



MANNAR THIRUMALAI NAICKER COLLEGE

A Co-educational, Autonomous and Linguistic Minority Institution

Affiliated to Madurai Kamaraj University

Re-accredited with "A" Grade by NAAC

Pasumalai, Madurai – 625 004 Tamil Nadu.

CURRICULUM RELEVANCE TO THE LOCAL, REGIONAL, NATIONAL AND GLOBAL NEEDS

NAME OF THE PROGRAMME: B.Sc E&C

PROGRAMME CODE: UEL

PROGRAMME OUTCOMES

PO1: Apply the knowledge of mathematics, science fundamentals and technical abilities to the solution of complex problems

PO2: Identify, formulate, and analyze technical problems to arrive at substantiated conclusions using principles.

PO3: Design solutions for complex problems and design system components or processes that meet the specified needs with appropriate consideration for the public health, safety, cultural, societal and environmental conditions.

PO4: Create, select, and apply appropriate techniques, resources, and modern tools including prediction and modeling to technical activities with an understanding of the limitations

PO5: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

PO6: Recognize the need for and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological changes.



MANNAR THIRUMALAI NAICKER COLLEGE

A Co-educational, Autonomous and Linguistic Minority Institution

Affiliated to Madurai Kamaraj University

Re-accredited with "A" Grade by NAAC

Pasumalai, Madurai – 625 004 Tamil Nadu.

PROGRAMME SPECIFIC OUTCOMES

PSO1: Connect learning from Core and Disciplinary/Interdisciplinary elective courses of Electronics and Communication Science to assimilate technological advancements in the field for designing suppresses to arrive at the solution to societal problems.

PSO2: Acquire hardware and software skills pertinent to industry practices in the field of Electronics & Communication Science while acquiring soft skills like persistence, proper solutions through projects and industrial interactions.

PSO3: Ability to identify indigenous processes and components for producing high quality, compact, energy efficient and eco-friendly solutions at cost effective prices for existing and new applications related to Electronics & Communication industry.

PSO4: Focus on acquiring right knowledge of aptitude and attitude so as to be a candidate of best choice for higher education, placements or to become an Energetic and technical Entrepreneur in the society.

PSO5: Graduates will be able to apply fundamentals of electronics in various domains of analog and digital systems.



MANNAR THIRUMALAI NAICKER COLLEGE

A Co-educational, Autonomous and Linguistic Minority Institution

Affiliated to Madurai Kamaraj University

Re-accredited with "A" Grade by NAAC

Pasumalai, Madurai – 625 004 Tamil Nadu.

Sl.No	Course Code	Course Name	Course Outcomes
1.	21UELC11	SEMICONDUCTOR DEVICES	CO1: Explain the structure of the basic Semiconductor. CO2: Understand the characteristics, operations and application of Diodes and Special Diodes CO3: Understand the characteristics and operations of FET and UJT. CO4: Understand the characteristics and operations of Transistors CO5: Usage and working of opto electronics
2.	21UELA11	BASIC ELECTRICITY AND CIRCUITS	CO1: Remembering and recalling facts with specific answers CO2: Basic understanding of facts and stating main ideas with general answers CO3: Application oriented- Solving Problems CO4 : Examining, analyzing, presentation and make inferences with evidences CO5: Basic understanding of facts and stating main ideas with general answers
3.	21UELS11	ELECTRONIC INSTRUMENTATION	CO1: Define the working of electronic instruments. CO2: Summarize the concepts of RLC measurements using



MANNAR THIRUMALAI NAICKER COLLEGE

A Co-educational, Autonomous and Linguistic Minority Institution

Affiliated to Madurai Kamaraj University

Re-accredited with "A" Grade by NAAC

Pasumalai, Madurai – 625 004 Tamil Nadu.

			bridges CO3: Gain depth knowledge about the principles of oscilloscope CO4: Explain the knowledge about the power measurements. CO5: Put into practice and use the electronic Instruments
4.	21UELC21	ELECTRONIC CIRCUITS	CO1: Understand the concepts of rectifiers and regulators. CO2: Summarize about small signal amplifiers CO3: Analyse the functions of power amplifiers CO4: Distinguish the performance of negative as well as positive feedback circuits CO5: Design oscillators and multivibrators
5.	21UELS21	ELECTRONIC COMMUNICATION SYSTEMS	CO1: Describe the basic building blocks of communication systems CO2: Summarize the basic concept of communications. CO3: Apply the modulation and demodulation concepts in communication systems. CO4: Distinguish the operation CO5: Compare and contrast the types of communication systems
6.	21UELC31	Core Subjects DIGITAL ELECTRONICS	CO1: Understand the basics of Number systems and codes CO2: Realize the



MANNAR THIRUMALAI NAICKER COLLEGE

A Co-educational, Autonomous and Linguistic Minority Institution

Affiliated to Madurai Kamaraj University

Re-accredited with "A" Grade by NAAC

Pasumalai, Madurai – 625 004 Tamil Nadu.

			<p>operation of various logic gates and analyzing the outputs</p> <p>CO3: Analyze and design the Arithmetic and combinational logic circuits</p> <p>CO4: Analyze and design the Sequential logic circuits</p> <p>CO5: Understand the basics of analog-to-digital converter and digital -to -analog converter</p>
7.	21UITA31	Allied Subjects PROGRAMMING IN C	<p>CO1: Demonstrate an understanding of C programming language concepts</p> <p>CO2: Develop and implement applications in C using arrays and strings</p> <p>CO3: Design and develop programs, analyses and interprets the concept of functions and pointers.</p> <p>CO4: Develop applications in C using structures and Unions</p> <p>CO5: Relate the concepts of programming and develop confidence to learn the C language for life time</p>
8.	21UELS31	SKILL SUBJECTS COMPUTER	<p>CO1: Recognize and understand Basics of</p>



MANNAR THIRUMALAI NAICKER COLLEGE

A Co-educational, Autonomous and Linguistic Minority Institution

Affiliated to Madurai Kamaraj University

Re-accredited with "A" Grade by NAAC

Pasumalai, Madurai – 625 004 Tamil Nadu.

		ORIENTED OFFICE AUTOMATION	Computer CO2: Use and Practice of Word Processing CO3: Use and Practice of MS Excel CO4: Knowledge to Make Small Presentation CO5: Use and Practice of MS Access
9.	21UELN31	NON MAJOR ELECTIVE BASIC ELECTRONICS	CO1: Understand the theory basics of electronic components. CO2: Understand the simple theory and use of semiconductor. CO3: Utilization of electronic components in power supply circuits. CO4: Utilization of Electronic instruments and optical devices. CO5: Gain the knowledge about digital electronics.
10.	21UELC41	CORE SUBJECTS LINEAR INTEGRATED CIRCUITS	CO1: Understand the characteristics of Op-Amp CO2: Gain the knowledge about the linear applications of an Op-amp CO3: Gain the knowledge about the nonlinear applications of an Op-amp CO4: Understand the working of regulators and generators. CO5: Apply the concepts



MANNAR THIRUMALAI NAICKER COLLEGE

A Co-educational, Autonomous and Linguistic Minority Institution

Affiliated to Madurai Kamaraj University

Re-accredited with "A" Grade by NAAC

Pasumalai, Madurai – 625 004 Tamil Nadu.

			of special functions of ICs (555,565 and 566) in various circuits.
11.	21UMCA42	ALLIED SUBJECTS NUMERICAL APTITUDE	CO1: Acquire the knowledge of numbers. CO2: Understand the concepts of ratio and proportions. CO3: Appear for Competitive Examinations. CO4: Find HCF and LCM CO5: Understand the difference between ordinary interest and exact interest, and be able to calculate both.
12.	21UELS41	SKILL SUBJECTS FIBER OPTIC COMMUNICATION SYSTEMS	CO1: Understand the fundamentals of optical fiber CO2: Gain the knowledge about the Theory of transmission of optical signal CO3: Use and working of optical sources CO4: Understand the working of optical detectors CO5: Understanding the concept of optical fiber communication system
13.	21UELN41	NON MAJOR ELECTIVE ELECTRONICS IN EVERYDAY LIFE	CO1: Recognize and understand the use of Microwave oven CO2: Use and Practice of Washing machine



MANNAR THIRUMALAI NAICKER COLLEGE

A Co-educational, Autonomous and Linguistic Minority Institution

Affiliated to Madurai Kamaraj University

Re-accredited with "A" Grade by NAAC

Pasumalai, Madurai – 625 004 Tamil Nadu.

			CO3: Use and Practice of fridge and Air conditioners CO4: Use and Practice of home and office digital device CO5: Use and Practice of digital access devices
14.	21UELC51	MICROPROCESSOR INTERFACING AND ITS APPLICATIONS	CO1: Explain the 8085 microprocessor architecture. CO2: Write programs in 8085 using instruction set. CO3: Interface the 8085 microprocessor with various peripheral devices. CO4: Understand the concepts of 8086 architecture and instruction set. CO5: Write programs for their project development
15.	21UELC52	COMMUNICATION SYSTEMS	CO1: Understand the basic of EM waves and wave propagation. CO2: Analyze the performance of Analog Communication techniques CO3: Demonstrate the stages Pulse communication techniques. CO4: Understand the concepts of Digital communication CO5: Understand the wireless communication concepts
16.	21UELE52	Internet of Things	CO1: Study the concept of basic IoT



MANNAR THIRUMALAI NAICKER COLLEGE

A Co-educational, Autonomous and Linguistic Minority Institution

Affiliated to Madurai Kamaraj University

Re-accredited with "A" Grade by NAAC

Pasumalai, Madurai – 625 004 Tamil Nadu.

			CO2: Familiarize the principle of connected devices CO3: Gain knowledge about embedded devices CO4: Analyze different sensor Interface technology CO5: Analyze the IoT applications
17.	21UELE54	POWER ELECTRONICS	CO1: Understand the Concepts of the thyristor device working. CO2: Understand the concept of Turn on off mechanism of Thyristor. CO3: Acquire knowledge about basic concepts of inverters and Cyclo converters. CO4: Ability to analyze various types of Choppers. CO5: Apply the Thyristor devices in industrial needs.
18.	21UELS51	BIO-MEDICAL INSTRUMENTATION	CO1: Understand the Concept of bio-potential CO2: Understand the concept of biomedical signals and electrodes. CO3: Analyze the types of biomedical recorders. CO4: Understand the concepts of diagnostic equipment CO5: Analyze the modern imaging systems.
19.	21UELC61	8051 MICROCONTROLLER AND EMBEDDED SYSTEMS	CO1: Describe architecture and operation of Microcontroller 8051 CO2: Foster ability to understand the design



MANNAR THIRUMALAI NAICKER COLLEGE

A Co-educational, Autonomous and Linguistic Minority Institution

Affiliated to Madurai Kamaraj University

Re-accredited with "A" Grade by NAAC

Pasumalai, Madurai – 625 004 Tamil Nadu.

			<p>concept of interfacing Microcontroller with various Peripherals</p> <p>CO3: Apply the concepts of interfacing techniques</p> <p>CO4: Foster ability to understand the role of PIC Microcontroller in industry</p> <p>CO5: Importance of the features and functional description of ARM microcontroller.</p>
20.	21UELE61	SATELLITE COMMUNICATION	<p>CO1: Gain knowledge on Satellite Communication and frequency allocations.</p> <p>CO2: Able to analyze satellite mechanism and system performance.</p> <p>CO3: Gain the knowledge on space craft subsystems and TT&C.</p> <p>CO4: Understand the theory of transmission.</p> <p>CO5: Understand the applications of various satellite systems.</p>
21.	21UELE62	DIGITAL SIGNAL PROCESSING	<p>CO1: Understand Digital Signal Controllers and their Applications</p> <p>CO2: Design digital filters IIR and FIR filters</p> <p>CO3: Develop discrete form and cascade form of FIR and IIR system</p> <p>CO4: Analyze the concept of FFT and DFT</p> <p>CO5: Evaluate finite word length effects in signal processing</p>
22.	21UELE63	ROBOTICS	<p>CO1: Scribe the working concept and types of Robots</p>



MANNAR THIRUMALAI NAICKER COLLEGE

A Co-educational, Autonomous and Linguistic Minority Institution

Affiliated to Madurai Kamaraj University

Re-accredited with "A" Grade by NAAC

Pasumalai, Madurai – 625 004 Tamil Nadu.

			C02: Apply the knowledge of types of sensors and actuators. C03: Programming Languages for Robot design models C04: Understand the concept of Mobile Robotic Locomotion. C05: Study the various applications of Robots
23.	21UELE64	VLSI DESIGN	C01: Gain the knowledge on fabrication principles. C02: Able to analyze the electrical properties of MOS transistors. C03: Apply the appropriate layout design rule to create a VLSI layout for a design. C04: Understand the physical design steps and gain the knowledge on types of VLSI design styles C05: Gain the knowledge, analyze and apply test principles to evaluate the VLSI designs.
24.	21UELE65	MODERN TELEVISION SYSTEM	C01: Acquire knowledge on television fundamentals. C02: Study on Transmitter and receiver standards C03: Understand the Picture tube of color TV C04: Knowledge on performance of Color TV systems. C05: Familiarize Advanced TV Systems
25.	21UELE66	SENSORS AND	C01: Remembering the



MANNAR THIRUMALAI NAICKER COLLEGE

A Co-educational, Autonomous and Linguistic Minority Institution

Affiliated to Madurai Kamaraj University

Re-accredited with "A" Grade by NAAC

Pasumalai, Madurai – 625 004 Tamil Nadu.

		MEASUREMENTS	<p>concept of a transducer</p> <p>C02: Understand the principle of displacement and strain gauge techniques</p> <p>C03: Identify the concept of pressure sensors.</p> <p>C04: Classify types of flow meters.</p> <p>C05: Evaluate force and torque of sensors and transducers</p>
26.	21UCSS61	COMPUTER NETWORKS	<p>C01: Explain about building blocks of Computer Network, Components and Transmission media.</p> <p>C02: Demonstrate the Functionalities and Protocols in the layers of ISO/OSI Network Model.</p> <p>C03: Make use of the Data link layer protocols in Error detection and correction.</p> <p>C04: Apply Suitable Routing Strategies for a given network and choose appropriate access control, congestion control and congestion avoidance technique for given Traffic scenario</p> <p>C05: Assess the functions of Application layer Paradigms and Protocols and design for the real time applications.</p>