



GANDHI ACADEMY OF TECHNOLOGY AND ENGINEERING

Department of Electronics and Communication Engineering

Subject: Basic Electronics Engineering (Code: RBL1B001)

After completion of the course, students should be able to:

- CO₁: Describe the principle and properties of a semiconductor diode
- CO₂: Analyse different transistor configurations
- CO₃: Describe the operation of a field effect transistor (FET).
- CO₄: Analyse CMOS inverters and the design of various CMOS circuits
- CO₅: Use feedback amplifiers and op amps.
- CO₆: Remember the basics of various digital arithmetic operations

Subject: Analog and Digital Communication (Code: REC5C002)

After completion of the course student should be able to:

- CO₁: Learning frequency domain representation of signals & basic modulation technique.
- CO₂: Understanding Gaussian noise and white noise characteristics in modulation systems.
- CO₃: Study threshold effect in angle modulation and idea of pre-emphasis and deemphasis.
- CO₄: Learn amplitude and pulse code modulation (PCM).
- CO₅: Understand the concept of different modulation process and ISI.
- CO₆: Learn about digital modulation trade-offs and equalization technique.

Subject: Wireless Communication (Code: RCS6C002)

After completion of the course student should be able to:

- CO₁: Gain knowledge about the concept of mobile & personal communication
- CO₂: Discuss the propagation models for wireless networks
- CO₃: Gain brief idea on multiple access techniques in wireless communications
- CO₄: Estimate spectral efficiency of different wireless access technologies
- CO₅: Analyse second generation mobile networks-GSM
- CO₆: Study applications of different RF bands

Subject: Analog Electronic Circuits (Code: REC3C001)

After completion of the course, students should be able to:

- CO₁: Understanding MOS Field Effect Transistor.
- CO₂: Analyse different transistor configurations.
- CO₃: Understand small signal analysis of BJTs.
- CO₄: Study high frequency response of FETs and BJTs.
- CO₅: Analyse feedback amplifier, oscillators and power amplifier.
- CO₆: Understand an Operational Amplifier.

Subject: Digital Signal Processing (Code: REC5C001)

After completion of the course student should be able to:

- CO₁: Study discrete time signals and systems.
- CO₂: Analyse discrete time LTI systems
- CO₃: Understanding Discrete Fourier Transform and its applications
- CO₄: Analyse the structure and implementation of FIR filter
- CO₅: Discuss the structure for IIR filter
- CO₆: Study of analog and digital filters

Subject: Biomedical Instrumentation (Code: REI6D002)

After completion of the course student should be able to:

- CO₁: Learn about bioengineering, biochemical engineering, biomedical engineering
- CO₂: Gain brief idea on bioelectrical signals & electrodes.
- CO₃: Analyse electrodes for ECG.
- CO₄: Study physiological transducers.
- CO₅: Analyse basic recording systems.
- CO₆: Analyse electrostatic coupling to AC signals.

Subject: Signals and Systems (Code: REC3C002)

After completion of the course, students should be able to:

- CO₁: Learn about the discrete time signals and systems
- CO₂: Analyse discrete time LTI systems
- CO₃: Study the continuous time Fourier series
- CO₄: Study the continuous time Fourier transformation
- CO₅: Analyse the Z-Transform and its application to the analysis of LTI systems
- CO₆: Learn about the Discrete Fourier Transform

Subject: Microprocessors & Microcontrollers (Code: REC5C003)

After completion of the course student should be able to:

- CO₁: Understand the architecture and features of 8086 microprocessors
- CO₂: Study of 16 bit microprocessors and basic instructions set
- CO₃: Apply 8086 assembly language code to solve problems for arithmetic operations
- CO₄: Understand about the microprocessor peripheral interfacing
- CO₅: Study on 8-bit microcontroller- H/W architecture instruction set and programming
- CO₆: Learn on interfacing of A-to-D converter and D-to-A converter.

Subject: Radar and TV Engineering (Code: REC7D006)

After completion of the course student should be able to:

- CO₁: Get introduced to different radar system
- CO₂: Discuss about radar transmitters and receivers
- CO₃: Gain brief idea on Television: scanning, blanking & synchronization
- CO₄: Analyse video detectors, sound signal separation
- CO₅: Study Digital TV: Digitized video, source coding of digitized video
- CO₆: Analyse display technologies

Subject: Digital System Design (Code: REC4C002)

After completion of the course student should be able to:

- CO₁: Understand the number system, Boolean algebra and logic gates.
- CO₂: Understand the K-map method for simplifying logic circuits.
- CO₃: Understand combinational logic circuits.
- CO₄: Analyse the construction of a synchronous sequential logic circuit.
- CO₅: Analyse binary counters, memory and programmable logic.
- CO₆: Explore IC logic families.

Subject: Microwave Engineering (Code: RCS6C001)

After completion of the course student should be able to:

- CO₁: Discuss high frequency transmission lines and wave guides
- CO₂: Study different types of wave guider
- CO₃: Analyse TEM mode in Co-ax line
- CO₄: Learn about waveguide Components
- CO₅: Study about principle of operation as an amplifier at high frequency
- CO₆: Analyse microwave antennas

Subject: Digital Image Processing (Code: REC7D002)

After completion of the course student should be able to:

- CO₁: Review the fundamental concepts of a digital image processing system
- CO₂: Analyse images in the frequency domain using various transforms.
- CO₃: Evaluate the techniques for image enhancement and image restoration.
- CO₄: Categorize various compression techniques.
- CO₅: Interpret Image compression standards.
- CO₆: Interpret image segmentation and representation techniques.