



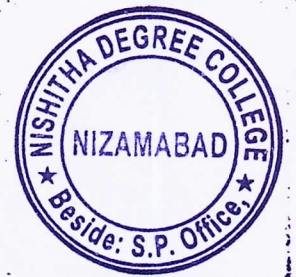
NISHITHA DEGREE COLLEGE, NIZAMABAD

Accredited with "A" grade by NAAC

Affiliated to Telangana University

Recognized under 2(f) and 12(B) under UGC Act, 1956

ISO :9001: 2015 Certified



Department of Electronics

Program outcomes:

PO1

Utilize the basic knowledge in Electronics, Mathematics and Computer science.

PO2

Apply research based knowledge to design and conduct experiments, analyze, synthesize and interpret the data pertaining to Electronics and arrive at valid conclusions.

PO3

Students can develop consciousness of professional, ethical and social responsibilities as experts in the field of Electronics.

PO4

Perform effectively as a member/leader in multidisciplinary teams.

PO5

Demonstrate knowledge and understanding the management principles to manage projects in multidisciplinary environment.

PO6

After successful completion of this program, students will learn to use current techniques, skills, and modern tools.

PO7

An ability to apply the knowledge of learnt professional ethics to social issues and responsibilities

PO10

Develop consciousness of professional, ethical and social responsibilities as experts in the field of Electronics and Computer Science.

PO11

An ability to apply the knowledge of learnt professional ethics to social issues and responsibilities.

PO12

An ability to function effectively as an individual and as a team leader in diverse and multidisciplinary settings to accomplish a common goal



Course Outcomes:

Subject: Circuit Analysis:

After Completion of this course, Students will be able to

- Understand the concepts of basic circuit laws, mesh and Nodal analysis of circuits and circuit theorems.
- Apply the knowledge of basic circuit law to deduce the complicated circuits into simple circuits using Theorems
- Understand the concepts of Transient response of RC and RL Circuits.
- Understand the concepts of RLC Series Resonance and Parallel Resonance.
- Calculate frequency response of different types of filters.
- Analyze the transient, steady state and resonating behaviour of circuits.
- Understand the concept of CRT and CRO.

Circuit Analysis Lab:

After Completion of this course, Students will be able to

- Understands the operation of CRO to find Amplitude, Frequency and Time period using Function Generator.
- Gains knowledge about theorems to find current and voltage.
- Observe the frequency response of RC circuits
- Observe the frequency response of RLC circuits.

Subject: Electronic Devices:

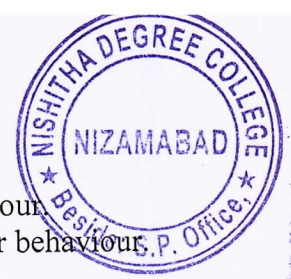
After Completion of this course, Students will be able to

- Explain the physics of intrinsic, P and N type semiconductors.
- Discuss various types of Diodes.
- Identify the basic devices and its configurations
- Illustrate the characteristics of PN-Junction Diode, Varactor Diode, photo diode, LEDs, solar cells, Tunnel diode and Zener diode.
- Analyze characteristics of diode, BJT & MOS transistors.
- Analyze characteristics of SCR, UJT
- Examine the concept of diode, BJT and FET and their applications.
- Study and analyze the behaviour of semiconductor devices.
- Characterize the current flow of a bipolar transistor in CB, CE and CC configurations
- Bias the transistors and FETs for amplifier applications.

Electronic Devices Lab:

After Completion of this course, Students will be able to

- Plot the characteristics of electronic devices to understand their behaviour.
- Plot the input and output characteristics of BJT to understand their behaviour.



- Plot the input and output characteristics of FET to understand their behaviour.
- Plot the characteristics of UJT as a relaxation oscillator to understand their behaviour.

Subject: Analog Circuits:

After Completion of this course, Students will be able to

- Understand the concept of half wave and full wave rectifiers with filters.
- Understand the concept of Regulated Power Supplies and Three terminal voltage regulators.
- Understand the concept of Transistor as amplifier and feedback amplifiers.
- Analyze the different types of Feedback Amplifier Circuits.
- Understand Oscillators and Multivibrators.

Analog Circuits Lab:

After Completion of this course, Students will be able to

- Study of Half wave rectifier, full wave rectifier and Bridge rectifier and determination of Ripple factor.
- Study of Filters and determination of Ripple factor.
- Determination of frequency of oscillators.
- Determination of time period of Astable multivibrator.

Subject: Linear integrated Circuits and Basics of Communications:

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

- Describe the concept of operational amplifiers.
- Understand and Measure the parameters of IC 741 Op-amp.
- Understand the concept of Applications of Op-Amp
- Understand the concept of Modulation and types of modulations.
- Understand the concept of PAM, PPM, PCM and PWM
- Compare the performance of AM, FM and PM schemes with reference to SNR.
- Understand noise as a random process and its effect on communication receivers
- Evaluate the performance of PCM, DPCM and DM in a digital communication system
- Identify source coding and channel coding schemes for a given communication link.

Linear integrated Circuits and Basics of Communications Lab:

After successful completion of the course, the students should be able to know about

- Op –amp as an Inverting amplifier and as non inverting amplifiers.
- They can verify Op –amp applications.
- Gains knowledge about Multivibrators.
- Observe the performance of Modulations.

Subject: Digital Electronics:

After successful completion of the course, the students should be able to know about

- Different types of number systems and logic gates.



- Realize Boolean expression using logic gates.
- Design Combinational circuits for a given functions using logic gates.
- Reduction of Boolean expressions using K-Maps.
- Synchronous and Asynchronous sequential logic circuits and counters.
- Analyze the various logic families and their characteristics.
- The architecture and instruction set of Microprocessor
- Discuss about System Bus Structure for Microprocessor Configuration.

Digital Electronics lab:

After successful completion of the course, the students should be able to know about

- AND, OR and NOT Logic gates and about Universal logic gates.
- Construction of Basic logic gates using Universal gates.
- Half adder and Full adders and Flip flops.
- Counters

Subject: Electronic Instrumentation:

After successful completion of the course, the students should be able to know about

- Characteristics of an Instrument: Static characteristics and dynamic characteristics.
- Transducers and Sensors: Ultrasonic, LVDT etc.,
- Bridge measurements: Wheatstone, Kelvin etc.,
- Testing and measuring instruments.
- Cathode ray tube.

Electronic Instrumentation Lab:

After successful completion of the course, the students should be able to know about

- Temperature transducer.
- Displacement transducer.
- Flow transducer.
- Acceleration transducer.
- Passive transducer.
- CRO characteristics.
- DC voltmeter.
- Multimeter
- AC Voltmeter

Subject: Digital Communications:

After successful completion of the course, the students should be able to know about

- Digital Communications.
- Information theory.
- Digital Communication system types, PWM, PPM, PCM etc.,



- Digital Communication system types, PWM, PPM, PCM etc.,
- Error detection and coding methods.
- Cellular concepts, Global positioning Systems, Facsimile etc.,

Digital Communications lab:

After successful completion of the course, the students should be able to know about

- Pulse Amplitude modulation.
- Pulse Width modulation.
- Pulse phase modulation.
- Pulse Code modulation.
- Delta Modulation.
- Amplitude shift keying.
- Frequency shift keying.
- Pulse shift keying.

Subject: Microcontroller and its applications:

After successful completion of the course, the students should be able to know about

- The architecture and instruction set of Microcontroller.
- Discuss about System Bus Structure for Microcontroller.
- Instruction set of 8051 microcontroller.
- Programming knowledge of microcontroller.
- Serial communications types and process.

Microcontroller and its applications lab:

After successful completion of the course, the students should be able to write programmes for

- Add, Sub and Multiplication Etc.,
- Pick out the largest or smallest number among a given set of numbers.
- Arrange the numbers in ascending or descending order.
- Interfacing of DAC and ADC.

HEAD

DEPARTMENT OF ELECTRONICS

Head
Department of Electronics
Nishitha Degree College, Nizamabad.

PRINCIPAL

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Nishitha Degree College
Near: S.P. Office, NIZAMABAD.

