Department of Electronics
Sri Y N College(Autonomous)-Narsapur
Teaching Plan for the Academic Year 2020-21

Faculty/Instructor: **Mr. Vinaya Phaneendhra K**

Department: **Electronics**

Programme: **B.Sc. MPE & B.Sc. MECS**

Course: **CC-6E: Electronic Communication Systems** Semester: **V**

Credits: **4 + 2** Marks: **100 + 50** Class Size: **78**

Learning Objectives of the Course:

- This Course aims to describe the concepts of Electronics in Communication.
- Basic Concept & Block Diagram of Communication System, types of Noise & Noise parameters.
- Need of modulation, AM, types of AM & their comparison , block diagram of AM Transmitter & Receiver.
- Basics of Frequency Modulation, Bandwidth Requirements of FM, Block Diagram of FM Transmitter & Receiver, Comparison of AM & FM.
- Need for Sampling & types of Pulse Communication, types of Digital Communication techniques, concepts of TDMA, FDMA and their comparison.
- Basic Block Diagram & Introduction to Fiber Optic and Satellite communications.
- Basic Concepts of Cellular Mobile Communication, Architecture of Cellular Mobile Network, techniques like GSM, CDMA, Concepts of 4G & 5G.

Course Structure	
Unit- I (12 Lectures)	**Unit- II: (12 Lectures)**
Basics of Communication Systems: Introduction, Block diagram, Noise in Communication Systems, Types of Noise, Signal-to-Noise (S/N) ratio, Figure of Merit.	**Transmitters:** Introduction, AM Transmitters: AM Broadcast Transmitter; FM Transmitters: Directly Modulated FM Transmitter, FM Stereo Transmitter.
Modulation & Demodulation (Qualitative only): Introduction, Need for Modulation, Types, Amplitude Modulation: AM Modulating Amplifier, Amplitude Demodulation: AM Diode detector; Frequency Modulation: Varactor Diode Modulator, FM Discriminators: Ratio Detector.	**Receivers:** Introduction, AM Broadcast Receivers: Superheterodyne Receiver; FM Receivers: Stereo FM receiver.
	Antennas: Introduction to Antennas, Basic Principle, Types of Antennas
Unit- III: (14 Lectures)	**Unit- IV: (10 Lectures)**
Digital Communications: Introduction, Elements of Digital Communication System, Advantages, PCM, Sampling Theorem, Quantization, Digital Modulation Techniques: Concepts of ASK, FSK, PSK, QPSK(Qualitative only), Multiplexing: Frequency Division Multiplexing, Time Division Multiplexing, Pulse Modulation: Concepts of PAM, PWM, PPM	**Satellite Comminications:** Introduction to Satellite Communication, Satellite Orbits, Basic Components, Constructional features.
	Fiber Optic Communications: Basic Fiber Optic System, Advantages, Modes of propagation, Concept of Numerical Aperture, Basic Optical Communication System.
Unit- V: (12 Lectures)	
Cellular Mobile Communications: Basic Concept, Concept of Cell Sectoring and Cell Splitting, SIM number, IMEI number, Block Diagram of Mobile Communication Network, Idea of GSM, CDMA, TDMA and FDMA technologies., Block diagram of Mobile Phone handset, 4G and 5G Concepts.	

	Detailed Course Plan						
Unit/ Module	**Topic**	**Number of related Learning Objectives**	**Month & Week**	**Resources**	**Activity**	**ICT Tool/Platform/LMS**	**Number of Hours available**
Unit-I	Block diagram of Communication Systems, Noise in Communication Systems, Types of Noise, Signal-to-Noise (S/N) ratio, Figure of Merit.	1	August -2020 Week-1 & Week-2	PPT & Virtual Lab	1. Online Mode Teaching with Interactive sessions 2. Weekend Student Seminar	Zoom Platform	7
Unit-I	Introduction to Modulation & Demodulation**,** Need for Modulation, Types, AM Modulating Amplifier, AM Diode detector, Varactor Diode Modulator, Ratio Detector	2	August -2020 Week-3 & Week-4	PPT & Virtual Lab	1. Online Mode Teaching with Interactive sessions 2. Weekend Student Seminar 3. Assignment-1	Zoom Platform	7
Unit-II	Introduction to Transmitters AM Transmitters: AM Broadcast Transmitter; FM Transmitters: Directly Modulated FM Transmitter, FM Stereo Transmitter.	2	September -2020 Week-1 & Week-2	PPT & Virtual Lab	1. Online Mode Teaching with Interactive sessions 2. Weekend Student Seminar	Zoom Platform	6
Unit-II	Introduction to Receivers, AM Broadcast Receivers: Superheterodyne Receiver; FM Receivers: Stereo FM receiver.	2	September -2020 Week-3 & Week-4	PPT & Virtual Lab	1. Online Mode Teaching with Interactive sessions 2. Weekend Student Seminar	Virtual Class Room & Zoom Platform	5

Unit-II	Introduction to Antennas, Basic Principle, Types of Antennas	1	December-2020 Week-1 & Week-2	PPT & Virtual Lab	1. Blended Mode Teaching with Interactive sessions 2. Weekend Student Seminar 3. Assignment-2	Virtual Class Room & Zoom Platform	6
Unit-III	Elements of Digital Communication System, Advantages, PCM, Sampling Theorem, Quantization, Concepts of ASK, FSK, PSK, QPSK,	1	December-2020 Week-3 & Week-4	PPT & Virtual Lab	1. Blended Mode Teaching with Interactive sessions 2. Weekend Student Seminar	Virtual Class Room & Zoom Platform	8
Unit-III	Frequency Division Multiplexing, Time Division Multiplexing, Pulse Modulation: Concepts of PAM, PWM, PPM	1	January-2021 Week-3 & Week-4	PPT & Virtual Lab	1. Blended Mode Teaching with Interactive sessions 2. Weekend Student Seminar 3. Assignment-3	Virtual Class Room & Zoom Platform	5
Unit-IV	Introduction to Satellite Communication, Satellite Orbits, Basic Components, Constructional features.	1	February-2021 Week-1 & Week-2	PPT & Virtual Lab	1. Blended Mode Teaching with Interactive sessions 2. Weekend Student Seminar	Virtual Class Room & Zoom Platform	7
Unit-IV	Basic Fiber Optic System, Advantages, Modes of propagation, Concept of Numerical Aperture, Basic Optical Communication System.	1	February-2021 Week-3 & Week-4	PPT & Virtual Lab	1. Blended Mode Teaching with Interactive sessions 2. Weekend Student Seminar 3. Assignment-4	Virtual Class Room & Zoom Platform	7

Unit-V	Basic Concept, Concept of Cell Sectoring and Cell Splitting, SIM number, IMEI number, Block Diagram of Mobile Communication Network,	1	March-2021 Week-1	PPT & Virtual Lab	1. Blended Mode Teaching with Interactive sessions 2. Weekend Student Seminar	Virtual Class Room & Zoom Platform	7
Unit-V	Idea of GSM, CDMA, TDMA and FDMA technologies., Block diagram of Mobile Phone handset, 4G and 5G Concepts.	1	March-2021 Week-2	PPT & Virtual Lab	1. Blended Mode Teaching with Interactive sessions 2. Weekend Student Seminar 3. Assignment-5	Virtual Class Room & Zoom Platform	5

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Teaching Plan for the Academic Year 2020-21

Faculty/Instructor: **Mr. Vinaya Phaneendhra K**

Department: **Electronics**

Programme: **B.Sc. MPE & B.Sc. MECS**

Course: **CC-7E: Microcontrollers & Interfacing** Semester: **VI**

Credits: **4 + 2** Marks: **100 + 50** Class Size: **65**

Learning Objectives of the Course:

- This Course familiarizes students to the designing and development of Microcontroller Systems.
- Here, students will learn about the 8051 programming and Interfacing.

Course Structure	
Unit- I (12 Lectures)	**Unit- II: (12 Lectures)**
Introduction to Microcontrollers: Introduction to Microcontrollers, Harvard vs Von Neumann Architectures, RISC & CISC Microcontrollers.	**Programming of 8051: Part-1:** Introduction, Program Counter, PSW Register, Stack, Adressing Modes, Instruction Set, Jump, Loop & Call Instructions.
The 8051 Microcontroller: Overview of 8051 family, Key Features of 8051, Block Diagram of 8051 Microcontroller, Architecure of 8051, Pin Diagram & Memory Organization of 8051.	**Programming of 8051: Part-2:** Programs in Assembly Language: Addition, Multiplication, Division, Largest/Smallest & Ascending/Descending Order (all 8-bit data).
Unit- III: (12 Lectures)	**Unit- IV: (12 Lectures)**
I/O Port Prograqmming of 8051: Introduction, I/O Ports Pins Description and their functions.	**Serial Port Programming of 8051:** Basics of Serial Communication, 8051 Serial Communication, 8051 Connection to RS232, 8051 Serial Communication Modes.
Timer & Counter Programming of 8051: Introduction to Timers & Counters, Timer/Counter Opeartion Modes.	**Interrupts Programming of 8051:** Introduction to 8051 Interrupts, 8051 Interrupt Structure, Timer Interrupts, Externel Hardware Interrupts & Serial Communication Interrupts. .
Unit- V: (12 Lectures)	
Interfacing 8051 Microcontroller to Peripherals: Part-1: ADC & DAC Interfacing.	**Interfacing 8051 Microcontroller to Peripherals: Part-2:** LCD, LED & Stepper Motor Interfacing.

	Detailed Course Plan						
Unit/ Module	**Topic**	**Number of related Learning Objectives**	**Month & Week**	**Resources**	**Activity**	**ICT Tool/Platform/LMS**	**Number of Hours available**
Unit-I	Introduction to Microcontrollers, Harvard vs Von Neumann Architectures, RISC & CISC Microcontrollers.	1	April-2021 Week-4	PPT & Virtual Lab	1. Online Mode Teaching with Interactive sessions 2. Weekend Student Seminar	Zoom Platform	6
Unit-I	Overview of 8051 family, Key Features of 8051, Block Diagram of 8051 Microcontroller, Architecure of 8051, Pin Diagram & Memory Organization of 8051.	1	May-2021 Week-1	PPT & Virtual Lab	1. Online Mode Teaching with Interactive sessions 2. Weekend Student Seminar 3. Assignment-1	Zoom Platform	6
Unit-II	Introduction, Program Counter, PSW Register, Stack, Adressing Modes, Instruction Set, Jump, Loop & Call Instructions.	2	May-2021 Week-2	PPT & Virtual Lab	1. Online Mode Teaching with Interactive sessions 2. Weekend Student Seminar	Zoom Platform	6
Unit-II	Programs in Assembly Language: Addition, Multiplication, Division, Largest/Smallest & Ascending/Descending Order (all 8-bit data).	2	May-2021 Week-3	PPT & Virtual Lab	1. Online Mode Teaching with Interactive sessions 2. Weekend Student Seminar 3. Assignment-2	Zoom Platform	5
Unit-III	Introduction, I/O Ports Pins	2	May-2021	PPT & Virtual	1. Online Mode	Zoom	6

	Description and their functions.		Week-4	Lab	Teaching with Interactive sessions 2. Weekend Student Seminar	Platform	
Unit-III	Introduction to Timers & Counters, Timer/Counter Opeartion Modes.	2	June-2021 Week-1	PPT & Virtual Lab	1. Online Mode Teaching with Interactive sessions 2. Weekend Student Seminar 3. Assignment-3	Zoom Platform	6
Unit-IV	Basics of Serial Communication, 8051 Serial Communication, 8051 Connection to RS232, 8051 Serial Communication Modes.	2	June-2021 Week-2	PPT & Virtual Lab	1. Online Mode Teaching with Interactive sessions 2. Weekend Student Seminar	Zoom Platform	6
Unit-IV	Introduction to 8051 Interrupts, 8051 Interrupt Structure, Timer Interrupts, Externel Hardware Interrupts & Serial Communication Interrupts.	2	June-2021 Week-3	PPT & Virtual Lab	1. Blended Mode Teaching with Interactive sessions 2. Weekend Student Seminar 3. Assignment-4	Virtual Class Room & Zoom Platform	6
Unit-V	ADC & DAC Interfacing.	2	June-2021 Week-4	PPT & Virtual Lab	1. Blended Mode Teaching with Interactive sessions 2. Weekend Student Seminar	Virtual Class Room & Zoom Platform	6
Unit-V	LCD, LED & Stepper Motor Interfacing	2	July-2021 Week-1	PPT & Virtual Lab	1. Blended Mode Teaching with Interactive sessions 2. Weekend Student Seminar 3. Assignment-5	Virtual Class Room & Zoom Platform	6

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Department: **Electronics**

Programme: **B.Sc. MPE & B.Sc. MECS**

Course: **CE-8EA: Embedded Systems Design** Semester: **VI**

Credits: **4 + 2** Marks: **100 + 50** Class Size: **38**

Learning Objectives of the Course:

- To make student familiar with principles, features, classification, architectures and design issues involved in embedded system.
- The selection criteria for choosing microcontroller based on system requirement in embedded systems is also discussed.
- A balance between hardware and software exposure is maintained. Syllabus covers both assembly and C programming. Latest protocols like SPI and TWI are also included.

Course Structure	
Unit- I (12 Lectures)	**Unit- II: (12 Lectures)**
Introduction to Embedded Systems: Overview of Embedded Systems, Features, Applications, Architecture of an Embedded System, Development and Testing Tools, Introduction to Application Softwarwe & Communication Software.	**The Process of Embedded System Development:** The Development Process using Waterfall Model. **Advanced Communication Principles:** Need for communication interfaces, Parallel Communication, Serial Communication, Wireless Communication, Serial Protocols: I^2C, CAN and USB. Parallel Protocols: PCI BUS and ARM BUS. Wireless Protocols: Bluetooth, and IEEE 802.11.
Unit- III: (12 Lectures)	**Unit- IV: (12 Lectures)**
Embedded Systems Using AVR Microcontrollers: Introduction to AVR Microcontrollers, Features of AVR ATmega32 Microcontroller, Architecture of AVR ATmega32, General Purpose Registers (GPRs), Status Register, Memories of AVR ATmega32	**DSP-based Embedded Systems:** Need for DSP-based Embedded Systems, An Overview of Digital Signal Processing, Applications of DSP, Digital Signal Processor Architecture, DSP-based Embedded System Design Process.
Unit- V: (12 Lectures)	
Robotics: Overview of Robotics, Components of Robot, Robot Locomotion-Types of robot Locomotion, ,Types of Robot, Use of Embedded Systems in Robotics ,Applications of Robotics. **Artificial Intelligence (AI):** Introduction, contributions of AI, Applications of AI, Research areas of AI.	

	Detailed Course Plan						
Unit/ Module	**Topic**	**Number of related Learning Objectives**	**Month & Week**	**Resources**	**Activity**	**ICT Tool/Platform/LMS**	**Number of Hours available**
Unit-I	Overview of Embedded Systems, Features, Applications, Architecture of an Embedded System,	2	April-2021 Week-4	PPT & Virtual Lab	1. Online Mode Teaching with Interactive sessions 2. Weekend Student Seminar	Zoom Platform	7
Unit-I	Development and Testing Tools, Introduction to Application Softwarwe & Communication Software.	1	May-2021 Week-1	PPT & Virtual Lab	1. Online Mode Teaching with Interactive sessions 2. Weekend Student Seminar 3. Assignment-1	Zoom Platform	5
Unit-II	The Development Process using Waterfall Model. Need for communication interfaces, Parallel Communication, Serial Communication,	1	May-2021 Week-2	PPT & Virtual Lab	1. Online Mode Teaching with Interactive sessions 2. Weekend Student Seminar	Zoom Platform	4
Unit-II	Wireless Communication, Serial Protocols: I^2C, CAN and USB. Parallel Protocols: PCI BUS and ARM BUS. Wireless Protocols: Bluetooth, and	1	May-2021 Week-3	PPT & Virtual Lab	1. Online Mode Teaching with Interactive sessions 2. Weekend Student Seminar 3. Assignment-2	Zoom Platform	7

	IEEE 802.11.						
Unit-III	Introduction to AVR Microcontrollers, Features of AVR ATmega32 Microcontroller, Architecture of AVR ATmega32	2	May-2021 Week-4	PPT & Virtual Lab	1. Online Mode Teaching with Interactive sessions 2. Weekend Student Seminar	Zoom Platform	7
Unit-III	General Purpose Registers (GPRs), Status Register, Memories of AVR ATmega32	3	June-2021 Week-1	PPT & Virtual Lab	1. Online Mode Teaching with Interactive sessions 2. Weekend Student Seminar 3. Assignment-3	Zoom Platform	5
Unit-IV	Need for DSP-based Embedded Systems, An Overview of Digital Signal Processing	1	June-2021 Week-2	PPT & Virtual Lab	1. Online Mode Teaching with Interactive sessions 2. Weekend Student Seminar	Zoom Platform	5
Unit-IV	Applications of DSP, Digital Signal Processor Architecture, DSP-based Embedded System Design Process	1	June-2021 Week-3	PPT & Virtual Lab	1. Blended Mode Teaching with Interactive sessions 2. Weekend Student Seminar 3. Assignment-4	Virtual Class Room & Zoom Platform	6
Unit-V	Overview of Robotics, Components of Robot, Robot Locomotion-Types of robot Locomotion, ,Types of Robot, Use of Embedded Systems in Robotics ,Applications of Robotics.	1	June-2021 Week-4	PPT & Virtual Lab	1. Blended Mode Teaching with Interactive sessions 2. Weekend Student Seminar	Virtual Class Room & Zoom Platform	7

Unit-V	Introduction, contributions of AI, Applications of AI, Research areas of AI.	1	July-2021 Week-1	PPT & Virtual Lab	1. Blended Mode Teaching with Interactive sessions 2. Weekend Student Seminar 3. Assignment-5	Virtual Class Room & Zoom Platform	5

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Department: **Electronics**

Programme: **B.Sc. MPE & B.Sc. MECS**

Course: **CE-8EC: Power Electronics** Semester: **VI**

Credits: **4 + 2** Marks: **100 + 50** Class Size: **38**

Learning Objectives of the Course:

- This course deals with use of electronics for control and conversion of electrical power.
- The concept of high power devices, their construction and their applications is discussed.
- The concept of converters and inverters is important to evolve their applications for DC to AC and AC to AC conversion.
- Its importance carries good relevance with regard to the high demand of battery operated vehicles. Electric motors are discussed in detail.

Course Structure	
Unit- I (12 Lectures)	**Unit- II: (12 Lectures)**
Power Electronics: Introduction, Need for Semiconductor Power devices, Block diagram of Power Electronic System, Semiconductor Power Devices -Thyristor family, Classification of Power Electronic Systems and Applications. **Silicon Controlled Rectifier (SCR) or Thyristor-** Structure and basic operation, Static V-I characteristics, Two transistor analogy, Snubber Circuit.	**Power Devices: DIAC and TRIAC**: Basic structure, working and V-I characteristics of DIAC and TRIAC. **Power MOS FET**: Basic structure, Operation modes, Switching characteristics. **Power BJT**: Basic Structure, Static(Study State) Characteristics, Second break down. **Insulated Gate Bipolar Transistors (IGBT):** Basic structure, I-V Characteristics, Switching characteristics
Unit- III: (12 Lectures)	**Unit- IV: (12 Lectures)**
DC Choppers: Introduction to DC choppers, Types of DC choppers, Block diagram of DC chopper and Principle of operation, Classification of DC Choppers, principle of operation and analysis of Step-down (Buck), Step-up (Boost), Step down-up (Buck-boost) choppers without isolation, Morgan Chopper	**Power Inverters:** Principle of operation of single phase Inverter, Applications and Classification of Inverters, Series and Parallel Inverters – Circuit description**,** Operation modes with wave forms. Single phase Half bridge and Full Bridge Inverters with R load. Performance parameters of Inverters, Simple Pulse Width Modulation(PWM) Techniques used in Inverters.
Unit- V: (12 Lectures)	
Applications of Power Electronics Devices: Need and function of UPS, Block diagram of UPS system, Need and function of SMPS, Block diagram and working of SMPS system. Static AC and DC circuit breakers- HVDC Transmission, Advantages. RF heating - Principle of Induction heating and Dielectric heating, Applications. Automatic Battery Charger. Simple Emergency Light System	

	Detailed Course Plan						
Unit/ Module	**Topic**	**Number of related Learning Objectives**	**Month & Week**	**Resources**	**Activity**	**ICT Tool/Platform/LMS**	**Number of Hours available**
Unit-I	Introduction to Power Electronics, Need for Semiconductor Power devices, Block diagram of Power Electronic System, Semiconductor Power Devices -Thyristor family, Classification of Power Electronic Systems and Applications.	1	April-2021 Week-4	PPT & Virtual Labs	1. Online Mode Teaching with Interactive sessions 2. Weekend Student Seminar	Zoom Platform	5
Unit-I	Silicon Controlled Rectifier (SCR) or Thyristor-Structure and basic operation, Static V-I characteristics, Two transistor analogy, Snubber Circuit	2	May-2021 Week-1	PPT & Virtual Lab	1. Online Mode Teaching with Interactive sessions 2. Weekend Student Seminar 3. Assignment-1	Zoom Platform	7
Unit-II	Power Devices: DIAC and TRIAC: Basic structure, working and V-I characteristics of DIAC and TRIAC. Power MOS FET: Basic structure, Operation	2	May-2021 Week-2	PPT & Virtual Lab	1. Online Mode Teaching with Interactive sessions 2. Weekend Student Seminar	Zoom Platform	6

	modes, Switching characteristics						
Unit-II	Power BJT: Basic Structure, Static(Study State) Characteristics, Second break down. Insulated Gate Bipolar Transistors (IGBT): Basic structure, I-V Characteristics, Switching characteristics	1	May-2021 Week-3	PPT & Virtual Lab	1. Online Mode Teaching with Interactive sessions 2. Weekend Student Seminar 3. Assignment-2	Zoom Platform	6
Unit-III	Introduction to DC choppers, Types of DC choppers, Block diagram of DC chopper and Principle of operation, Classification of DC Choppers,	3	May-2021 Week-4	PPT & Virtual Lab	1. Online Mode Teaching with Interactive sessions 2. Weekend Student Seminar	Zoom Platform	7
Unit-III	Principle of operation and analysis of Step-down (Buck), Step-up (Boost), Step down-up (Buck-boost) choppers without isolation, Morgan Chopper.	3	June-2021 Week-1	PPT & Virtual Lab	1. Online Mode Teaching with Interactive sessions 2. Weekend Student Seminar 3. Assignment-3	Zoom Platform	5
Unit-IV	Principle of operation of single phase Inverter, Applications and Classification of Inverters, Series and Parallel Inverters – Circuit description, Operation modes with wave forms.	2	June-2021 Week-2	PPT & Virtual Lab	1. Online Mode Teaching with Interactive sessions 2. Weekend Student Seminar	Zoom Platform	5

Unit-IV	Single phase Half bridge and Full Bridge Inverters with R load. Performance parameters of Inverters, Simple Pulse Width Modulation(PWM) Techniques used in Inverters.	1	June-2021 Week-3	PPT & Virtual Lab	1. Blended Mode Teaching with Interactive sessions 2. Weekend Student Seminar 3. Assignment-4	Virtual Class Room & Zoom Platform	6
Unit-V	Need and function of UPS, Block diagram of UPS system, Need and function of SMPS, Block diagram and working of SMPS system.	2	June-2021 Week-4	PPT & Virtual Lab	1. Blended Mode Teaching with Interactive sessions 2. Weekend Student Seminar	Virtual Class Room & Zoom Platform	6
Unit-V	Static AC and DC circuit breakers- HVDC Transmission, Advantages. RF heating - Principle of Induction heating and Dielectric heating, Applications. Automatic Battery Charger. Simple Emergency Light System	2	July-2021 Week-1	PPT & Virtual Lab	1. Blended Mode Teaching with Interactive sessions 2. Weekend Student Seminar 3. Assignment-5	Virtual Class Room & Zoom Platform	6

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Faculty/Instructor: **Mr. Vinaya Phaneendhra K**

Department: **Electronics**

Programme: **B.Sc. MPE & B.Sc. MECS**

Course: **CC-2E: Linear and Digital Integrated Circuits** Semester: **II**

Credits: **4 +2** Marks: **100 + 50** Class Size: **74**

Learning Objectives of the Course:

- This Course aims to provide the basic knowledge of Linear and Digital Electronics.
- It discusses about the Operational Amplifier and its Applications. It introduces the Number Systems such as Decimal, Binary, Octal and Hexadecimal Number Systems along with their Applications in Arithmetic Circuits.
- Boolean Algebra and Combinational Logic Circuits are also discussed.

Course Structure	
Unit-1 (14 Lectures)	**Unit-II(14 Lectures)**
Operational Amplifiers (Black Box Approach): Characteristics of an Ideal and Practical Operational Amplifier (IC 741), Block Diagram of Operational Amplifier, CMRR, Slew Rate and Concept of Virtual Ground.	**Number Systems and Codes:** Decimal, Binary, Octal and Hexadecimal Conversions, BCD Code, Addition, Subtraction by 2's Complement Method.
Applications of Operational Amplifiers: (1) Inverting and Non-inverting Amplifiers, (2) Adder, (3) Subtractor, (4) Differentiator, (5) Integrator, (6) Wien Bridge Oscillator, (7) Comparator, (8) Active Filters(Basics): Low Pass and High Pass Filters.	**Logic Gates & Boolean Algebra:** Digital IC Logic Gates, NAND & NOR as Universal Gates, Boolean Laws, Demorgan's Theorems, Standard Representation of Logic Functions (SOP and POS), Minimization Techniques (Karnaugh Map Minimization up to 4 Variables for SOP).
Unit-III (10 Lectures)	**Unit-IV (12 Lectures)**
Combinational Logic Circuits: Half Adder, Full Adder, Half Subtractor, Full Subtractor, Parallel Binary Adder.	**Sequential Logic Circuits:** S-R Flip-Flop, Clocked R-S Flip-Flop, D Flip-Flop, J-K Flip-Flop, Master-Slave J-K Flip-Flop, Conversion of J-K Flip-Flop into D and T Flip-Flops.
Data Processing Circuits: Multiplexer (4:1), De-multiplexer (1:4), Encoder (8-line to 3- line) and Decoder (3-line to 8-line).	**Shift Registers:** Serial-in-Serial-out, Serial-in-Parallel-out, Parallel-in-Serial-out and Parallel- in-Parallel-out Shift Registers (only up to 4 bits).
Unit-V (10 Lectures)	
Counters: Asynchronous Counters: Mod-16, Mod-10(Decade Counter), Synchronous Counters: 4-bit Up and Down Counters.	
Data Converters: Introduction, Digital to Analog (DAC) Converters: 4-bit Binary Weighted Resistor DAC, 4-bit R-2R Ladder DAC, Analog to Digital Converters (ADC): Successive Approximation ADC.	

	Detailed Course Plan						
Unit/ Module	**Topic**	**Number of related Learning Objectives**	**Month & Week**	**Resources**	**Activity**	**ICT Tool/Platform/LMS**	**Number of Hours available**
Unit-I	Characteristics of an Ideal and Practical Operational Amplifier (IC 741), Block Diagram of Operational Amplifier, CMRR, Slew Rate and Concept of Virtual Ground..	1	September -2021 Week-2	PPT & Virtual Lab	1. Face-to-Face Mode Teaching with Interactive sessions 2. Weekend Student Seminar	Virtual Class Room	6
Unit-I	(1) Inverting and Non-inverting Amplifiers, (2) Adder, (3) Subtractor, (4) Differentiator, (5) Integrator, (6) Wien Bridge Oscillator, (7) Comparator, (8) Active Filters(Basics): Low Pass and High Pass Filters.	1	September -2021 Week-3	PPT & Virtual Lab	1. Face-to-Face Mode Teaching with Interactive sessions 2. Weekend Student Seminar 3. Assignment-1	Virtual Class Room	6
Unit-II	Decimal, Binary, Octal and Hexadecimal Conversions, BCD Code, Addition, Subtraction by 2's Complement Method.	1	September -2021 Week-4	PPT & Virtual Lab	1. Face-to-Face Mode Teaching with Interactive sessions 2. Weekend Student Seminar	Virtual Class Room	7
Unit-II	Digital IC Logic Gates, NAND & NOR as Universal Gates, Boolean Laws, Demorgan's Theorems, Standard Representation of	1	October -2021 Week-1	PPT & Virtual Lab	1. Face-to-Face Mode Teaching with Interactive sessions 2. Weekend Student Seminar	Virtual Class Room	6

	Logic Functions (SOP and POS), Minimization Techniques (Karnaugh Map Minimization up to 4 Variables for SOP).				3. Assignment-2		
Unit-III	Half Adder, Full Adder, Half Subtractor, Full Subtractor, Parallel Binary Adder	1	October -2021 Week-2	PPT & Virtual Lab	1. Face-to-Face Mode Teaching with Interactive sessions 2. Weekend Student Seminar	Virtual Class Room	5
Unit-III	Multiplexer (4:1), De-multiplexer (1:4), Encoder (8-line to 3- line) and Decoder (3-line to 8-line).	1	October -2021 Week-3	PPT & Virtual Lab	1. Face-to-Face Mode Teaching with Interactive sessions 2. Weekend Student Seminar 3. Assignment-3	Virtual Class Room	6
Unit-IV	S-R Flip-Flop, Clocked R-S Flip-Flop, D Flip-Flop, J-K Flip-Flop, Master-Slave J-K Flip-Flop, Conversion of J-K Flip-Flop into D and T Flip-Flops.	1	October -2021 Week-4	PPT & Virtual Lab	1. Face-to-Face Mode Teaching with Interactive sessions 2. Weekend Student Seminar	Virtual Class Room	7
Unit-IV	Serial-in-Serial-out, Serial-in-Parallel-out, Parallel-in-Serial-out and Parallel- in-Parallel-out Shift Registers (only up to 4 bits).	1	November -2021 Week-1	PPT & Virtual Lab	1. Face-to-Face Mode Teaching with Interactive sessions 2. Weekend Student Seminar 3. Assignment-4	Virtual Class Room	6

Unit-V	Asynchronous Counters: Mod-16, Mod-10(Decade Counter), Synchronous Counters: 4-bit Up and Down Counters.	1	November -2021 Week-2	PPT & Virtual Lab	1. Face-to-Face Mode Teaching with Interactive sessions 2. Weekend Student Seminar	Virtual Class Room	5
Unit-V	Introduction, Digital to Analog (DAC) Converters: 4-bit Binary Weighted Resistor DAC, 4-bit R-2R Ladder DAC, Analog to Digital Converters (ADC): Successive Approximation ADC.	1	November -2021 Week-3	PPT & Virtual Lab	1. Face-to-Face Mode Teaching with Interactive sessions 2. Weekend Student Seminar 3. Assignment-5	Virtual Class Room	6

DEPT. OF ELECTRONICS, SRI Y.N.COLLEGE (Autonomous), NARSAPUR, W.G.Dt.

ANNUAL CURRICULAM PLAN-YEAR: 2020-21

Subject: Electronics Class: I B.Sc. Paper: I (Circuit Analysis & Electronic Devices) - Semester –I

Name of the Faculty: ***Dr.Ch Kanaka Rao Lecturer in Electronics***

				Curricular Activity					Co-curricular Activity			
S.No.	**Month & week**	**Hours Available**	**Syllabus-topic**	**Additional Inputs Value Addition**	**Activity**	**Hours Allotted**	**whether Conducted**	**If not alternate dates**	**Activity**	**Hours Allotted**	**Weather Conducted**	**if not alternate dates**
1	Mar,'21 1,2,3&4	3	Bridge course: Units and Dimensions, R,L,C components.	PPT on basics of R,L,&C Components	Teaching	3			Assignment			
2	Apr,'21 1,2,3&4	11+12	Concepts of ideal as well as voltage and current sources Some definitions. Kirchhoffs current law and voltage law and their explanation. problems	PPT on Voltage sources and currents sources.	Teaching Unit test Practical	10 1 12				Student seminars will be conducted 2nd week of this month.		
3	May,'21 1 & 2	5+6	Method of solving AC and DC circuits by Kirchhoff's laws, Branch current method, Nodal voltage method, Star and delta transformations		Teaching practical	5 6			Assignment			
4	May,'21 3 & 4	6+6	Superposition theorem, Maximum power transfer theorem, Thevenin's theorem and related problems	PPT on theorems	Teaching Unit test Practical.	5 1 6			Assignment			
5	June,'21 1 & 2	11+12	Nortons's theorem, Reciprocity theorem, Milliman's theorem and their proofs. Problems on the theorems. Frequency response of RC and RL circuits, their action as Low pass and High pass filters		Teaching Unit test Practical	7 2 12			Remedial classes	2 Student seminars will be conducted 2nd week of this month.		
6	June,'21 3 & 4	5+6	Passive differentiating and integrating circuits and related problems I Mid syllabus revision and solutions to problems	PPT on filters	Teaching Practical	5 6			Assignment	Prepare students to MID and Semester END exams by evaluating old question papers.		
Mid exams for semesters I will be commenced from First week of July 2021 & Follows Semester END examinations.												

DEPT. OF ELECTRONICS, SRI Y.N.COLLEGE (Autonomous), NARSAPUR, W.G.Dt.

ANNUAL CURRICULAM PLAN-YEAR: 2020-21

Subject: Electronics **Class:** III B.Sc. **Paper:** IVA (The 8085 Microprocessor & Applications) **- Semester –V**

Name of the Faculty: ***Dr.Ch kanaka Rao, Lecturer in Electronics.***

				Curricular Activity					Co-curricular Activity			
S.No.	**Month & week**	**Hours Available**	**Syllabus-topic**	**Additional Inputs Value Addition**	**Activity**	**Hours Allotted**	**whether Conducted**	**If not alternate dates**	**Activity**	**Hours Allotted**	**Weather Conducted**	**if not alternate dates**
1	Aug,'20 3&4	9	*Introduction to Microprocessor:* Intel 8085 Microprocessor: Architecture of 8085 - Central Processing Unit (CPU)- Arithmetic and Logical Unit – Timing and Control Unit - Registers organization Address, Data and Control Buses - Pin configuration of 8085 and its description - Instruction cycle, Machine cycle, Fetch and Execute cycles. Timing diagrams.	PPT's on Architecture of 8085 PPT on Pin configuration	Teaching Unit test	8 1			Assignment			
2	Sep,'20 1,2,3&4	12+24	***Instruction set of Intel 8085:*** Instruction and Data formats, Instruction types, Addressing modes –Direct addressing, Register addressing, Immediate addressing, Register Indirect addressing, and implicit addressing. Classification of Instruction set: Data transfer group, Arithmetic group, Logical group, Branch group, and Stack, I/O and Machine control group	PPT class on Addressing modes PPT on instruction set.	Teaching Unit test Practical	11 1 24			Assignment	Student seminars will be conducted 2nd week of this month.		
3	Sep,'20 1,2,3&4	6+12	***Assembly Language Programming:*** Writing Assembly language programs (Examples of 8- and 16- bit Addition, Subtraction, Multiplication and Division - Finding the Largest and Smallest number in an 8-bit data array)		Teaching Unit test practical	5 1 12						
4	Sep,'20 1,2,3&4	6+12	Programming examples using Stacks and Subroutines. Debugging a program, Assembler directives - Interrupts and Interrupt structure of 8085	PPT on interrupts	Teaching Unit test Practical	5 1 12						
5	oct,'20 1 & 2	12+24	***Interfacing peripherals:*** Programmable Interfacing devices 8255, 8259, 8257, 8251 their important features, pin diagrams and block diagrams	PPT on all IC's	Teaching Unit test Practical	9 1 24			Assignment Remedial	2		

									Classes.			
6	Nov,'20 3 & 4	6+12	. Introduction to Data converters -A/D converter - Successive approximation type, D/A converter-R-2R ladder resistive type.		Teaching Practical	6 12			Assignment	Prepare students to MID and Semester END exams by evaluating old question papers.		
Mid exams for semesters V will be commenced Second week of December 2020 and Follows Semester END examinations.												

DEPT. OF ELECTRONICS, SRI Y.N.COLLEGE (Autonomous), NARSAPUR, W.G.Dt.

ANNUAL CURRICULAM PLAN-YEAR: 2020-21

Subject: Electronics **Class: II B.Sc.** **Paper: III**: **(Analog Electronics and Digital Principles) - Semester -III**

Name of the Faculty: ***Dr.Ch. Kanaka Rao Lecturer in Electronics.***

				Curricular Activity					Co-curricular Activity			
S.No.	**Month & week**	**Hours Available**	**Syllabus-topic**	**Additional Inputs Value Addition**	**Activity**	**Hours Allotted**	**whether Conducted**	**If not alternate dates**	**Activity**	**Hours Allotted**	**Weather Conducted**	**if not alternate dates**
1	Aug,'20 3&4	6	**Operational Amplifier: (10 Hrs)** Basic Op-amp, Characteristics of an ideal and practical Op-amp (IC 741), Block diagram of Op-Amp, Op-amp Parameters, Virtual Ground, differential amplifier.	ppt on op-amp block diagram	Teaching Unit test	5 1			Assignment			
2	Sep,'20 1,2,3&4	8+12	Inverting, Non-Inverting amplifiers, Adder, subtractor Voltage follower, Integrator, Differentiator, Voltage to current and Current to voltage converters., Logarithmic amplifier. Numerical problems.	PPT on Integrator & differentiator	Teaching Unit test Practical	7 1 12			Assignment			
3	Sep,'20 1,2,3&4	4+6	Mid syllabus revision and problems on Mid syllabus		Teaching Unit test practical	3 1 6						
4	Sep,'20 1,2,3&4	4+6	**Applications of Op-amps:** Voltage regula Comparator & Zero crossing detector, Schmitt Trigge		Teaching Practical.	4 6			Student seminars will be conducted 2nd week of this month, November ,2016			
5	oct,'20 1 & 2	8+12	. Wien's bridge Oscillator, Triangular Wave Generato Active filters (Basics): low pass, high pass & Band pas filters. **IC555 Timer:** Functional block Diagram, Astable, Monostable, and Bi-stable multivibrator circuits working and their applications. Numerical problems		Teaching Unit test Practical	5 1 12			Assignment Remedial Classes.	2		
6	Nov,'20 3 & 4	2+3	Revision of Mid II syllabus		Teaching Practical	2 3			Assignment	Prepare students to MID and Semester END exams by evaluating old question papers.		

Mid exams for semesters III will be commenced Second week of December 2020 and Follows Semester END examinations.

DEPT. OF ELECTRONICS, SRI Y.N.COLLEGE (Autonomous), NARSAPUR, W.G.Dt.

ANNUAL CURRICULAM PLAN-YEAR: 2020-21

Subject: Electronics **Class: III** B.Sc. **Paper:** VIIIB **Title of the Paper: Consumer Electronics CE-3**

Name of the Faculty: Dr.Ch Kanaka Rao, Lecturer in Electronics.

				Curricular Activity					Co-curricular Activity			
S.No.	**Month & week**	**Hours Available**	**Syllabus-topic**	**Additional Inputs Value Addition**	**Activity**	**Hours Allotted**	**whether Conducted**	**If not alternate dates**	**Activity**	**Hours Allotted**	**Weather Conducted**	**if not alternate dates**
1	Apr,'21 4 & May,'21 1	6+12	Microwave Ovens: Microwaves (range used in Mircrowave Ovens), Microwave Oven block diagram, LCE timer with Alarm, Single Chip controllers. Types of Microwaves, Wiring and Safety instructions, Care and Cleanings.	PPT on Microwave Oven	Teaching Unit test Practicals	5 1 12			Seminars	Student seminars will be conducted 2nd week of this month.		
2	May,'21 2,3&4	12+24	Washing machines: Electronics controller for washing machines, Block diagram and its working. Washing machine hardware and software, Types of washing machines, Fuzzy logic Washing machines.	PPT on Washing machine.You tube lecture on washing machine	Teaching Unit test Practicals	11 1 24			Quiz Guest lecture	Quiz competition may be conducted in the 2nd week of this month. Guest lecture may be conducted in the 3rd week of this month		
3	June,'21 1 & 2	6+12	Air conditioners and Refrigerators: Air conditioning, components of Air conditioning systems, All water Air conditioning system, All Air conditioning systems, Concepts of Unitary and Central Air Conditioning Systems, Split Air Conditioners	PPT on Air conditioning system You tube lecture is arranged	Teaching Unit test Practicals	5 1 12			Seminar Projects .	Guide students to prepare PPTs on some important topics		
4	June,'21 3,& 4	12+24	Electronic Gadgets and Office Appliances: Barcode Scanner and Decoder, Xerox, Fax, Automated Teller machine (ATMs), Calculator, Concepts of GPRS ,GPS Navigation systems Audio and Video systems: P A system Set Top box, Block diagram of CATV and Dish TV Block diagrams and their working	PPT on FAX Machine, Xerox machine and also You tube lectures for the same	Teaching Unit test Practicals	9 1 24			Remedial Classes. Assignment.	2		

6	July,'21 1	6+12	Block diagram of CCTV, concepts of LCD and LED Displays , Block diagram of Remote control switch and its working **Revision of the Mid syllabus**		Teaching Practicals	6 12	Prepare students to MID and Semester END exams by evaluating old question papers.
Mid exams for Semesters -VI will be commenced from last week of July 2021. Followed with semester End exams.							

DEPT. OF ELECTRONICS, SRI Y.N.COLLEGE (Autonomous), NARSAPUR, W.G.Dt.

ANNUAL CURRICULAM PLAN-YEAR: 2020-21

Subject: Electronics **Class: I B.Sc. Paper: I (Circuit Analysis & Electronic Devices) - Semester –I**

Name of the Faculty: ***Dr.Ch Kanaka Rao Lecturer in Electronics***

				Curricular Activity					Co-curricular Activity			
S.No.	**Month & week**	**Hours Available**	**Syllabus-topic**	**Additional Inputs Value Addition**	**Activity**	**Hours Allotted**	**whether Conducted**	**If not alternate dates**	**Activity**	**Hours Allotted**	**Weather Conducted**	**if not alternate dates**
1	Mar,'21 1,2,3&4	3	Bridge course: Units and Dimensions, R,L,C components.	PPT on basics of R,L,&C Components	Teaching	3			Assignment			
2	Apr,'21 1,2,3&4	11+12	Concepts of ideal as well as voltage and current sources Some definitions. Kirchhoffs current law and voltage law and their explanation. problems	PPT on Voltage sources and currents sources.	Teaching Unit test Practical	10 1 12				Student seminars will be conducted 2nd week of this month.		
3	May,'21 1 & 2	5+6	Method of solving AC and DC circuits by Kirchhoff's laws, Branch current method, Nodal voltage method, Star and delta transformations		Teaching practical	5 6			Assignment			
4	May,'21 3 & 4	6+6	Superposition theorem, Maximum power transfer theorem, Thevenin's theorem and related problems	PPT on theorems	Teaching Unit test Practical.	5 1 6			Assignment			
5	June,'21 1 & 2	11+12	Nortons's theorem, Reciprocity theorem, Milliman's theorem and their proofs. Problems on the theorems. Frequency response of RC and RL circuits, their action as Low pass and High pass filters		Teaching Unit test Practical	7 2 12			Remedial classes	2 Student seminars will be conducted 2nd week of this month.		
6	June,'21 3 & 4	5+6	Passive differentiating and integrating circuits and related problems I Mid syllabus revision and solutions to problems	PPT on filters	Teaching Practical	5 6			Assignment	Prepare students to MID and Semester END exams by evaluating old question papers.		
Mid exams for semesters I will be commenced from First week of July 2021 & Follows Semester END examinations.												

DEPT. OF ELECTRONICS, SRI Y.N.COLLEGE (Autonomous), NARSAPUR, W.G.Dt.

ANNUAL CURRICULAM PLAN-YEAR: 2020-21

Subject: Electronics **Class: III B.Sc.** **Paper: IVA** (The 8085 Microprocessor & Applications) **- Semester –V**

Name of the Faculty: ***Dr.Ch kanaka Rao, Lecturer in Electronics.***

				Curricular Activity					Co-curricular Activity			
S.No.	**Month & week**	**Hours Available**	**Syllabus-topic**	**Additional Inputs Value Addition**	**Activity**	**Hours Allotted**	**whether Conducted**	**If not alternate dates**	**Activity**	**Hours Allotted**	**Weather Conducted**	**if not alternate dates**
1	Aug,'20 3&4	9	*Introduction to Microprocessor:* Intel 8085 Microprocessor: Architecture of 8085 - Central Processing Unit (CPU)- Arithmetic and Logical Unit – Timing and Control Unit - Registers organization Address, Data and Control Buses - Pin configuration of 8085 and its description - Instruction cycle, Machine cycle, Fetch and Execute cycles. Timing diagrams.	PPT's on Architecture of 8085 PPT on Pin configuration	Teaching Unit test	8 1			Assignment			
2	Sep,'20 1,2,3&4	12+24	***Instruction set of Intel 8085:*** Instruction and Data formats, Instruction types, Addressing modes –Direct addressing, Register addressing, Immediate addressing, Register Indirect addressing, and implicit addressing. Classification of Instruction set: Data transfer group, Arithmetic group, Logical group, Branch group, and Stack, I/O and Machine control group	PPT class on Addressing modes PPT on instruction set.	Teaching Unit test Practical	11 1 24			Assignment	Student seminars will be conducted 2nd week of this month.		
3	Sep,'20 1,2,3&4	6+12	***Assembly Language Programming:*** Writing Assembly language programs (Examples of 8- and 16- bit Addition, Subtraction, Multiplication and Division - Finding the Largest and Smallest number in an 8-bit data array)		Teaching Unit test practical	5 1 12						
4	Sep,'20 1,2,3&4	6+12	Programming examples using Stacks and Subroutines. Debugging a program, Assembler directives - Interrupts and Interrupt structure of 8085	PPT on interrupts	Teaching Unit test Practical	5 1 12						
5	oct,'20 1 & 2	12+24	***Interfacing peripherals:*** Programmable Interfacing devices 8255, 8259, 8257, 8251 their important features, pin diagrams and block diagrams	PPT on all IC's	Teaching Unit test Practical	9 1 24			Assignment Remedial	2		

									Classes.			
6	Nov,'20 3 & 4	6+12	. Introduction to Data converters -A/D converter - Successive approximation type, D/A converter-R-2R ladder resistive type.		Teaching Practical	6 12			Assignment	Prepare students to MID and Semester END exams by evaluating old question papers.		
Mid exams for semesters V will be commenced Second week of December 2020 and Follows Semester END examinations.												

DEPT. OF ELECTRONICS, SRI Y.N.COLLEGE (Autonomous), NARSAPUR, W.G.Dt.

ANNUAL CURRICULAM PLAN-YEAR: 2020-21

Subject: Electronics **Class:** II B.Sc. **Paper:** III: (Analog Electronics and Digital Principles) – Semester -III

Name of the Faculty: ***Dr.Ch. Kanaka Rao Lecturer in Electronics.***

				Curricular Activity					Co-curricular Activity			
S.No.	**Month & week**	**Hours Available**	**Syllabus-topic**	**Additional Inputs Value Addition**	**Activity**	**Hours Allotted**	**whether Conducted**	**If not alternate dates**	**Activity**	**Hours Allotted**	**Weather Conducted**	**if not alternate dates**
1	Aug,'20 3&4	6	**Operational Amplifier: (10 Hrs)** Basic Op-amp, Characteristics of an ideal and practical Op-amp (IC 741), Block diagram of Op-Amp, Op-amp Parameters, Virtual Ground, differential amplifier.	ppt on op-amp block diagram	Teaching Unit test	5 1			Assignment			
2	Sep,'20 1,2,3&4	8+12	Inverting, Non-Inverting amplifiers, Adder, subtractor Voltage follower, Integrator, Differentiator, Voltage to current and Current to voltage converters., Logarithmic amplifier. Numerical problems.	PPT on Integrator & differentiator	Teaching Unit test Practical	7 1 12			Assignment			
3	Sep,'20 1,2,3&4	4+6	Mid syllabus revision and problems on Mid syllabus		Teaching Unit test practical	3 1 6						
4	Sep,'20 1,2,3&4	4+6	**Applications of Op-amps:** Voltage regula Comparator & Zero crossing detector, Schmitt Trigge		Teaching Practical.	4 6			Student seminars will be conducted 2nd week of this month, November ,2016			
5	oct,'20 1 & 2	8+12	. Wien's bridge Oscillator, Triangular Wave Generato Active filters (Basics): low pass, high pass & Band pas filters. **IC555 Timer:** Functional block Diagram, Astable, Monostable, and Bi-stable multivibrator circuits working and their applications. Numerical problems		Teaching Unit test Practical	5 1 12			Assignment Remedial Classes.	2		
6	Nov,'20 3 & 4	2+3	Revision of Mid II syllabus		Teaching Practical	2 3			Assignment	Prepare students to MID and Semester END exams by evaluating old question papers.		

Mid exams for semesters III will be commenced Second week of December 2020 and Follows Semester END examinations.

DEPT. OF ELECTRONICS, SRI Y.N.COLLEGE (Autonomous), NARSAPUR, W.G.Dt.

ANNUAL CURRICULAM PLAN-YEAR: 2020-21

Subject: Electronics **Class: III** B.Sc. **Paper:** VIIIB **Title of the Paper: Consumer Electronics CE-3**

Name of the Faculty: Dr.Ch Kanaka Rao, Lecturer in Electronics.

				Curricular Activity					Co-curricular Activity			
S.No.	**Month & week**	**Hours Available**	**Syllabus-topic**	**Additional Inputs Value Addition**	**Activity**	**Hours Allotted**	**whether Conducted**	**If not alternate dates**	**Activity**	**Hours Allotted**	**Weather Conducted**	**if not alternate dates**
1	Apr,'21 4 & May,'21 1	6+12	Microwave Ovens: Microwaves (range used in Mircrowave Ovens), Microwave Oven block diagram, LCE timer with Alarm, Single Chip controllers. Types of Microwaves, Wiring and Safety instructions, Care and Cleanings.	PPT on Microwave Oven	Teaching Unit test Practicals	5 1 12			Seminars	Student seminars will be conducted 2nd week of this month.		
2	May,'21 2,3&4	12+24	Washing machines: Electronics controller for washing machines, Block diagram and its working. Washing machine hardware and software, Types of washing machines, Fuzzy logic Washing machines.	PPT on Washing machine.You tube lecture on washing machine	Teaching Unit test Practicals	11 1 24			Quiz Guest lecture	Quiz competition may be conducted in the 2nd week of this month. Guest lecture may be conducted in the 3rd week of this month		
3	June,'21 1 & 2	6+12	Air conditioners and Refrigerators: Air conditioning, components of Air conditioning systems, All water Air conditioning system, All Air conditioning systems, Concepts of Unitary and Central Air Conditioning Systems, Split Air Conditioners	PPT on Air conditioning system You tube lecture is arranged	Teaching Unit test Practicals	5 1 12			Seminar Projects .	Guide students to prepare PPTs on some important topics		
4	June,'21 3,& 4	12+24	Electronic Gadgets and Office Appliances: Barcode Scanner and Decoder, Xerox, Fax, Automated Teller machine (ATMs), Calculator, Concepts of GPRS ,GPS Navigation systems Audio and Video systems: P A system Set Top box, Block diagram of CATV and Dish TV Block diagrams and their working	PPT on FAX Machine, Xerox machine and also You tube lectures for the same	Teaching Unit test Practicals	9 1 24			Remedial Classes. Assignment.	2		

6	July,'21 1	6+12	Block diagram of CCTV, concepts of LCD and LED Displays , Block diagram of Remote control switch and its working **Revision of the Mid syllabus**		Teaching Practicals	6 12	Prepare students to MID and Semester END exams by evaluating old question papers.
Mid exams for Semesters -VI will be commenced from last week of July 2021. Followed with semester End exams.							