List of Program Outcomes (POs)

Engineering Graduates will be able to:

1. **Engineering knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.

2. **Problem analysis**: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences

3. **Design/development of solutions:** Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations

4. **Conduct investigations of complex problems**: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions

5. **Modern tool usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations

6. **The engineer and society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.

7. **Environment and sustainability:** Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

8. **Ethics**: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

9. **Individual and team work**: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

10. **Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

11. **Project management and finance:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments

12. **Life-long learning:** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

B.L.D.E.Association's
Vachana Pitamaha Dr. P.G. Halakatti College of Engineering &
Technology, Bijapur.

Program Specific Outcomes (PSOs)

Department: **Electronics & Communication Engineering**

List of Program Specific Outcomes (PSOs)

By the time of graduation, Electronics & Communication Engineering students will be able to:

1. **Hardware Design and Development skills** - Analyze and design, analog and digital circuits or systems for a given specifications and functions.

2. **Computational Skills** - Formulate the solution for interdisciplinary problems through acquired programming knowledge in various domains.

Course Outcomes

Department:**E&CEngineering**   Program:**BE in E&CEngineering**

Subject	Code	Course Outcomes	Statement
I Semester			
Mathematics for EES Stream-I	BMATE101	CO1	Apply the knowledge of calculus to solve problems related to polar curves.
		CO2	Learn the notion of partial differentiation to compute rate of change of multivariate functions.
		CO3	Analyze the solution of linear and nonlinear ordinary differential equations.
		CO4	Apply the concept of change of order of integration and variables to evaluate multiple integrals and their usage in computing area and volume.
		CO5	Make use of matrix theory for solving the system of linear equations and compute eigen values and eigen vectors.
Chemistry for EES Stream	BCHEE102	CO1	Identify the terms and applications processes involved in scientific and engineering applications.
		CO2	Explain the phenomena of chemistry to describe the methods of engineering processes.
		CO3	Solve the problems in chemistry that are pertinent in engineering applications.
		CO4	Apply the basic concepts of chemistry to explain the chemical properties and processes
		CO5	Analyze properties and multi disciplinary situations.

Course Outcomes

Department: **E&CEngineering**   Program: **BE in E&CEngineering**

Subject	Code	Course Outcomes	Statement
Computer Aided Engineering Drawing	BCEDK103	CO1	Use CAD tools for basic engineering drawing.
		CO2	Draw different views of points, lines and planes in different orientations.
		CO3	Draw the orthographic and isometric positions of right regular solids.
		CO4	Identify the cut position of the solids and draw the development of lateral surfaces.
Introduction to Electrical Engineering	BESCK104 B	CO1	Understand the concepts of various energy sources and electric circuits.
		CO2	Apply the basic electric laws to solve circuits.
		CO3	Discuss the construction and operations of various electric machines.
		CO4	Identify suitable machines for practical electric application
		CO 5	Explain the concepts of electric power transmission and distribution, electricity billing, circuit protective devices and personal safety measures.

| | | | B.L.D.E.Association's |
| | | | VachanaPitamahaDr.P.G.HalakattiCollegeofEngineering&Technology,Bijapur. |

B.L.D.E.Association's

VachanaPitamahaDr.P.G.HalakattiCollegeofEngineering&Technology,Bijapur.

CourseOutcomes

Department:**E&CEngineering**   Program:**BEinE&CEngineering**

Subject	Code	Course Outcomes	Statement
Introduction to IOT	BETCK105H	CO1	Describe the evolution of IoT, IoT networking components, and addressing strategies in IoT.
		CO2	Classify various sensing devices and actuator types.
		CO3	Demonstrate the processing in IoT.
		CO4	Explain Associated IOT Technologies
		CO5	Illustrate architecture of IOT Applications
Communicative English	BENGK106	CO1	Understand and apply the Fundamentals of Communication Skills in their communication skills
		CO2	Identify the nuances of phonetics, intonation and enhance pronunciation skills.
		CO3	To impart basic English grammar and essentials of language skills as per present requirement.
		CO4	Understand and use all types of English vocabulary and language proficiency.
		CO5	Adopt the techniques of information transfer through presentation .

B.L.D.E.Association's
VachanaPitamahaDr.P.G.HalakattiCollegeofEngineering&Technology,Bijapur.

CourseOutcomes

Department: **E&CEngineering**   Program: **B.E inE&CEngineering**

Subject	Code	Course Outcomes	Statement
Scientific Foundations for Health	BSFHK108	CO1	To acquire Good Health & It's balance for positive mindset
		CO2	To Create of Healthy and caring relationships to meet the requirements of MNC and LPG world
		CO3	To learn about Avoiding risks and harmful habits in their campus and outside the campus for their bright future
		CO4	To Prevent and fight against harmful diseases for good health through positive mindset

B.L.D.E.Association's
VachanaPitamahaDr.P.G.HalakattiCollegeofEngineering&Technology,Bijapur.

Course Outcomes

Department: **E&C Engineering**   Program: **BE in E&CEngineering**

Subject	Code	Course Outcomes	Statement
			II semester
Mathematics for EES Stream-II	BMATE201	CO1	Understand the applications of vector calculus refer to solenoidal, irrotational vectors, line integral and surface integral.
		CO2	Demonstrate the idea of Linear dependence and independence of sets in the vector space, and linear transformation.
		CO3	To understand the concept of Laplace transform and to solve initial value problems.
		CO4	Analyze approximate solutions to solve Electrical and Electronics engineering problems involving numerical data.
		CO5	Apply the knowledge of numerical methods in solving physical and engineering phenomena.
Physics for EES Stream	BPHYE202	CO1	Describe the fundamental principles of the Quantum Mechanics and the essentials of Photonics.
		CO2	Elucidate the concepts of conductors, dielectrics and superconductivity
		CO3	Discuss the fundamentals of vector calculus and their applications in Maxwell's Equations and EM Waves.
		CO4	Summarize the properties of semiconductors and the working principles of semiconductor devices.
		CO5	Practice working in groups to conduct experiments in physics and Perform precise and honest measurements.

			B.L.D.E.Association's Vachana Pitamaha Dr. P.G. Halakatti College of Engineering & Technology, Bijapur. Course Outcomes Department: E&C Engineering Program: BE in E&C Engineering
Subject	**Code**	**Course Outcomes**	**Statemen t**
Basic Electronics	BBEE203	CO1	Develop the basic knowledge on construction, operation and characteristics of semiconductor devices.
		CO2	Apply the acquired knowledge to construct small scale circuits consisting of semiconductor devices
		CO3	Develop competence knowledge to constructbasic digital circuitby make use of basic gate and its function.
		CO4	Construct the conceptual blocks for basic communication system.
		CO5	Apply the knowledge of various transducers principle in sensor system.
Introduction to C Programming	BESCK-204E	CO1	Elucidate the basic architecture and functionalities of a computer and also recognize the hardware parts.
		CO2	Apply programming constructs of C language to solve the real world problem.
		CO3	Explore user-defined data structures like arrays in implementing solutions to problems like searching and sorting.
		CO4	Design and Develop Solutions to problems using modular programming constructs using functions.

Subject	Code	Course Outcomes	Statement
Introduction to Python Programming	BPLCK-205B	CO1	Demonstrate proficiency in handling loops and creation of functions.
		CO2	Identify the methods to create and manipulate lists, tuples and dictionaries.
		CO3	Develop programs for string processing and file organization
		CO4	Interpret the concepts of Object-Oriented Programming as used in Python.
Professional writing skills in English	BPWSK-206	CO1	To understand and identify the Common Errors in Writing and Speaking.
		CO2	To Achieve better Technical writing and Presentation skills.
		CO3	To read Technical proposals properly and make them to Write good technical reports.
		CO4	Acquire Employment and Workplace communication skills.
		CO4	To learn about Techniques of Information Transfer through presentation in different level
Indian Constitution	BICOK-207	CO1	CO1 Analyse the basic structure of Indian Constitution.
		CO2	Remember their Fundamental Rights, DPSP's and Fundamental Duties (FD's) of our constitution.
		CO3	know about our Union Government, political structure & codes, procedures
		CO4	CO4 Understand our State Executive & Elections system of India.
		CO5	Remember the Amendments and Emergency Provisions, other important provisions given by the constitution.

			B.L.D.E.Association's

B.L.D.E.Association's
Vachana Pitamaha Dr. P.G. Halakatti College of Engineering & Technology, Bijapur.

Course Outcomes
Department: E&C Engineering   Program: BE in E&C Engineering

Subject	Code	Course Outcomes	Statement
center			**III Semester**
Mathematics Course	BSC 21MAT31	CO1	Solve ordinary differential equations using Laplace transform.
		CO2	Demonstrate the Fourier series to study the behaviour of periodic functions and their applications in system communications, digital signal processing and field theory.
		CO3	UseFourier transforms to analyze problems involving continuous-time signals and to apply Z-Transform techniques to solve difference equations
		CO4	Solve mathematical models represented by initial or boundary value problems involving partial differential equations
		CO5	Determine the extremals of functionals using calculus of variations and solve problems arising in dynamics of rigid bodies and vibrational analysis.
Digital System Design using Verilog	IPCC 21EC32	CO1	Simplify Boolean functions using K-map and Quine-McCluskey minimization technique.
		CO2	Analyze and design for combinational logic circuits.
		CO3	Analyze the concepts of Flip Flops (SR, D, T and JK) and to design the synchronous sequential circuits using Flip Flops.
		CO4	Model Combinational circuits (adders, subtractors, multiplexers) and sequential circuits using Verilog descriptions.
		CO5	Write the Verilog HDL-structural description of digital systems

B.L.D.E.Association's
Vachana Pitamaha Dr. P.G. Halakatti College of Engineering & Technology, Bijapur.

Course Outcomes

Department: **E&C Engineering**   Program: **BE in E&C Engineering**

Subject	Code	Course Outcomes	Statement
Basic Signal Processing	IPCC 21EC33	CO1	Explain the various vector spaces operations.
		CO2	Define and find the Eigen value, Eigen vector, diagonalization, find eigen value and SVD for a matrix.
		CO3	Classify the discrete signals and systems, summarize the basic operations of the discrete signals and systems.
		CO4	Find the impulse response, convolution sum for discrete signals like unit step, rectangular and exponential.
		CO5	Define Z-transform and state properties of region of convergence.
Analog Electronic Circuits	PCC 21EC34	CO1	Understand the characteristics of BJTs and FETs for switching and amplifier circuits.
		CO2	Design and analyze FET amplifiers and oscillators with different circuit configurations and biasing conditions.
		CO3	Understand the feedback topologies and approximations in the design of amplifiers and oscillators.
		CO4	Design of circuits using linear ICs for wide range applications such as ADC, DAC, filters and timers.
		CO5	Understand the power electronic device components and its functions for basic power electronic circuits.

B.L.D.E.Association's

Vachana Pitamaha Dr. P.G. Halakatti College of Engineering & Technology, Bijapur.

Course Outcomes

Department: **E&C Engineering**   Program: **BE in E&C Engineering**

Subject	Code	Course Outcomes	Statement
Analog and Digital Electronics Lab	PCC 21ECL35	CO1	Design and analyze the BJT/FET amplifier and oscillator circuits.
		CO2	Design and test Op-amp circuits to realize the mathematical computations, DAC and precision rectifiers.
		CO3	Design and test the combinational logic circuits for the given specifications.
		CO4	Test the sequential logic circuits for the given functionality
		CO5	Demonstrate the basic electronic circuit experiments using SCR and 555 timer.

Subject	Code	Course Outcomes	Statement
			IV Semester
Maths for Communication Engineers	BSC 21EC41	CO1	Use the concepts of an analytic function and complex potentials to solve the problems arising in electromagnetic field theory. Utilize conformal transformation and complex integral arising in aero foil theory, fluid flow visualization and image processing.
		CO2	Obtain the series solutions of ordinary differential equations.
		CO3	Make use of the correlation and regression analysis to fit a suitable mathematical model for the statistical data.
		CO4	Apply discrete and continuous probability distributions in analyzing the probability models arising in engineering field.
		CO5	Construct joint probability distributions and demonstrate the validity of testing the hypothesis.
Digital Signal Processing	IPCC 21EC42	CO1	Understand Frequency domain sampling and its reconstruction, DFT and its relationship with other transforms and their properties.
		CO2	Computation of DFT using FFT algorithms and linear filtering approach.
		CO3	Design and realize FIR filters
		CO4	Design and realize IIR digital filters.
		CO5	Understand the DSP processor architecture.

Subject	Code	Course Outcomes	Statement
Circuits & Controls	IPCC 21EC43	CO1	Analyze and solve electric circuit by applying loop , nodal analysis and network theorems.
		CO2	Evaluate two port networks and apply Laplace transform to solve electric circuit.
		CO3	Compute gain of a control system using different techniques
		CO4	Determine the time response of a control system.
		CO5	Determine the stability of a system using Routh-Hurwitz criterion and Root-locus technique in the time domain and using Bode plots in the frequency domain. Also determine stability of a system using Nyquist stability criterion and analyze systems using State variable approach.
Communication Theory	PCC 21EC44	CO1	Design simple systems for generating and demodulating AM, DSB, SSB and VSB signals.
		CO2	Discuss the concepts in Angle modulation for the design of communication systems
		CO3	Analyze and compute performance of AM and FM modulation in the presence of noise at the receiver
		CO4	Illustrate the concepts digitization of signals viz; sampling, quantization process
		CO5	Illustrate the concepts of decoding/encoding/multiplexing, Quantization random process in PCM with Vocoders and Video transmission

Subject	Code	Course Outcomes	Statement
Biology For Engineers	AEC 21BE45	CO1	Elucidate the basic biological concepts via relevant industrial applications and case studies.
		CO2	Evaluate the principles of design and development, for exploring novel bioengineering projects
		CO3	Corroborate the concepts of biometrics for specific requirements.
		CO4	Think critically towards exploring innovative bio-based solutions for socially relevant problems.
Communication Laboratory I	PCC 21ECL46	CO1	Demonstrate the AM and FM modulation and demodulation by representing the signals in time and frequency domain.
		CO2	Design and test the sampling, Multiplexing.
		CO3	Design and test PAM with relevant circuits
		CO4	Demonstrate the basic circuitry and operations used in AM and FM receivers.
		CO5	Illustrate the operation of PCM and delta modulations for different input conditions.

Subject	Code	Course Outcomes	Statement
			V Semester
TECHNOLOGICAL INNOVATION MANAGEMENT AND ENTREPRENEURSHIP	18ES51	C01	Explain the fundamental concepts of management and Entrepreneurship and opportunities in order to setup a business.
		CO2	Identify the various organizations' Architectures.
		CO3	Describe the functions of managers, entrepreneurs and their social responsibilities.
		CO4	Explain the components in developing a business plan.
		CO5	Recognize and Explain various resources of funding and institutions supporting entrepreneurs.
DIGITAL SIGNAL PROCESSING	18EC52	C01	Understand Frequency domain sampling and its reconstruction, DFT and its relationship with other transforms and their properties.
		CO2	Computation of DFT using FFT algorithms and linear filtering approach.
		CO3	Design and realize FIR filters
		CO4	Design and realize IIR digital filters.
		CO5	Understand the DSP processor architecture.

B.L.D.E.Association's
Vachana Pitamaha Dr. P.G. Halakatti College of Engineering & Technology, Bijapur.

Course Outcomes

Department: **E&C Engineering**   Program: **BE in E&C Engineering**

Subject	Code	Course Outcomes	Statement
PRINCIPLES OF COMMUNICATION SYSTEMS	18EC53	C01	Design simple systems for generating and demodulating AM, DSB, SSB and VSB signals.
		CO2	Discuss the concepts in Angle modulation for the design of communication systems
		CO3	Analyze and compute performance of AM and FM modulation in the presence of noise at the receiver
		CO4	Illustrate the concepts digitization of signals viz; sampling, quantization process
		CO5	Illustrate the concepts of decoding/encoding/multiplexing, Quantization random process in PCM with Vocoders and Video transmission
INFORMATION THEORY and CODING	18EC54	C01	Understand the concept of Entropy ,Information rate,order of source wrt dependent and independent source
		CO2	Study various source coding algorithms
		CO3	Model discrete & continuous communication channels
		CO4	Study Linear block and binary cyclic codes
		CO5	Study convolution al codes

Subject	Code	Course Outcomes	Statement
ELECTROMAGNETIC WAVES	18EC55	C01	Evaluate problems on electrostatic force, electric field due to point, linear, volume charges by applying conventional methods and charge in a volume.
		CO2	Apply Gauss Law to evaluate Electric fields due to different charge distributions and volume charge distribution using Divergence theorem.
		CO3	Determine Potential and Energy with respect to point charge and capacitance using Laplace equation, Apply Biot-Savart's law and Ampere's law for evaluating Magnetic field for different current configurations.
		CO4	Calculate Magnetic force, potential energy and Magnetization with respect to magnetic materials and voltage induced in electric circuits.
		CO5	Apply Maxwell's equations for time varying fields, EM waves in free space and conductors, Evaluate power associated with EM waves using Pointing theorem.
Verilog HDL	18EC56	C01	Write Verilog programs to simulate combinational circuits in dataflow, Behavioral and gate level abstractions.
		CO2	Describe sequential circuits like flip flops and counters in behavioral abstraction and obtain simulation waveforms.
		CO3	Use FPGA/CPLD kits for downloading Verilog codes and check output.
		CO4	Synthesize combinational and sequential circuits on programmable ICs and test the hardware.
		CO5	Interface the hardware to the programmable chips and obtain the required output.

Subject	Code	Course Outcomes	Statement
DIGITAL SIGNAL PROCESSING LABORATORY	18ECL57	C01	Understand the concept of Analog to Digital Conversion of signals and frequency domain sampling of signals
		CO2	Model the Discrete time signals and systems, and verify its properties and results
		CO3	Implement discrete computations using DSP processor and verity the result
		CO4	Realize the digital filters using a simulation tool and analyze the response of filter for an audio signal
		Co5	Write programs using mat-lab to illustrate DSP concepts.
HDL LABORATORY	18ECL58	C01	Write Verilog programs to simulate combinational circuits in dataflow, behavioral and gate level abstractions.
		C02	Describe sequential circuits like flip flops and counters in behavioral abstractions and obtain simulation waveforms
		C03	Use FPGA/CPLD kits for downloading Verilog codes and check output
		CO4	Synthesize combinational and sequential circuits on programmable IC's and test the hardware
		CO5	Interface the hardware to the programmable chips and obtain required output.

			B.L.D.E.Association's
			Vachana Pitamaha Dr. P.G. Halakatti College of Engineering & Technology, Bijapur.
			Course Outcomes
			Department: **E&C Engineering** Program: **BE in E&C Engineering**

Subject	Code	Course Outcomes	Statement
			VI Semester
DIGITAL COMMUNICATION	18EC61	C01	Explain different line coding techniques and representation of band pass signal.
		C02	Discuss optimum receiver for digital communication in presence of noise.
		C03	Explain the performance of different modulation techniques.
		C04	Design a signal for transmission over band limited channel to achieve zero ISI.
		CO5	Illustrate the spread spectrum signal for digital communication.

Subject	Code	Course Outcomes	Statement
EMBEDDED SYSTEMS	18EC62	C01	Describe the architectural features and instructions of 32 bit microcontroller ARM Cortex M3.
		C02	Apply the knowledge gained for programming ARM Cortex M3 for Different applications.
		C03	Describe the basic hardware components and their selection method based on the characteristics and attributes of an embedded system.
		C04	Develop the hardware /software co-design and firmware design approaches.
		C05	Explain the need of real time operating system for embedded system applications.
MICROWAVE and ANTENNAS	18EC63	C01	Describe the use and advantages of microwave transmission
		C02	Analyze various parameters related to microwave transmission lines and waveguides
		C03	Identify microwave devices for several applications
		C04	Analyze various antenna parameters necessary for building an RF system
		C05	Recommend various antenna configurations according to the applications.

B.L.D.E.Association's

Vachana Pitamaha Dr. P.G. Halakatti College of Engineering & Technology, Bijapur.

Course Outcomes

Department: **E&C Engineering**   Program: **BE in E&C Engineering**

Subject	Code	Course Outcomes	Statement
Python Application Programming	18EC646	C01	Describe the use and advantages of microwave transmission
		CO2	Analyze various parameters related to microwave transmission lines and waveguides
		CO3	Identify microwave devices for several applications
		CO4	Analyze various antenna parameters necessary for building an RF system
		CO5	Recommend various antenna configurations according to the applications.

B.L.D.E.Association's

Vachana Pitamaha Dr. P.G. Halakatti College of Engineering & Technology, Bijapur.

Course Outcomes

Department: **E&C Engineering**   Program: **BE in E&C Engineering**

Subject	Code	Course Outcomes	Statement
EMBEDDED SYSTEMS LAB	18ECL66	C01	Understand the instruction set of 32 bit microcontroller ARM cortex M3, and the software tool required for programming in assembly and C language
		CO2	Develop assembly language programs using ARM cortex M3 for different applications
		CO3	Interface external devices and I/O with ARM cortex M3.
		CO4	Develop C language programs and library functions for Embedded system applications.
COMMUNICATION LAB	18ECL67	C01	Design and test circuits for Analog modulation and Demodulation schemes for AM, FM and display waveform
		CO2	Determine the characteristics and response of Microwave guide
		CO3	Design and test for digital modulation circuits and demodulation schemes for FSK, PSK and display waveform
		CO4	Simulate the digital modulation systems and compare the error performance of basic digital modulation schemes.

Subject	Code	Course Outcomes	Statement
VII Semester			
COMPUTER NETWORKS	18EC71	CO1	Understanding the concepts of Networking.
		CO2	Describe the various Networking Architectures.
		CO3	Identify the protocols and Services of different layers.
		CO4	Distinguish the basic network configurations and standards associatedwith each network.
			Analyze a simple network and measure its parameters.
VLSI DESIGN	18EC72	CO1	Explain MOS transistor theory.
		CO2	Explain CMOS fabrication flow, layout diagrams, and technology scaling.
		CO3	Demonstrate ability to design Combinational circuits and understand the importance of delay.
		CO4	Demonstrate ability to design sequential and dynamic logic circuits as per the requirements.
		CO5	Interpret Memory elements along with timing considerations and Interpret testing and testability issues in VLSI Design

Subject	Code	Course Outcomes	Statement
DIGITAL IMAGE PROCESSING (Elective-1)	18EC733	C01	Explain basic concepts of image processing, steps used in digital image processing and elements of visual perception.
		CO2	Apply the image enhancement operations in spatial domain.
		CO3	Apply the image enhancement operations in frequency domain.
		CO4	Summarize the concepts of image restoration.
		CO5	Explain the techniques used in color image processing and morphological image processing
IoT & WIRELESS SENSOR NETWORKS	18EC741	C01	Understand the overview, design principles, OSI Model and communication protocols for the IoT/M2M Systems.
		CO2	Understand the architecture and design principles for IoT along with the importance of Data Collection, Storage and Computing using a Cloud Platform.
		CO3	Explain the prototyping and designing software for IoT Applications.
		CO4	Describe the wireless sensor networks and their architectures.
		CO5	Identify the communication protocols which best suits the WSNs.

B.L.D.E.Association's

Vachana Pitamaha Dr. P.G. Halakatti College of Engineering & Technology, Bijapur.

Course Outcomes

Department: **E&C Engineering**   Program: **BE in E&C Engineering**

Subject	Code	Course Outcomes	Statement
COMPUTER NETWORKS LAB	18ECL76	CO1	Choose suitable tools to model a network.
		CO2	Use the Network simulator for learning practice of networking algorithms
		CO3	Illustrate the operations of network protocols and algorithms using C programming
		CO4	Simulate the network with different configuration to measure the performance parameters
		Co5	Implement data link and routing protocols using C programming
VLSI LAB	18ECL77	CO1	Design and simulate combinational and sequential circuits using Verilog HDL
		CO2	Understand the synthesis process of digital circuits using EDA tools
		CO3	Perform ASIC design flow and understand the process of synthesis, synthesis constrains and evaluating the synthesis reports to obtain optimum gate level net list
		CO4	Design and simulate basic CMOS circuits like Inverter, Common source amplifier and differential amplifier.
		CO5	Perform RTL-GDSII flow and understand the stages in ASIC design.

Subject	Code	Course Outcomes	Statement
VIII Semester			
WIRELESS AND CELLULAR COMMUNICATION	18EC81	C01	Understand the communication theory both physical and networking associated with GSM, CDMA & LTE 4G systems.
		CO2	Explain concepts of propagation mechanism like Reflection, Diffraction, scattering in wireless channels.
		CO3	Develop a scheme for idle mode, call setup, call progress handling and call tear down in a GSM cellular network.
		CO4	Develop a scheme for idle mode, call set up, call progress handling and call tear down in CDMA cellular networks.
		CO5	Understand the basic operation of Air interface in LTE 4G system.
MICRO ELECTROMECHANICAL SYSTEMS	18EC822	CO1	Explain the application of MEMS and microsystem
		CO2	Design and manufacture Microsystems.
		CO3	Develop mathematical and analytical models of MEMS Devices
		CO4	Explain different methods to fabricate MEMS devices.
		CO5	Explain the different methods of manufacturing MEMS device

Subject	Code	Course Outcomes	Statement
VIII Semester			
PROJECT WORK	18EC83	C01	Adapt Multidisciplinary Knowledge to Work in a Team with Common Goal.
		CO2	Analyze Design and Develop solutions for the Identified Problems
		CO3	Test and Evaluate the Developed System
		CO4	Apply Technical and Communication Knowledge to Build the Project Report Phase -2.
		CO5	Demonstrate the Proposed System and Conclude.
TECHNICAL SEMINAR	18EC84	C01	Identifying Contemporary Issues
		CO2	Develop a literature Survey on Identified Topic
		CO3	Organize and Structure the Collected Information and Data from the Related Survey
		CO4	Apply Technical and Communication Knowledge to Build The Technical Seminar Report.
		CO5	Present the Technical Seminar
INTERNSHIP	18EC85	C01	Integrate theory and Practice
		CO2	Work in a team to achieve common objectives
		CO3	Develop communication, inter-personal and other skilss required for the job
		CO4	Design and develop solutions for multidisciplinary problems
		CO5	Demonstrate the usage of modern tools and exhibit leadership skills.