Department of ECE
School of Engineering & Technology
Sri PadmavatiMahilaVisvavidyalayam, Tirupati

Course Outcomes

ANALOG IC APPLICATIONS

Course Outcomes:

1. Design and analyze different types of OP-AMP.
2. Design and analyze Linear and Non-linear OP-AMP.
3. Understand the characteristics of Timers and Design its types.
4. Design and analyze Active Filters and Voltage Regulators.
5. Design and analyze D-A and A-D to converters.

ANALOG CIRCUITS

Course Outcomes:

At the end of this course students will demonstrate the ability to
1. Understand the characteristics of diodes and transistors.
2. Design and analyze various rectifier and amplifier circuits.
3.Design and analyze various FET biasing circuits.
4.Design and analyze the methods of Multistage Amplifiers.
5. Design sinusoidal and non-sinusoidal oscillators.

BASIC ELECTRONICS ENGINEERING

Course Outcomes:
At the end of this course students will demonstrate the ability to
1. Understand the principle of diode, Rectifiers and Filters.
2. Design and analyze different configurations and characterstic parameters of BJT.
3. Design and analyze different configurations and characterstic parameters of FET.
4. Design and analyze the amplifiers and oscillators.
5. Design and analyze various Integrated circuits and its applications.

ELECTRONIC DEVICES AND CIRCUITS

Course Outcomes:

At the end of this course students will demonstrate the ability to

1. Understand the principle and applications of diode.
2. Design and analyze different configurations and characterstic parameters of BJT.
3. Design and analyze different configurations and characterstic parameters of FET.
4. Understand the frequency response for FET amplifiers.
5. Design and analyze various special purpose electronic devices.

ANALOG AND PULSE CIRCUITS

Course Outcomes:

At the end of this course students will demonstrate the ability to

1. Understand the different multistage and power amplifiers.
2. Design and analyze various Feedback amplifiers.
3.Understand the types and characteristics of wave shaping circuits.
4.Design and analyze the different oscillators and multivibrators.
5. Understand the different time base generators.

Probability Theory and Stochastic Process

Course outcomes

1.Understand the axiomatic formulationof modern probality Theory and Think of ramdom variables as an intrinsic need for the analysis of random phenomena.

2.Characterize probability models and function of random variables based on single &multiple random variables

3. Understand the concept of in equalities and probabilistic limits.
4. Understand the concept of random processes
5. Poisson and Gaussian process and representation of low pass and band pass noise models.

ELECTROMAGNETIC THEORY & TRANSMISSION LINES

Course Outcomes:

- Distinguish between the static and time-varying fields, establish the corresponding sets of Maxwell's Equations and Boundary Conditions and use them for solving engineering problems.
- Analyze the Wave Equations for good conductors and good dielectrics, and evaluate the UPW Characteristics for several practical media of interest.
- Establish the proof and estimate the polarization features, reflection and transmission coefficients for UPW propagation, distinguish between Brewster and Critical Angles, and acquire knowledge of their applications.
- Determine the Transmission Line parameters for different lines, characterize the distortions and estimate the characteristics for different lines.Analyze the RF Line features and configure them as SC, OC Lines, QWTs and HWTs, and design the same for effective impedance transformation.Study the Smith Chart profile and stub matching features, and gain ability to practically use the same for solving practical problems.

MICROPROCESSORS AND MICROCONTROLLERS

Course Outcomes:

At the end of this course, students will demonstrate the ability to

1.Do assembly language programming.

2.Do interfacing design of peripherals like I/O, A/D, D/A, timer etc.

3.Develop systems using 8051 microcontroller.

ANALOG COMMUNICATION

Course Outcomes:

At the end of this course students will demonstrate the ability to:

1. Analyze and compare different analog modulation schemes for their efficiency and bandwidth.
2. Understand different frequency and phase modulations and comparing their efficiencies with amplitude modulations.
3. Analyze various AM and FM transmitters and Receivers.
4. Analyze the behaviour of a communication system in presence of noise.
5. Investigate pulsed modulation system and analyze their system performance.

DIGITAL SIGNAL PROCESSING

Course Outcomes:

1. Represent signals mathematically in continuous and discrete-time, and in the frequency domain.
2. Analyze discrete-time systems using z-transform algorithms.
3. Design digital filters for various applications.
4. Apply digital signal processing for the analysis of real-life signals.
5. Analyze various DSP processors

Antennas and Wave Propagation

Course Outcomes:

1. To develop expressions for Antenna parameters and make practical calculations. To calculate the radiation resistance for Quarter wave monopole and Half wave dipole.
2. To design folded dipole and apply the same in the construction of YagiUda array and to understand the concept of radiation from various horn antennas and parabolic reflector antennas.
3. To demonstrate the principle of pattern multiplication and to design Broad side and End fire arrays and sketch the patterns for sample cases.
4. To understand various feeding methods and design considerations of Microstrip antenna.
5. To understand and analyse wave propagation in different modes.

ELECTRONIC MEASUREMENTS

Course outcomes:

At the end of this course students will demonstrate the ability to

1. Measure various electrical parameters with accuracy, precision, resolution.
2. Use AC and DC bridges for relevant parameter measurement.
3. Select appropriate passive or active transducers for measurement of physical phenomenon. Use Signal Generator, frequency counter, CRO and digital IC tester for appropriate measurement.
4. Test and troubleshoot electronic circuits using various measuring instruments.
5. Maintain various types of test and measuring instruments.

DIGITAL COMMUNICATION

Course Outcomes:

At the end of the course, students will demonstrate the ability to:

1. Analyze the basics of digital communication.
2. Analyze different digital modulation techniques.
3. Compute the bit error performance of various digital modulation techniques.
4. Analyze the concepts of Information theory.
5. Apply coding techniques.

Microwave Theory and Techniques

Course Outcomes:

1. To understand modes of transmission of microwaves and losses associated with microwave transmission.
2. To analyse different types of microwave components and their applications. Calculate S matrix for various waveguide components and splitting the microwave energy in a desired direction.
3. Distinguish between microwave tubes and solid state devices, calculation of efficiency of devices.
4. To understand about Microwave integrated circuits at microwave frequencies.
5. Measure various microwave parameters using a microwave test bench. To understand about various microwave applications.

Fiber Optic Communication

Course Outcomes

At the end of the course, the students will be able to:

1. Understand and analyze the constructional parameters of optical fibres.
2. Estimate the losses due to attenuation, absorption, scattering and bending.
3. Analyze various optical sources.
4. Compare various optical detectors and choose suitable one for different applications.
5. To design an optical system.

Information Theory and Coding

Course Outcomes:

At the end of the course, students will demonstrate the ability to:

1. Understand the concept of information and entropy.
2. Understand Shannon's theorem for coding.
3. Calculation of channel capacity.
4. Apply coding techniques.
5. Formulate the basic equations of Linear Block Codes.

Speech and Audio Processing

Course Outcomes:

At the end of the course, students will demonstrate the ability to:

1. Model an electical equivalent of speech producton system.
2. Can design basic audio coding methods for coding the audio signal.
3. Extractb the LPC coeficients that can be used to synthsize or compress the speech.
4. Understand the speech signal processing and its characteristics.
5. Gain the knowledge in linear prediction of speech and analyse the examples on Them and gain the knowledge in detail on quantization.

Introduction to MEMS

Course Outcomes:

At the end of the course, students will demonstrate the ability to:

1. To understand the microsystems technology and analyse the applications in MEMS.
2. To understand the microsensors and actuators.
3. To understand the design and fabrication process of MEMS.
4. Design of microsystem manufacturing.
5. Appreciate the underlying working devices of MEMS.

Bio-Medical Electronics

Course Outcomes:

At the end of the course, students will demonstrate the ability to:

1. Understand the application of the electronic system in biological and medical applications.
2. Gain the knowledge on bio medical transducers.
3. Understand and analyse biological process like other electronic process.
4. Understand the practical limitations on electronic components while handling bio-substances.
5. Gain the knowledge of bio electronics on measurement and saftey aspects.

Mobile Communication and Networks

Course Outcomes:

At the end of the course, students will demonstrate the ability to:

1. Understand the working principles of the mobile communication systems.
2. Understand the relation between the user features and underlying technology.
3. Analyze mobile communication systems for improved performance.
4. Understand the Multi Carrier communication systems.
5. Knowledge of GSM mobile communication standard, its architecture, logical channels, advantages and limitations.

DIGITAL IMAGE AND VIDEO PROCESSING

Course Outcomes:

1. Analysing the fundamentals of image processing
2. Analyis of Image enhancement and restoration
3. Analysis of image segmentation
4. Analysis of image compression
5. Analysis of 2D-motion

Mixed Signal Design

Course Outcomes:

1. Analysis of switched capacitor circuits.
2. Analysis of PLL.
3. Analysis of Data Converters.
4. Analysis of A/D converters.
5. Analysis of oversampling converters.

Wireless Sensor Networks

Course Outcomes:

At the end of the course, students will demonstrate the ability to:

1. Design wireless sensor networks for a given application.

2. Understand emerging research areas in the field of sensor networks.

3. Understand MAC protocols used for different communication standards used in WSN.

4. Explore new protocols for WSN.

5. To build a WSN, either with existing commercial platform or with different technology.

High Speed Electronic Devices

Course Outcomes:

1. Analysing the basic concepts of Hi-speed electronics

2. Understanding parameters governing the high speed performance of devices

3. Analysing Materials properties

4. Understanding Metal semiconductor contacts and MOS devices

5. Analysing High Electron Mobility Transistors