

Programme Name: B.Sc., Electronics and Communication Systems

Program Code: 26B

Graduate attributes:

GA1	Domain Knowledge	Knowledge
GA2	Domain Analysis	
GA3	Design and Development of Solutions	
GA4	Communication Skills	Skills
GA5	Innovative and Entrepreneurial Skills	
GA6	Leadership and Management Skills	
GA7	Individual and Team Work	Attitude
GA8	Ethical and Social Responsibility	
GA9	Life-long Learning	

PROGRAMME EDUCATIONAL OBJECTIVES (PEO's)

The B. Sc. ELECTRONICS AND COMMUNICATION SYSTEMS program describe accomplishments that graduates are expected to attain within five to seven years after graduation	
PEO1	Provide graduates with a strong foundation in Electronics domain and to enable them to devise and deliver efficient solutions to challenging problems in Electronics, Communications and allied disciplines.
PEO2	Impart analytic and thinking skills to develop initiatives and innovative ideas for R&D, Industry and societal requirements.
PEO3	Provide sound theoretical and practical knowledge of Electronics, managerial and entrepreneurial skills to enable students to contribute to the wellbeing of society with a global outlook.
PEO4	Inculcate qualities of teamwork as well as social, interpersonal and leadership skills and an ability to adapt to evolving professional environments in the domains of engineering and technology.
PEO5	Motivate graduates to become good human beings and responsible citizens for the overall welfare of the society.
PEO6	Develop attitude in lifelong learning, applying and adapting new ideas and technologies as their field evolves.
PEO7	To prepare graduates who will have knowledge, ability and courage to pursue higher studies and research.

PROGRAMME SPECIFIC OUTCOME(PSO's)

After the successful completion of B.Sc. ELECTRONICS AND COMMUNICATION SYSTEMS

program, the students are expected to	
PS01	Demonstrate proficiency in use of software and hardware required to practice electronics and communication profession.
PS02	Graduates will be able to apply fundamentals of electronics in various domains of analog and digital systems
PS03	Apprehend and analyses specific engineering problems of communication, electronic circuits, computer programming, embedded systems, VLSI design and semiconductor technology by applying the knowledge of basic sciences, engineering mathematics and engineering fundamentals.
PS04	Ability to communicate effectively with excellent interpersonal skills and demonstrate the practice of professional ethics for societal benefit
PS05	Graduates will be able to apply fundamentals of electronics in various domains of analog and digital systems.
PS06	Use embedded system concepts for developing IoT applications

PROGRAMME OUTCOME(PO's)

On successful completion of the B.Sc. ELECTRONICS AND COMMUNICATION SYSTEMS program	
PO1	Engineering knowledge: Apply the knowledge of mathematics, Science, Engineering fundamentals ,and an engineering specialization to the solution of complex engineering problems
PO2	Problem analysis: Identify, formulate, review research literature and analyses complex engineering problems reaching substantiated conclusion using principles of mathematics and Engineering sciences
PO3	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 conditions.
PO4	Conduct investigation 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.
PO5	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
PO6	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
PO7	Environment and Sustainability: Understand the impact of the professional engineering solution in societal and environmental contexts, and demonstrate the knowledge of and need fire sustainable development
PO8	Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
PO9	Individual and team work: Function effectively as an individual, an as a member or leader in diverse teams, and in multidisciplinary settings.
PO10	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.

COURSE OUTCOME(CO's)

Course Name: BASIC ELECTRONICS

#	Course Outcome	
C01	Understand the basic electronic components	K2
C02	Understand the basic electronic components	K2
C03	Differentiate and demonstrate the voltage and current source.	K3
C04	Apply the electronic components in network theorems	K3
C05	Put into practice and use the electronic components	K4

Course Name: SEMICONDUCTR DEVICES

#	Course Outcome	
C01	Explain the structure of the basic electronic devices	K1
C02	Understand the characteristics and operations of special diodes	K2
C03	Understand the characteristics and operations of transistors	K2
C04	Understand the characteristics and operations of FET and UJT	K2
C05	FET and UJT K2 5 Use the special diodes for various applications	K3

Course Name: BASIC ELECTRONICS LAB

#	Course Outcome	
C01	Apply the concept of basic circuit and theorems	K3
C02	Understand the basic principles of ohms and kirchoff's laws	K2
C03	Simplify the circuits using series and parallel equivalentents and using Thevenin's and Norton's equivalent circuits.	K3
C04	Design resonance circuits.	K4
C05	Use the oscilloscope for the display and measurements of signals.	K2

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Course Name: SEMICONDUCTOR DEVICES LAB

#	Course Outcome	
C01	Experiment the fundamental operations of the main semiconductor electronic devices.	K3
C02	Design and construct electronic circuits using semiconductor devices.	K3
C03	Understand the transistor characteristics	K2
C04	Understand the characteristics of LDR and solar cell	K2
C05	Analyse the characteristics of diodes and transistors	K4

Course Name: PRINCIPLES OF COMMUNICATION SYSTEMS

#	Course Outcome	
C01	Understand the basic building blocks of communication systems	K2
C02	Analyze the performance of amplitude and frequency modulation techniques.	K4
C03	Demonstrate the stages of radio receiver.	K3
C04	Compare the operation of FM and SSB receivers	K4
C05	Analyze the performance of receiver.	K4

Course Name: DIGITAL PRINCIPLES AND APPLICATIONS

#	Course Outcome	
C01	Understand the basics of Number system and gates	K2
C02	Realize the operation of various logic gates and analyzing the outputs	K1
C03	Analyses and design the combinational logic circuits	K4
C04	Analyses and design the Sequential logic circuits	K4
C05	Design various synchronous and asynchronous sequential circuits	K6

Course Name: ELECTRONIC CIRCUITS

#	Course Outcome	
C01	Understand the concepts of Rectifiers and regulators	K2
C02	Study about Small signal amplifiers	K1
C03	Analyze the functions of Power amplifiers	K4
C04	Analyze the performance of negative as well as positive feedback circuits	K4
C05	Design oscillators and Multivibrators	K6

Course Name : COMPUTER ARCHITECTURE AND ORGANIZATION

#	Course Outcome	
C01	Demonstrate computer architecture concepts related to design of modern processors, memories and I/Os.	K2
C02	Analyze the performance of commercially available computers.	K6
C03	Distinguish the organization of various parts of a system memory hierarchy	K6
C04	Understand the design of the various functional units and components of computers.	K1
C05	Identify the elements of modern instructions sets and their impact on processor design.	K5

Course Name : IC'S AND INSTRUMENTATION

#	Course Outcome	
C01	Recognize the standards in IC Fabrication Technology.	K1
C02	Understand the working of Timer and PLL	K2
C03	Design simple circuits using Op Amp.	K6
C04	Understand the principle of various types of transducers	K2
C05	Study the construction and working of frequently used equipment's like CRO, Digital Voltmeter etc	K4

Course Name : MODERN TELEVISION ENGINEERING

#	Course Outcome	
C01	Acquire knowledge on television standards	K1
C02	Study on Transmitter and receiver standards	K2
C03	Understand the Picture tube of color TV	K2
C04	Knowledge on performance of Color TV and other modern devices	K3
C05	Familiarize Advanced TV Systems	K4

Course Name : DIGITAL AND CELLULAR COMMUNICATIONS

#	Course Outcome	
C01	Know the concepts of data transmission systems	K1
C02	Analyze the Model of Communication system	K6
C03	Familiarize Digital carrier Modulation Schemes	K4
C04	Understand pulse modulation and quantization techniques	K2
C05	Analyze the cellular system design and technical challenges.	K4

Course Name : Digital Electronics Lab

#	Course Outcome	
C01	Understand the logical operation of various gates & theorems	K2
C02	Analyze the circuit using Boolean laws	K4
C03	Design the Adder and subtractor circuit using logic gates	K4
C04	Design and analyze Combinational and Sequential circuits	K6
C05	Acquire knowledge about VHDL code for design and simulate of digital logic circuits	K2

Course Name : ELECTRONIC CIRCUITS, RADIO,TV AND INSTRUMENTATION LAB

#	Course Outcome	
C01	Design power supply and rectifier circuits	K6
C02	Design Amplifier circuits	K6
C03	Design different Oscillator circuits	K6
C04	Design different Modulation circuits	K6
C05	Design circuits with Transducers	K6

Course Name : VISUAL PROGRAMMING

#	Course Outcome	
C01	Gain the Knowledge of different elements of a visual programming language as building blocks to develop correct, coherent programs.	K2
C02	Ability to implement the event driven programming using Visual Basic 6.0 forms and Controls	K3
C03	Ability to create menu to make the application more interactive	K6
C04	Gain the Knowledge about how to use existing Common Dialog Controls like File Dialog box, Color Dialog box, etc. to enhance the functionality	K4
C05	Testing and debug Visual Basic programs	K5

Course Name : 8085 MICROPROCESSOR AND APPLICATIONS

#	Course Outcome	
C01	Explain the 8085 microprocessor architecture and its instruction set.	K1
C02	Understand and realize the Interfacing of memory & various I/O devices with 8085 Microprocessor	K2
C03	Interface the 8085 microprocessor with various peripheral devices.	K3
C04	Understand the operation of Programmable Interface Devices and realize the programming & interfacing of it with 8085 microprocessor.	K4
C05	Explain the need for different interfacing devices	K5

Course Name : INTERNET AND JAVA PROGRAMMING

#	Course Outcome	
C01	Gain knowledge about the concepts of Internet and able to program the applications using Java.	K1
C02	Design, create, build, and debug Java applications and applets	K2
C03	Implement object oriented programming concepts in Java.	K3
C04	Demonstrate use of Multithreading in Java application.	K4
C05	Enhance logical reasoning and programming skills.	K5

Course Name : 8051 MICROCONTROLLER AND EMBEDDED SYSTEMS

#	Course Outcome	
C01	Describe architecture and operation of Microcontroller 8051.	K1
C02	Foster ability to understand the design concept of Microcontroller.	K2
C03	Design various applications using its peripherals.	K3
C04	Analyze the data transfer through serial and parallel ports.	K4
C05	Learn basic hardware of various microcontrollers.	K2

Course Name : MICROPROCESSOR AND MICROCONTROLLER LAB

#	Course Outcome	
C01	Learn assembly language programming of Microprocessor and Microcontroller with interfacing the peripheral devices.	K3
C02	Learn assembly language programme of microcontroller	K1
C03	Understand the basic concepts of interfacing and peripheral devices	K2
C04	Apply the knowledge gained into a practical exposure	K3
C05	Analyze the concepts of microprocessor and microcontroller	K4

Course Name : INDUSTRIAL AND POWER ELECTRONICS LAB

#	Course Outcome	
C01	Design triggering circuits of SCR	K2
C02	Understand the characteristics of power electronic devices.	K3
C03	Design and study of DIAC and TRIAC circuits	K3
C04	Understand the basic knowledge of PCB	K2
C05	Analyse the parameters of various components of electronic circuits	K4

Course Name : Electronic Communication Lab

#	Course Outcome	
C01	Understand the concept of Digital Communication and wireless communication technologies.	K2
C02	Obtain experiment knowledge about the Modulation and Detection techniques	K3
C03	Understand the practical components involved in PAM	K2
C04	Apply the principles into practical experience	K3
C05	Analyse the practical exposure over the PAM and PWM, PCM	K4

Course Name : VISUAL AND JAVA PROGRAMMING LAB

#	Course Outcome	
C01	Develop Windows-based business applications using Visual Basic	K1
C02	Understand the fundamentals of structured design, development, implementation, and documentation.	K6
C03	Gain knowledge about basic Java language syntax and semantics to write Java Programs	K4
C04	Create own programme on visual programming	K2
C05	Create own programming on java programming	K4

Course Name : MOBILE COMPUTING

#	Course Outcome	
C01	Mobile environments and communications systems.	K1
C02	Hardware devices and interacting with these devices.	K6
C03	Mobile operating systems available.	K6
C04	Programming applications on a mobile system.	K2
C05	Data and knowledge management	K4

Course Name : INDUSTRIAL AND POWER ELECTRONICS

#	Course Outcome	
C01	Developed the Circuit designing skills power electronics. Understood the concept industrial electronics system design.	K2
C02	Acquire knowledge about fundamental concepts and techniques used in power electronics.	K2
C03	Ability to analyze various single phase and three phase power converter circuits and understand their applications	K3
C04	Foster ability to identify basic requirements for power electronic based design application.	K4
C05	To develop skills to build, and troubleshoot power electronics circuits.	K5

Course Name : AUTOMOTIVE ELECTRONICS

#	Course Outcome	
C01	Obtain an overview of automotive components and subsystems.	K2
C02	Interface automotive sensors and actuators with microcontrollers	K3
C03	Understand the design cycles, communication protocols and safety systems employed in today's automotive industry.	K2
C04	Understand the engine management systems	K4
C05	Apply the knowledge of electronic instrument systems	K3

Course Name : BIOMEDICAL INSTRUMENTATION

#	Course Outcome	
C01	Understand the Concept of bio-potential	K2
C02	Understand the concept of medical instruments	K4
C03	Develop the troubleshooting Skills of medical instruments	K3
C04	Understand the concepts of signal conditioners & diagnostic equipments	K2
C05	Apply the knowledge gained on transducers and electrodes	K3