

Department of Electronics

Sri Y N College(Autonomous)-Narsapur

Teaching Plan for the Academic Year 2021-22

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: **65**

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 Communications: 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	September -2021 Week-4	PPT & Virtual Lab	1. Face-to-Face Mode Teaching with Interactive sessions 2. Weekend Student Seminar	Virtual Class Room	5
Unit-I	Introduction to Modulation & Demodulation, Need for Modulation, Types, AM Modulating Amplifier, AM Diode detector, Varactor Diode Modulator, Ratio Detector	2	October-2021 Week-1	PPT & Virtual Lab	1. Face-to-Face Mode Teaching with Interactive sessions 2. Weekend Student Seminar 3. Assignment-1	Virtual Class Room	8
Unit-II	Introduction to Transmitters AM Transmitters: AM Broadcast Transmitter; FM Transmitters: Directly Modulated FM Transmitter, FM Stereo Transmitter.	2	October -2021 Week-2	PPT & Virtual Lab	1. Face-to-Face Mode Teaching with Interactive sessions 2. Weekend Student Seminar	Virtual Class Room	6
Unit-II	Introduction to Receivers, AM Broadcast Receivers: Superheterodyne Receiver; FM Receivers: Stereo FM receiver.	2	October -2021 Week-3	PPT & Virtual Lab	1. Face-to-Face Mode Teaching with Interactive sessions 2. Weekend Student Seminar	Virtual Class Room	4

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

Unit-V	Basic Concept, Concept of Cell Sectoring and Cell Splitting, SIM number, IMEI number, Block Diagram of Mobile Communication Network,	1	December-2021 Week-3	PPT & Virtual Lab	1. Face-to-Face Mode Teaching with Interactive sessions 2. Weekend Student Seminar	Virtual Class Room	8
Unit-V	Idea of GSM, CDMA, TDMA and FDMA technologies., Block diagram of Mobile Phone handset, 4G and 5G Concepts.	1	January-2022 Week-1	PPT & Virtual Lab	1. Face-to-Face Mode Teaching with Interactive sessions 2. Weekend Student Seminar 3. Assignment-5	Virtual Class Room	5

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Teaching Plan for the Academic Year 2021-22

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

Department: **Electronics**

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

Course: **CC-3E: Electronic Communication Systems** Semester: **III**

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

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 Communications: 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	December -2021 Week-4	PPT & Virtual Lab	1. Face-to-Face Mode Teaching with Interactive sessions 2. Weekend Student Seminar	Virtual Class Room	7
Unit-I	Introduction to Modulation & Demodulation, Need for Modulation, Types, AM Modulating Amplifier, AM Diode detector, Varactor Diode Modulator, Ratio Detector	2	January -2022 Week-1	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	Introduction to Transmitters AM Transmitters: AM Broadcast Transmitter; FM Transmitters: Directly Modulated FM Transmitter, FM Stereo Transmitter.	2	January -2022 Week-3	PPT & Virtual Lab	1. Face-to-Face Mode Teaching with Interactive sessions 2. Weekend Student Seminar	Virtual Class Room	7
Unit-II	Introduction to Receivers, AM Broadcast Receivers: Superheterodyne Receiver; FM Receivers: Stereo FM receiver.	2	January -2022 Week-4	PPT & Virtual Lab	1. Face-to-Face Mode Teaching with Interactive sessions 2. Weekend Student Seminar	Virtual Class Room	6

Unit-II	Introduction to Antennas, Basic Principle, Types of Antennas	1	February-2022 Week-1	PPT & Virtual Lab	1. Face-to-Face Mode Teaching with Interactive sessions 2. Weekend Student Seminar 3. Assignment-2	Virtual Class Room	6
Unit-III	Elements of Digital Communication System, Advantages, PCM, Sampling Theorem, Quantization, Concepts of ASK, FSK, PSK, QPSK,	1	February-2022 Week-3	PPT & Virtual Lab	1. Face-to-Face Mode Teaching with Interactive sessions 2. Weekend Student Seminar	Virtual Class Room	6
Unit-III	Frequency Division Multiplexing, Time Division Multiplexing, Pulse Modulation: Concepts of PAM, PWM, PPM	1	February-2022 Week-4	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	Introduction to Satellite Communication, Satellite Orbits, Basic Components, Constructional features.	1	March-2022 Week-1	PPT & Virtual Lab	1. Face-to-Face Mode Teaching with Interactive sessions 2. Weekend Student Seminar	Virtual Class Room	6
Unit-IV	Basic Fiber Optic System, Advantages, Modes of propagation, Concept of Numerical Aperture, Basic Optical Communication System.	1	March-2022 Week-2	PPT & Virtual Lab	1. Face-to-Face Mode Teaching with Interactive sessions 2. Weekend Student Seminar 3. Assignment-4	Virtual Class Room	8
Unit-V	Basic Concept, Concept of Cell Sectoring and Cell	1	March-2022 Week-3	PPT & Virtual Lab	1. Face-to-Face Mode Teaching with	Virtual Class Room	7

	Splitting, SIM number, IMEI number, Block Diagram of Mobile Communication Network,				Interactive sessions 2. Weekend Student Seminar		
Unit-V	Idea of GSM, CDMA, TDMA and FDMA technologies., Block diagram of Mobile Phone handset, 4G and 5G Concepts.	1	March-2022 Week-4	PPT & Virtual Lab	1. Face-to-Face Mode Teaching with Interactive sessions 2. Weekend Student Seminar 3. Assignment-5	Virtual Class Room	6

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Sri Y N College(Autonomous)-Narsapur

Teaching Plan for the Academic Year 2021-22

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

Department: **Electronics**

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

Course: **CC-5E: Microcontroller Systems**

Semester: **IV**

Credits: **4 + 2**

Marks: **100 + 50**

Class Size: **74**

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, Addressing Modes, Instruction Set, Jump, Loop & Call Instructions.
The 8051 Microcontroller: Overview of 8051 family, Key Features of 8051, Block Diagram of 8051 Microcontroller, Architecture 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 Programming 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 Operation Modes.	Interrupts Programming of 8051: Introduction to 8051 Interrupts, 8051 Interrupt Structure, Timer Interrupts, External 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	May-2022 Week-2	PPT & Virtual Lab	1. Face-to-Face Mode Teaching with Interactive sessions 2. Weekend Student Seminar	Virtual Class Room	6
Unit-I	Overview of 8051 family, Key Features of 8051, Block Diagram of 8051 Microcontroller, Architecture of 8051, Pin Diagram & Memory Organization of 8051.	1	May-2022 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	Introduction, Program Counter, PSW Register, Stack, Addressing Modes, Instruction Set, Jump, Loop & Call Instructions.	2	June-2022 Week-1	PPT & Virtual Lab	1. Face-to-Face Mode Teaching with Interactive sessions 2. Weekend Student Seminar	Virtual Class Room	6
Unit-II	Programs in Assembly Language: Addition, Multiplication, Division, Largest/Smallest & Ascending/Descending Order (all 8-bit data).	2	June-2022 Week-2	PPT & Virtual Lab	1. Face-to-Face Mode Teaching with Interactive sessions 2. Weekend Student Seminar 3. Assignment-2	Virtual Class Room	5

Unit-III	Introduction, I/O Ports Pins Description and their functions.	2	June-2022 Week-3	PPT & Virtual Lab	1. Face-to-Face Mode Teaching with Interactive sessions 2. Weekend Student Seminar	Virtual Class Room	6
Unit-III	Introduction to Timers & Counters, Timer/Counter Opeartion Modes.	2	June-2022 Week-4	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	Basics of Serial Communication, 8051 Serial Communication, 8051 Connection to RS232, 8051 Serial Communication Modes.	2	July-2022 Week-1	PPT & Virtual Lab	1. Face-to-Face Mode Teaching with Interactive sessions 2. Weekend Student Seminar	Virtual Class Room	6
Unit-IV	Introduction to 8051 Interrupts, 8051 Interrupt Structure, Timer Interrupts, Externel Hardware Interrupts & Serial Communication Interrupts.	2	July-2022 Week-3	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	ADC & DAC Interfacing.	2	July-2022 Week-4	PPT & Virtual Lab	1. Face-to-Face Mode Teaching with Interactive sessions 2. Weekend Student Seminar	Virtual Class Room	7
Unit-V	LCD, LED & Stepper Motor Interfacing	2	August-2022 Week-1	PPT & Virtual Lab	1. Face-to-Face Mode Teaching with Interactive sessions 2. Weekend	Virtual Class Room	5

					Student Seminar 3. Assignment-5		
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Teaching Plan for the Academic Year 2021-22

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

Department: **Electronics**

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

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

Semester: **VI**

Credits: **4 + 2**

Marks: **100 + 50**

Class Size: **32**

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	March-2022 Week-1	PPT & Virtual Labs	1. Face-to-Face Mode Teaching with Interactive sessions 2. Weekend Student Seminar	Virtual Class Room	6
Unit-I	Silicon Controlled Rectifier (SCR) or Thyristor-Structure and basic operation, Static V-I characteristics, Two transistor analogy, Snubber Circuit	2	March-2022 Week-2	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	Power Devices: DIAC and TRIAC: Basic structure, working and V-I characteristics of DIAC and TRIAC. Power MOS FET: Basic structure, Operation	2	March-2022 Week-3	PPT & Virtual Lab	1. Face-to-Face Mode Teaching with Interactive sessions 2. Weekend Student Seminar	Virtual Class Room	7

	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	March-2022 Week-4	PPT & Virtual Lab	1. Face-to-Face Mode Teaching with Interactive sessions 2. Weekend Student Seminar	Virtual Class Room	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	April-2022 Week-1	PPT & Virtual Lab	1. Face-to-Face Mode Teaching with Interactive sessions 2. Weekend Student Seminar 3. Assignment-2	Virtual Class Room	6
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	April-2022 Week-2	PPT & Virtual Lab	1. Face-to-Face Mode Teaching with Interactive sessions 2. Weekend Student Seminar	Virtual Class Room	6
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	April-2022 Week-3	PPT & Virtual Lab	1. Face-to-Face Mode Teaching with Interactive sessions 2. Weekend Student Seminar 3. Assignment-3	Virtual Class Room	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	May-2022 Week-1	PPT & Virtual Lab	1. Face-to-Face Mode Teaching with Interactive sessions 2. Weekend Student Seminar	Virtual Class Room	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	May-2022 Week-2	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	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	May-2022 Week-3	PPT & Virtual Lab	1. Face-to-Face Mode Teaching with Interactive sessions 2. Weekend Student Seminar	Virtual Class Room	6