



DEPARTMENT OF ELECTRONICS SRI Y N COLLEGE (AUTONOMOUS)



Thrice Accredited by NAAC at „A“ Grade
Recognized by UGC as “College with Potential for Excellence”
Narsapur-534275, AP, India

Program Learning Outcomes of B. Sc. Electronics

The following program outcomes have been identified for B. Sc. Electronics -

PLO1	Ability to apply knowledge of mathematics & science in solving electronics related problems
PLO2	Ability to design and conduct electronics experiments, as well as to analyze and interpret data
PLO3	Ability to design and manage electronic systems or processes that conforms to a given specification within ethical and economic constraints
PLO4	Ability to identify, formulate, solve and analyze the problems in various disciplines of electronics.
PLO5	Ability to function as a member of a multidisciplinary team with sense of ethics, integrity and social responsibility
PLO6	Ability to communicate effectively in term of oral and written communication skills
PLO7	Recognize the need for, and be able to engage in lifelong learning.

PLO8	Ability to use techniques, skills and modern technological/scientific/engineering software/tools for professional practices
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B.Sc. Electronics Course Objectives and Course Outcomes

Semester-I			
Course Code	Course Name	Course Objectives	Course Outcomes
ELPI	Basic Circuit Theory	<p>Students will try to learn:</p> <ol style="list-style-type: none"> 1. To explain the basic concepts and laws of DC and AC electrical networks and solve them using mesh and nodal analysis techniques. 2. To introduce students with the fundamental concepts in graph theory. 3. To analyze circuits in time and frequency domain. 4. To explain concepts of driving point and transfer functions, poles and zeroes of network functions and their stability. 5. To introduce open circuit, short circuit, transmission, hybrid parameters and their interrelationship. <p>To synthesize the network using passive elements.</p>	<p>After successful completion of the course student will be able to</p> <ol style="list-style-type: none"> 1. Apply concepts of electric network topology, nodes, branches, loops to solve circuit problems including the use of computer simulation. 2. Understand the basic concepts of graph and analyze the basic electrical circuits using graph theory. 3. Apply time and frequency concepts of analysis. 4. Understand various functions of network and also the stability of network. 5. Learn the various parameters and their interrelationship, able to solve numericals with series, cascade, parallel connection using two port parameters. Synthesize the network using passive elements.

Semester-II			
Course Code	Course Name	Course Objectives	Course Outcomes

ELPII	Electronic Devices & Circuits	Students will try to learn: <ol style="list-style-type: none"> 1. To understand operation of semiconductor devices. 2. To understand DC analysis and AC models of semiconductor devices. 3. To apply concepts for the design of Regulators and Amplifiers 4. To verify the theoretical concepts through laboratory and simulation experiments. 5. To understand the operation of the various bias circuits of MOSFET and Analyze and design MOSFET bias circuits. 	After successful completion of the course student will be able to <ol style="list-style-type: none"> 1. Understand the current voltage characteristics of semiconductor devices, 2. Analyze dc circuits and relate ac models of semiconductor devices with their physical Operation, 3. Design and analyze of electronic circuits, 4. Evaluate frequency response to understand behavior of Electronics circuits. 5. Design and analyze the basic operations of MOSFET.
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Semester-III			
Course Code	Course Name	Course Objectives	Course Outcomes
ELPIII	Analog Electronics & Digital Principles	Students will try to learn: <ol style="list-style-type: none"> 1. To understand the operation and design of multistage amplifier for a given specification. 2. To understand the operation and design of transformer coupled various types of power amplifier circuits. 3. To understand the effects of negative feedback on amplifier circuits. 4. To understand the concepts, working principles and key applications of linear integrated circuits. 5. To perform analysis of circuits based on linear integrated circuits. 6. To design circuits and systems for particular applications using linear integrated circuits. 	After successful completion of the course student will be able to <ol style="list-style-type: none"> 1. Know about different power amplifier circuits, their design and use in electronics and communication circuits. 2. Know the concept of feedback amplifier and their characteristics. 3. Design the different oscillator circuits for various frequencies 4 Understand the fundamentals and areas of applications for the integrated circuits. 5 Analyze important types of integrated circuits. 3. Demonstrate the ability to design practical circuits that perform the desired operations. 6 Understand the differences between theoretical, practical & simulated results in integrated circuits.

Semester-IV

Course Code	Course Name	Course Objectives	Course Outcomes
ELPIV	Digital Electronics & Digital IC Applications	Students will try to learn: <ol style="list-style-type: none"> To understand number representation and conversion between different representation in digital electronic circuits. To analyze logic processes and implement logical operations using combinational logic circuits. To understand characteristics of memory and their classification. To understand concepts of sequential circuits and to analyze sequential systems in terms of state machines 	After successful completion of the course student will be able to <ol style="list-style-type: none"> Develop a digital logic and apply it to solve real life problems. Analyze, design and implement combinational logic circuits. Classify different semiconductor memories. Analyze, design and implement sequential logic circuits.

Semester-V(P-V)

Course Code	Course Name	Course Objectives	Course Outcomes
ELPV	Microprocessors Programming & Applications	Students will try to learn: <ol style="list-style-type: none"> To develop background knowledge and core expertise Of Microprocessor. To know the importance of different peripheral devices and their interfacing to Microprocessors. To know the design aspects of Microprocessor. To write assembly language 	After successful completion of the course student will be able to <ol style="list-style-type: none"> Draw and describe architecture of 8085 and 8086 Microprocessors. Interface various peripheral devices to the Microprocessors. Write assembly language program for Microprocessors. Design Microprocessor based system for various applications.

Semester-V(P-VI)

Course Code	Course Name	Course Objectives	Course Outcomes
ELPVI	Electronic Communication Systems	<p>Students will try to learn:</p> <ol style="list-style-type: none"> 1. The fundamentals of basic communication system, types of noise affecting communication system and noise parameters. 2. Need of modulation, modulation processes and different amplitude modulation schemes 3. Different angle modulation schemes with different generation and detection methods. 4. Various radio receivers with their parameters. 5. Need of sampling and different sampling techniques. <p>Generation and detection of</p> <ol style="list-style-type: none"> 6. To study the concept of Mobile radio propagation, cellular system design. 7. To understand mobile technologies like GSM , CDMA 8. To know the mobile communication evolution of 2G, 3G and 4G in detail. 	<p>After successful completion of the course student will be able to</p> <ol style="list-style-type: none"> 1. Understand different blocks in communication system and how noise affects communication using different parameters. 2. Distinguish between different amplitude modulation schemes with their advantages, disadvantages and applications.. 3. Analyze generation and detection of FM signal and comparison between amplitude and angle modulation schemes. 4. Identify different radio receiver circuits and role of AGC. 5. Know modern multiple access schemes, the concept of frequency reuse, channel assignment strategies and estimate trucking and GOS. 6. Understand GSM, CDMA concepts, architecture, frame structure, system capacity & Services

Semester-VI (P-VII)

Course Code	Course Name	Course Objectives	Course Outcomes
ELPVII	Microcontrollers & Interfacing	<p>Students will try to learn:</p> <ol style="list-style-type: none"> 1. To develop background knowledge and core expertise Of Microcontroller. 2. To know the importance of different peripheral devices and their interfacing to Microcontrollers. 3. To know the design aspects of Microprocessor 4. To write assembly language programs of Microcontroller for various applications. 	<p>After successful completion of the course student will be able to</p> <ol style="list-style-type: none"> 1. Draw and describe architecture of 8051 Microcontroller 2. Interface various peripheral devices to the Microcontrollers. 3. Write assembly language program for Microcontrollers. 4. Design Microcontroller

based system for various applications.

Semester-VI (P-VIICE1)

Course Code	Course Name	Course Objectives	Course Outcomes
ELP VIII CE1	Embedded Systems Design	Students will try to learn: <ol style="list-style-type: none">1. The concepts and architecture of embedded systems2. Basics of AVR ATmega32 Microcontroller.3. The concepts of DSP Based Embedded Systems4. The concepts of Embedded Systems in Robotics5. Different design platforms used for an embedded systems application	After successful completion of the course student will be able to <ol style="list-style-type: none">1. Understand embedded system concepts and architecture of embedded systems2. Understand the architecture of AVR ATmega 32 microcontroller and write embedded program for ATmega32 microcontroller.3. Demonstrate the open source RTOS and solve the design issues for the same.4. Select elements for an embedded systems tool.5. Understand the use Embedded Systems in Robotics

Semester-VI (P-VIICE2)

Course Code	Course Name	Course Objectives	Course Outcomes
ELPV III CE2	Consumer Electronics	<p>Students will try to learn:</p> <ol style="list-style-type: none"> 1. To sketch and describe operating principles of different types of microphones. 2. To learn various components of composite video signal and differentiate between hue, brightness, saturation, luminance and chrominance. 3. To acquaint with various devices related to telecommunication system. 4. To describe working of Washing machine, Digital Camera system, Microwave ovens with sketches of block diagram. 5. To understand the working principles of various consumer electronic devices. 	<p>After successful completion of the course student will be able to</p> <ol style="list-style-type: none"> 1. List technical specification of electronics Audio system (microphone and speaker). 2. Trouble shoots consumer electronics products like TV, washing machine and AC. 3. Identify and explain working of various colour TV transmission blocks. 4. Understand various functions of Cam coder and shoot a video and take snapshots and save them in appropriate format. 5. Understand the basic functions of various consumer electronic goods.

Semester-VI (P-VIIIICE3)

Course Code	Course Name	Course Objectives	Course Outcomes
ELP VIII CE3	Power Electronics	<p>Students will try to learn:</p> <ol style="list-style-type: none"> 1. To equip the students with the basic knowledge of Power semiconductor Devices 2. To study the controlled Rectifiers, Inverters and DC to DC converters . 3. To Understand the working AC and DC Drives. 4. To Study the application of Power Electronics. 	<p>After successful completion of the course student will be able to</p> <ol style="list-style-type: none"> 1. Understand the working of Power Electronics Devices. 2. Understand working of Controlled Rectifiers ,Inverters and DC to DC converters. 3. Understand the Working of AC/DC Drives

