DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

PROGRAMME: B.E. ELECTRONICS AND COMMUNICATION ENGINEERING

VISION

- To be a centre of excellence in education, training and research in Electronics and Communication Engineering to cultivate technically competent professionals for Industry and Society.

MISSION

- To import knowledge and skills to face challenges in Electronics and Communication Engineering.
- To provide ethical and value based education to address the social needs.
- To provide innovative environment to learning global atonements.

PROGRAMME EDUCATIONAL OBJECTIVES (PEOs)

- To provide the students with a strong foundation in the required sciences in order to pursue studies in Electronics and Communication Engineering.
- To gain adequate knowledge to become good professional in electronic and communication engineering associated industries, higher education and research.
- To develop attitude in lifelong learning, applying and adapting new ideas and technologies as their field evolves.
- To prepare students to critically analyze existing literature in an area of specialization and ethically develop innovative and research oriented methodologies to solve the problems identified.
- To inculcate in the students a professional and ethical attitude and an ability to visualize the engineering issues in a broader social context.

PROGRAM OUTCOMES (POs)

- Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
- Problem analysis: Identify, formulate, review research literature, and analyse complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences,

and engineering sciences.

- 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.
- 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.
- Modern Tool Usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitations.
- 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.
- 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.
- Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
- Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
- 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.
- 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.
- 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.

PROGRAM SPECIFIC OUTCOMES (PSOs)

- Design, develop and analyze electronic systems through application of relevant electronics, mathematics and engineering principles.

- Design, develop and analyze communication systems through application of fundamentals from communication principles, signal processing, and RF System Design & Electromagnetics.
- Adapt to emerging electronics and communication technologies and develop innovative solutions for existing and newer problems.

COURSE OUTCOMES (COs)

Regulation	2017
Sem	01
Subject Code	HS8151
Subject Name	Communicative English
Course Outcome	❖ Read articles of a general kind in magazines and newspapers. ❖ Participate effectively in informal conversations; introduce themselves and their friends and express opinions in English. ❖ Comprehend conversations and short talks delivered in English. ❖ Write short essays of a general kind and personal letters and emails in English.

Regulation	2017
Sem	01
Subject Code	MA8151
Subject Name	Engineering Mathematics – I
Course Outcome	❖ Use both the limit definition and rules of differentiation to differentiate functions. ❖ Apply differentiation to solve maxima and minima problems. ❖ Evaluate integrals both by using Riemann sums and by using the Fundamental Theorem of Calculus. ❖ Apply integration to compute multiple integrals, area, volume, integrals in polar coordinates, in addition to change of order and change of variables

Course Outcome	❖ Evaluate integrals using techniques of integration, such as substitution, partial fractions and integration by parts. ❖ Determine convergence/divergence of improper integrals and evaluate convergent improper integrals. ❖ Apply various techniques in solving differential equations.

Regulation	2017
Sem	01
Subject Code	PH8151
Subject Name	Engineering Physics
Course Outcome	❖ The students will gain knowledge on the basics of properties of matter and its applications. ❖ The students will acquire knowledge on the concepts of waves and optical devices and their applications in fibre optics. ❖ The students will have adequate knowledge on the concepts of thermal properties of materials and their applications in expansion joints and heat exchangers. ❖ The students will get knowledge on advanced physics concepts of quantum theory and its applications in tunneling microscopes. ❖ The students will understand the basics of crystals, their structures and different crystal growth techniques.

Regulation	2017
Sem	01
Subject Code	CY8151
Subject Name	Engineering Chemistry
Course Outcome	❖ The knowledge gained on engineering materials, fuels, energy sources and water treatment techniques will facilitate better understanding of engineering processes and applications for further learning.

Regulation	2017
Sem	01
Subject Code	GE8151
Subject Name	Problem Solving and Python Programming
Course Outcome	❖ Develop algorithmic solutions to simple computational problems. ❖ Read, write, execute by hand simple Python programs. ❖ Structure simple Python programs for solving problems. ❖ Decompose a Python program into functions. ❖ Represent compound data using Python lists, tuples, and dictionaries. ❖ Read and write data from/to files in Python Programs.

Regulation	2017
Sem	01
Subject Code	GE8152
Subject Name	Engineering Graphics
Course Outcome	❖ Familiarize with the fundamentals and standards of Engineering graphics. ❖ Perform freehand sketching of basic geometrical constructions and multiple views of objects. ❖ Project orthographic projections of lines and plane surfaces. ❖ Draw projections and solids and development of surfaces. ❖ Visualize and to project isometric and perspective sections of simple solids.

Regulation	2017
Sem	01
Subject Code	GE8161
Subject Name	Problem Solving And Python Programming Laboratory

Course Outcome	❖ Write, test, and debug simple Python programs. ❖ Implement Python programs with conditionals and loops. ❖ Develop Python programs step-wise by defining functions and calling them. ❖ Use Python lists, tuples, dictionaries for representing compound data. ❖ Read and write data from/to files in Python.

Regulation	2017
Sem	01
Subject Code	BS8161
Subject Name	Physics And Chemistry Laboratory
Course Outcome	❖ Apply principles of elasticity, optics and thermal properties for engineering applications. ❖ The students will be outfitted with hands-on knowledge in the quantitative chemical analysis of water quality related parameters.

Regulation	2017
Sem	02
Subject Code	HS8251
Subject Name	Technical English
Course Outcome	❖ Read technical texts and write area- specific texts effortlessly. ❖ Listen and comprehend lectures and talks in their area of specialization successfully. ❖ Speak appropriately and effectively in varied formal and informal contexts. ❖ Write reports and winning job applications.

Regulation	2017
Sem	02
Subject Code	MA8251
Subject Name	Engineering Mathematics – II
Course Outcome	❖ Eigen values and eigenvectors, diagonalization of a matrix, Symmetric matrices, Positive definite matrices and similar matrices. ❖ Gradient, divergence and curl of a vector point function and related identities. ❖ Evaluation of line, surface and volume integrals using Gauss, Stokes and Green's theorems and their verification. ❖ Analytic functions, conformal mapping and complex integration. ❖ Laplace transform and inverse transform of simple functions, properties, various related theorems and application to differential equations with constant coefficients.

Regulation	2017
Sem	02
Subject Code	PH8253
Subject Name	Physics For Electronics Engineering
	❖ Gain knowledge on classical and quantum electron theories, and energy band structuues, ❖ Acquire knowledge on basics of semiconductor physics and its applications in various devices ❖ ❖ Get knowledge on magnetic properties of materials and their applications in data storage,

Course Outcome	❖ Have the necessary understanding on the functioning of optical materials for optoelectronics, ❖ Understand the basics of quantum structures and their applications in carbon electronics.

Regulation	2017
Sem	02
Subject Code	BE8254
Subject Name	Basic Electrical and Instrumentation Engineering
Course Outcome	❖ Understand the concept of three phase power circuits and measurement. ❖ Comprehend the concepts in electrical generators, motors and transformers ❖ Choose appropriate measuring instruments for given application

Regulation	2017
Sem	02
Subject Code	**EC8251**
Subject Name	Circuit Analysis
Course Outcome	❖ Develop the capacity to analyze electrical circuits, apply the circuit theorems in real time ❖ Design and understand and evaluate the AC and DC circuits.

Regulation	2017
Sem	02
Subject Code	EC8252
Subject Name	Electronic Devices
Course Outcome	❖ Explain the V-I characteristic of diode, UJT and SCR ❖ Describe the equivalence circuits of transistors ❖ Operate the basic electronic devices such as PN junction diode,Bipolar and Field effect Transistors, Power control devices, LED, LCD and other Opto-electronic devices

Regulation	2017
Sem	02
Subject Code	EC8261
Subject Name	Circuits And Devices Laboratory
Course Outcome	❖ Analyze the characteristics of basic electronic devices ❖ Design RL and RC circuits ❖ Verify Thevinin & Norton theorem KVL & KCL, and Super Position Theorems

Regulation	2017
Sem	02
Subject Code	GE8261
Subject Name	Engineering Practices Laboratory

Course Outcome	❖ Fabricate carpentry components and pipe connections including plumbing works. ❖ Use welding equipment's to join the structures ❖ Measure the electrical quantities ❖ Carry out the basic machining operations ❖ Make the models using sheet metal works Illustrate on centrifugal pump, Air conditioner, operations of smithy, foundry and fittings ❖ Carry out basic home electrical works and appliances ❖ Elaborate on the components, gates, soldering practices

Regulation	2017
Sem	03
Sub Code	MA8352
Sub Name	Linear Algebra and Partial Differential Equations
Course Outcome	❖ Demonstrate accurate and efficient use of advanced algebraic techniques. ❖ Demonstrate their mastery by solving non - trivial problems related to the concepts and by proving simple theorems about the statements proven by the text ❖ Able to solve various types of partial differential equations ❖ Able to solve engineering problems using Fourier series. ❖ Explain the fundamental concepts of advanced algebra and their role in modern mathematics and applied contexts

Regulation	2017
Sem	03
Sub Code	EC8393
Sub Name	Fundamentals of Data Structures I n C
Course Outcome	❖ Implement linear and non-linear data structure operations using C ❖ Suggest appropriate linear / non-linear data structure for any given data set. ❖ Apply hashing concepts for a given problem ❖ Modify or suggest new data structure for an application ❖ Appropriately choose the sorting algorithm for an application

Regulation	2017
Sem	03
Sub Code	EC8351
Sub Name	Electronic Circuits - I
	❖ Analyze the performance of small signal BJT and FET amplifiers - single stage and multistage amplifiers
Course Outcome	❖ Acquire knowledge of Working principles, characteristics and applications of BJT and FET ❖ Frequency response characteristics of BJT and FET amplifiers.

Regulation	2017
Sem	03
Sub Code	EC8352

Sub Name	Signals and Systems
Course Outcome	❖ To be able to determine if a given system is linear/causal/stable ❖ Capable of determining the frequency components present in a deterministic signal ❖ Capable of characterizing LTI systems in the time domain and frequency domain ❖ To be able to compute the output of an LTI system in the time and frequency domains.

Regulation	2017
Sem	03
Sub Code	EC8392
Sub Name	Digital Electronics
	❖ Use digital electronics in the present contemporary world ❖ Design various combinational digital circuits using logic gates ❖ Do the analysis and design procedures for synchronous and asynchronous sequential circuits
Course Outcome	❖ Use the semiconductor memories and related technology ❖ Use electronic circuits involved in the design of logic gates

Regulation	2017
Sem	03
Sub Code	EC8391
Sub Name	Control Systems Engineering

Course Outcome	❖ Identify the various control system components and their representations. ❖ Analyze the various time domain parameters. ❖ Analysis the various frequency response plots and its system. ❖ Apply the concepts of various system stability criterions. ❖ Design various transfer functions of digital control system using state.

Regulation	2017
Sem	03
Sub Code	EC8381
Sub Name	Fundamentals of Data Structures in C Laboratory
Course Outcome	❖ Write basic and advanced programs in C ❖ Implement functions and recursive functions in C ❖ Implement data structures using C ❖ Choose appropriate sorting algorithm for an application and implement it in a modularized way

Regulation	2017
Sem	03
Sub Code	EC8361
Sub Name	Analog and Digital Circuits Laboratory

Course Outcome	❖ Design and Test rectifiers, filters and regulated power supplies. Design and Test BJT/JFET amplifiers. ❖ Differentiate cascode and cascade amplifiers. ❖ Analyze the limitation in bandwidth of single stage and multi stage amplifier ❖ Measure CMRR in differential amplifier ❖ Simulate and analyze amplifier circuits using PSpice. ❖ Design and Test the digital logic circuits

Regulation	2017
Sem	03
Sub Code	HS8381
Sub Name	Interpersonal Skills / Listening & Speaking
Course Outcome	❖ Listen and respond appropriately. ❖ Participate in group discussions ❖ Make effective presentations ❖ Participate confidently and appropriately in conversations both formal and informal

Regulation	2017
Sem	04
Sub Code	MA8451
Sub Name	Probability and Random Processes

Course Outcome	❖ Understand the fundamental knowledge of the concepts of probability and have knowledge of standard distributions which can describe real life phenomenon. ❖ Understand the basic concepts of one and two dimensional random variables and apply in engineering applications Apply the concept random processes in engineering disciplines. ❖ Understand and apply the concept of correlation and spectral densities. ❖ The students will have an exposure of various distribution functions and help in acquiring skills in handling situations involving more than one variable. Able to analyze the response of random inputs to linear time invariant systems.

Regulation	2017
Sem	04
Sub Code	EC8452
Sub Name	Electronic Circuits II
Course Outcome	❖ Analyze different types of amplifier, oscillator and multivibrator circuits ❖ Design BJT amplifier and oscillator circuits ❖ Analyze transistorized amplifier and oscillator circuits ❖ Design and analyze feedback amplifiers ❖ Design LC and RC oscillators, tuned amplifiers, wave shaping circuits, multivibrators, power amplifier and DC convertors.

Regulation	2017
Sem	04
Sub Code	EC8491
Sub Name	Communication Theory
Course Outcome	❖ Student will be able to, ❖ Design AM communication systems ❖ Design Angle modulated communication systems ❖ Apply the concepts of Random Process to the design of Communication systems ● Analyze the noise performance of AM and FM systems ● Gain knowledge in sampling and quantization.

Regulation	2017
Sem	04
Sub Code	EC8451
Sub Name	Electromagnetic Fields
Course Outcome	❖ Display an understanding of fundamental electromagnetic laws and concepts ❖ Write Maxwell's equations in integral, differential and phasor forms and explain their physical meaning ❖ Explain electromagnetic wave propagation in lossy and in lossless media ● Solve simple problems requiring estimation of electric and magnetic field quantities based on these concepts and laws

Regulation	2017
Sem	04

Sub Code	EC8453
Sub Name	Linear Integrated Circuits
Course Outcome	❖ Design linear and non linear applications of OP – AMPS ❖ Design applications using analog multiplier and PLL ❖ Design ADC and DAC using OP – AMPS ❖ Generate waveforms using OP – AMP Circuits ● Analyses special function ICs

Regulation	2017
Sem	04
Sub Code	GE8291
Sub Name	Environmental Science and Engineering
Course Outcome	❖ Environmental Pollution or problems cannot be solved by mere laws. Public participation is an important aspect which serves the environmental Protection. One will obtain knowledge on the following after completing the course. ❖ Public awareness of environmental is at infant stage. ❖ Ignorance and incomplete knowledge has lead to misconceptions Development and improvement in std. of living has lead to serious environmental disasters

Regulation	2017
Sem	04
Sub Code	EC8461
Sub Name	Circuits Design and Simulation Laboratory

Course Outcome	❖ Analyze various types of feedback amplifiers ❖ Design oscillators, tuned amplifiers, wave-shaping circuits and multivibrators ❖ Design and simulate feedback amplifiers, oscillators, tuned amplifiers, wave-shaping circuits and multivibrators using SPICE Tool.

Regulation	2017
Sem	04
Sub Code	GE8291
Sub Name	Environmental Science and Engineering
Course Outcome	❖ Environmental Pollution or problems cannot be solved by mere laws. Public participation is an important aspect which serves the environmental Protection. One will obtain knowledge on the following after completing the course. ❖ Public awareness of environmental is at infant stage. ❖ Ignorance and incomplete knowledge has lead to misconceptions Development and improvement in std. of living has lead to serious environmental disasters

Regulation	2017
Sem	04
Sub Code	EC8461
Sub Name	Circuits Design and Simulation Laboratory

Course Outcome	❖ Analyze various types of feedback amplifiers ❖ Design oscillators, tuned amplifiers, wave-shaping circuits and multivibrators ❖ Design and simulate feedback amplifiers, oscillators, tuned amplifiers, wave-shaping circuits and multivibrators using SPICE Tool.

Regulation	2017
Sem	04
Sub Code	**EC**8462
Sub Name	Linear Integrated Circuits Laboratory
Course Outcome	❖ Design amplifiers, oscillators, D-A converters using operational amplifiers. ❖ Design filters using op-amp and performs an experiment on frequency response. ❖ Analyze the working of PLL and describe its application as a frequency multiplier. ❖ Design DC power supply using ICs. ❖ Analyze the performance of filters, multivibrators, A/D converter and analogy multiplier using SPICE

Regulation	2017
Sem	05
Sub Code	EC8501
Sub Name	Digital Communication

Course Outcome	❖ Design PCM systems ❖ Design and implement base band transmission schemes ❖ Design and implement band pass signaling schemes ❖ Analyze the spectral characteristics of band pass signaling schemes and their noise performance ❖ Design error control coding schemes

Regulation	2017
Sem	05
Sub Code	EC8553
Sub Name	Discrete-Time Signal Processing
Course Outcome	❖ Apply DFT for the analysis of digital signals and systems ❖ Design IIR and FIR filters ❖ Characterize the effects of finite precision representation on digital filters ❖ Design MultiMate filters ❖ Apply adaptive filters appropriately in communication systems

Regulation	2017
Sem	05
Sub Code	EC8552
Sub Name	Computer Architecture And Organization
	❖ Describe data representation, instruction formats and the operation of a digital computer ❖ Illustrate the fixed point and floating-point arithmetic for ALU operation

Course Outcome	❖ Discuss about implementation schemes of control unit and pipeline performance ❖ Explain the concept of various memories, interfacing and organization of multiple processors Discuss ❖ parallel processing technique and unconventional architectures

Regulation	2017
Sem	05
Sub Code	EC8551
Sub Name	Communication Networks
Course Outcome	❖ Identify the components required to build different types of networks ❖ Choose the required functionality at each layer for given application ❖ Identify solution for each functionality at each layer ❖ Trace the flow of information from one node to another node in the network.

Regulation	2017
Sem	05
Sub Code	EC8073
Sub Name	Medical Electronics

Course Outcome	❖ Know the human body electro- physiological parameters and recording of bio-potentials ❖ Comprehend the non-electrical physiological parameters and their measurement – body temperature, blood pressure, pulse, blood cell count, blood flow meter etc. ❖ Interpret the various assist devices used in the hospitals viz. pacemakers, defibrillators, dialyzers and ventilators ❖ Comprehend physical medicine methods eg. ultrasonic, shortwave, microwave surgical diathermies , and bio-telemetry principles and methods ❖ Know about recent trends in medical instrumentation

Regulation	2017
Sem	06
Sub Code	ORO551
Sub Name	Renewable Energy Sources
Course Outcome	❖ Understanding the physics of solar radiation. ❖ Ability to classify the solar energy collectors and methodologies of storing solar energy. ❖ Knowledge in applying solar energy in a useful way. ❖ Knowledge in wind energy and biomass with its economic aspects. ❖ Knowledge in capturing and applying other forms of energy sources like wind, biogas and geothermal energies.

Regulation	2017
Sem	05
Sub Code	EC8562
Sub Name	DIGITAL SIGNAL PROCESSING LABORATORY

Course Outcome	❖ Carryout basic signal processing operations ❖ Demonstrate their abilities towards MATLAB based implementation of various DSP systems ❖ Analyze the architecture of a DSP Processor ❖ Design and Implement the FIR and IIR Filters in DSP Processor for performing filtering operation over real-time signals ❖ Design a DSP system for various applications of DSP.

Regulation	2017
Sem	05
Sub Code	EC8561
Sub Name	Communication Systems Laboratory
Course Outcome	❖ Simulate & validate the various functional modules of a communication system ❖ Demonstrate their knowledge in base band signaling schemes through implementation of digital modulation schemes ❖ Apply various channel coding schemes & demonstrate their capabilities towards the improvement of the noise performance of communication system Simulate end-to-end communication Link ❖ Simulate end-to-end communication Link

Regulation	2017
Sem	05
Sub Code	EC8563
Sub Name	Communication Networks Laboratory

Course Outcome	❖ Communicate between two desktop computers ❖ Implement the different protocols ❖ Program using sockets. ❖ Implement and compare the various routing algorithms ❖ Use the simulation tool.

Regulation	2017
Sem	06
Sub Code	EC8691
Sub Name	Microprocessors and Microcontrollers
Course Outcome	❖ Understand and execute programs based on 8086 microprocessor. ❖ Design Memory Interfacing circuits. ❖ Design and interface I/O circuits. ❖ Design and implement 8051 microcontroller based systems.

Regulation	2017
Sem	06
Sub Code	EC8095
Sub Name	VLSI Design
Course Outcome	❖ Realize the concepts of digital building blocks using MOS transistor. ❖ Design combinational MOS circuits and power strategies. Design and construct Sequential Circuits and Timing systems. ❖ Design arithmetic building blocks and memory subsystems. ❖ Apply and implement FPGA design flow and testing.

Regulation	2017
Sem	06
Sub Code	EC8652
Sub Name	Wireless Communication
Course Outcome	❖ Characterize a wireless channel and evolve the system design specifications ❖ Design a cellular system based on resource availability and ❖ traffic demands ❖ Identify suitable signaling and multipath mitigation techniques for the wireless channel and system under consideration

Regulation	2017
Sem	06
Sub Name	Principles of Management
Course Outcome	❖ Upon completion of the course, students will be able to have clear understanding ❖ Managerial functions like planning, organizing, staffing, leading &controlling and have same basic knowledge on international aspect of management

Regulation	2017
Sem	06
Sub Name	TRANSMISSION LINES AND RF SYSTEMS

Course Outcome	❖ Explain the characteristics of transmission lines and its losses ❖ Write about the standing wave ratio and input impedance in high frequency transmission lines ❖ Analyze impedance matching by stubs using smith charts ❖ Analyze the characteristics of TE and TM waves ❖ Design a RF transceiver system for wireless communication

Regulation	2017
Sem	06
Sub Code	EC8004
Sub Name	Wireless Networks
Course Outcome	❖ Conversant with the latest 3G/4G networks and its architecture ❖ Design and implement wireless network environment for any application using latest wireless protocols and standards ❖ Ability to select the suitable network depending on the availability and requirement ❖ Implement different type of applications for smart phones and mobile devices with latest network strategies.

Regulation	2017
Sem	06
Sub Code	EC8681
Sub Name	Microprocessors and Microcontrollers Laboratory

Course Outcome	❖ Write ALP Programmers for fixed and Floating Point and Arithmetic operations. ❖ Interface different I/Os with processor ❖ Generate waveforms using Microprocessors ❖ Execute Programs in 8051 ❖ Explain the difference between simulator and Emulator

Regulation	2017
Sem	06
Sub Code	EC8661
Sub Name	VLSI Design Laboratory
Course Outcome	❖ Write HDL code for basic as well as advanced digital integrated circuit ❖ Import the logic modules into FPGA Boards ❖ Synthesize Place and Route the digital IPs ❖ Design, Simulate and Extract the layouts of Digital & Analog IC Blocks using EDA tools

Regulation	2017
Sem	07
Sub Code	EC8701
Sub Name	Antennas and Microwave Engineering

Course Outcome	❖ Apply the basic principles and evaluate antenna parameters and link power budgets ❖ Design and assess the performance of various antennas ❖ Design a microwave system given the application specifications

Regulation	2017
Sem	07
Sub Code	EC8751
Sub Name	Optical Communication
Course Outcome	❖ Realize basic elements in optical fibers, different modes and configurations. ❖ Analyze the transmission characteristics associated with dispersion and polarization techniques. ❖ Design optical sources and detectors with their use in optical communication system. ❖ Construct fiber optic receiver systems, measurements and coupling techniques. ❖ Design optical communication systems and its networks

Regulation	2017
Sem	07
Sub Code	EC8791
Sub Name	Embedded And Real Time Systems
Course Outcome	❖ Describe the architecture and programming of ARM processor ❖ Outline the concepts of embedded systems ❖ Explain the basic concepts of real time operating system design ❖ Model real-time applications using embedded-system concepts

Regulation	2017
Sem	07
Sub Code	EC8702
Sub Name	ADHOC and Wireless Sensor Networks
Course Outcome	❖ Know the basics of Ad hoc networks and Wireless Sensor Networks ❖ Apply this knowledge to identify the suitable routing algorithm based on the network and user requirement ❖ Apply the knowledge to identify appropriate physical and MAC layer protocols ❖ Understand the transport layer and security issues possible in Ad hoc and sensor networks. ❖ Be familiar with the OS used in Wireless Sensor Networks and build basic modules

Regulation	2017	
Sem	07	
Sub Code	EC8071	
Sub Name	Cognitive Radio	Professional Elective-III
Course Outcome	❖ Gain knowledge on the design principles on software defined radio and cognitive radio ❖ Develop the ability to design and implement algorithms for cognitive radio spectrum sensing and dynamic spectrum access ❖ Build experiments and projects with real time wireless applications ❖ Apply the knowledge of advanced features of cognitive radio for real world applications	

Regulation	2017	
Sem	08	
Sub Code	EC8094	
Sub Name	Satellite Communication	Professional Elective- IV
Course Outcome	❖ Analyze the satellite orbits ❖ Analyze the earth segment and space segment ❖ Analyze the satellite Link design ❖ Design various satellite applications	

Regulation	2017	
Sem	08	
Sub Code	EC8072	Professional Elective - V
Sub Name	Electromagnetic Interference and Compatibility	
Course Outcome	❖ Identify the various types and mechanisms of Electromagnetic Interference ❖ Propose a suitable EMI mitigation technique ❖ Describe the various EMC Standards and methods to measure them	

Regulation	2017
Sem	07
Sub Code	EC8811
Sub Name	Project Work
Course Outcome	❖ On completion of the project work students will be in a position to take up any challenging practical problem in the field of engineering design and find better solutions to it.