively	Creating
C426.4	Work in team to carry out analysis and cost effective ,environmental friendly designs of engineering systems	Creating
C426.5	Write technical /project reports and oral presentation of the work done to an audience	Creating
C426.6	Domenstrate a product developed	Creating

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