

LABORATORY FACILITIES

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The department has well furnished and equipped Laboratory as

- ✚ *Electronics Devices and Circuits I Laboratory*
- ✚ *Electronics Devices and Circuits II Laboratory*
- ✚ *Digital Laboratory*
- ✚ *Microprocessor and Microcontroller Laboratory*
- ✚ *Optical and Microwave Laboratory*
- ✚ *Digital Signal Processing / VLSI / Communication Networks Laboratory*
- ✚ *Electronics System Design Lab I & II*

Sl. No.	Name of the Laboratory	Area
1	<i>Electronics Devices and Circuits I Laboratory</i>	41'6"× 27'0"
2	<i>Electronics Devices and Circuits II Laboratory</i>	31'8"× 27'0"
3	<i>Digital Laboratory</i>	32'0"× 27'0"
4	<i>Microprocessor and Microcontroller Laboratory</i>	32'0"× 27'0"
5	<i>Optical and Microwave Laboratory</i>	31'8"× 27'0"
6	<i>Digital Signal Processing /VLSI /Computer Networks Laboratory</i>	63'9"× 27'0"
7	<i>Electronics System Design Laboratory</i>	33'0"× 27'0"

Digital Signal Processing /VLSI /Communication Networks Laboratory

Digital Signal Processing Laboratory

Digital Signal Processing Laboratory is playing an important role to bring advanced DSP research work into practical realization. The DSP Laboratory has developed into a well-recognized lab. We have also been widely consulted in areas in real-time DSP implementation, applications and programming. There is a constant need for designing systems with lower power, higher speed and lower area. The DSP/VLSI/Computer Networks Laboratory is equipped with hordes of personal computers. The students enrich their knowledge by using the software tools like

- *DSP Kits /TMS320C31 /50*
- *MATLAB 7.1*

VLSI Laboratory

Hardware tools:

- *Spartan 3 Trainer kit*
- *Traffic light controller*
- *RTC module*

Software tools:

- *Xilinx 9.2i*
- *MODELSIM 6.2c*

Communication Networks Laboratory

- *DCT-03 Data Communication Trainer Kit*
 - A) *USB Adaptor-05*
 - B) *Access Point-01*
- *LTS -01 Local Area Network Trainer Kit*
 - *L-Sim-5 Server 20-Clients*
 - *N-Sim 15user*

Optical and Microwave Laboratory

Microwave Laboratory

Microwave Laboratory are fundamental to many modern electronics systems, including digital wireless communications. We have active research interests in developing and characterizing microwave components and systems with particular expertise in low phase-noise oscillators, filters and power efficient amplifiers. In Microwave Laboratory, the students are exposed to the microwave active devices like klystron, Gunn diode and passive devices isolator, circulator, slide screw tuner, magic tee, directional coupler, horn antenna, attenuator and terminations. The students perform all the experiments as prescribed by the university.

- *Klystron Bench*
- *Gunn Bench*
- *Various Passive Components*
- *Directional coupler*

Optical Communication Laboratory

Optical and Optoelectronic Semiconductor devices and subsystems permeate modern communications and information storage and are also increasingly important in medical, environmental and industrial applications. The students perform experiments to study the characteristics of optical sources (LED & LD) and optical detectors (LD & APD) and optical fibers. Fault detection in a fiber link is studied using the OTDR module. A FSO module enables study of Transmission of optical signal in free space. The Laboratory is equipped with connecterization and splicing kits.

- *Power meter, Eye pattern measurement*
- *Laser source, LED source*
- *Optical cables*
- *WDM*
- *Video link trainer*

Microprocessor and Microcontroller Laboratory

Microprocessor lab helps the students enhance their knowledge about various processors such as 8085, 8086 and 8051 microcontrollers and also the interfacing of these processors with other equipments. Students from other branch of engineering and sciences also come to this lab and develop their skills in the field of microprocessor and its applications .The features and facilities available in this lab will help the students do their projects and enhance their knowledge about the latest trends and technologies.

- *8085 Microprocessor Trainer kit*
- *8086 Microprocessor Trainer kit*
- *8051 Microcontroller Trainer kit*
- *Stepper Motor/ Interface*
- *Digital IO Cards*
- *LVDT Interface*
- *8251/53 Interface Card*
- *8259 Interface Card*
- *8237 Interface Card*
- *Traffic Light Controller*
- *ADC&DAC Measurement Control Module*
- *Water Bath With Relay Provision*
- *AC Motor Speed Controller*
- *DC Motor Speed Controller*
- *Temperature Controller*
- *PIC Controller*
- *ADC Interface Card*
- *8255 Interface Card*
- *RTD Module*
- *Thermocouple Module*
- *Thermostat Module*
- *Keyboard/Display Interface*
- *Multiplexed Seven Segment Display*
- *Printer Interface*

Digital Laboratory

An engineer who wants to understand existing digital circuits or to design new ones needs to know the basic operations of digital electronics. Digital Electronics Laboratory is fully equipped with the required instruments such as C.R.O., Millimeters, signal Generator etc. to conduct experiments with digital ICs for UG students. Digital electronics is also the base of computer technology. Today complete computers on a single chip, called microcontrollers, bring "intelligence" to many products of our daily use.

- *Digital IC Trainer Kit*
- *Digital Function Generator*
- *Digital IC Tester*
- *Dual Trace Oscilloscope (CRO)*
- *Function Generator (0-3 MHz)*
- *Digital Multimeter*
- *Single Output Dc Regulated Power Supply (0-30v)*

Electron Devices and Circuits I / Communication System Laboratory

Electron Devices and Circuits Laboratory I

Electronics lab is spacious and well equipped with the latest signal generators, oscilloscopes, digital trainer kits and measuring instruments. Students of various branches design and test their analog/digital/mixed signals, digital circuits as part of their curriculum.

- *CRO*
- *Function generator*
- *Multiple DC power supplies*
- *Digital IC trainer kits*
- *Bread boards, Voltmeters, Ammeters*

Communication System Laboratory

Communication Laboratory focuses on training the students in both analog and digital transmission/reception of signal. The students here start in the analog area by constructing the circuits of amplitude modulation, frequency modulation and phase modulation. The other important area of analog signal processing is the phase locked loop.

- *Function Generators and Cathode ray Oscilloscopes*
- *150MHz RF Signal Generator*
- *Various Analog /Digital Study and Trainer Kits*
- *Fiber Optic Trainer Kit*

Electron Devices and Circuits II/ Linear Integrated Circuits and Simulation Laboratory

Electron Devices and Circuits Laboratory II

Electronics Devices and Circuits Laboratory is spacious and well equipped with the latest signal generators, oscilloscopes, digital trainer kits and measuring instruments. Students of various branches design and test their analog/digital/mixed signals, digital circuits as part of their curriculum. Guidance is provided to the students by a team of faculty and lab technicians. The labs are kept open after the college hours to enable the students to engage themselves in designing /testing the circuits in their leisure hours. Students are grouped into small teams and guided to do their mini projects by using the facility mentioned below.

- *CRO*
- *Function generator*
- *Multiple DC power supplies*
- *Digital IC trainer kits*
- *Bread boards, Voltmeters, Ammeters*

Linear Integrated Circuits and Simulation Laboratory

Linear Integrated Circuits & Simulation Laboratory is very important for designing the characteristics of OP-AMP, 555 Timer IC and to simulate the applications of OP-AMP. It is also used for designing the Electronic circuits-1. Students of various branches design and test their circuits as part of their curriculum. Guidance is provided to the students by a team of expert faculty and lab-technicians. The labs are kept open after the college hours to enable the students to engage themselves in designing /testing the circuits in their leisure hours. Students are grouped into small teams and guided to do their mini projects by using the facility mentioned below.

- *Cathode Ray Oscilloscope*
- *Function Generator*
- *Dual Power Supplies*
- *Digital Multimeter*

Electronics System Design Lab I & II

Electronics design Laboratory helps the students to enhance their knowledge about various processors such as 8086 and 8051 microcontrollers and also the interfacing of these processors with other equipments

- *8086 Microprocessor Trainer Kit(16bit)*
- *Digital Function Generator*
- *+ ADC/DAC Interface Module*
- *DSP Processor Trainer Kit (6713)*
- *PIC Microcontroller Trainer Kit*

- *DC Regulated Power Supply*
- *Model Train Board*
- *8051 Microcontroller trainer kit*
- *Elevator Simulator Interface*
- *CPLD Piggy Back Board*
- *Traffic Light Controller System*
- *ADD On Board (Vvsi-29)*
- *Digital Storage Oscilloscope*

Embedded System Laboratory

The rapid development within the field of Embedded Systems Design that has taken place over the last years offers new possibilities for designers of Home Appliances, Industrial monitoring and controlling devices, Medical Instrumentations etc. The department of Electronics and Communication is setting a full-fledged Embedded Systems lab keeping in mind the current trend so as to produce industry ready employees. The lab will have processors with 8bit, 16bit and 32bit processing capabilities. The lab will be equipped with most sophisticated development boards for final year projects. The lab is aiming to design good quality products for the present electronics market. In spite of Hardware components we also provide Simulation Software for designing an Embedded System.

- *LPC 2148 Development Kit*
- *Stepper Motor*
- *PWM Based LED Lighting, LED Interface Board*