

## **LABORATORIES AND COMPUTING FACILITIES**

The Department of Telecommunication is provided with state-of-art laboratories. These laboratories are provided with high-tech equipment to provide hands on experience to undergraduate students from preliminary to advanced level. The undergraduate students gain practical knowledge on various advanced level subjects as IoT (internet of things), cloud computing, computer programming, digital signal processing, antenna and wave propagation, communication systems. The students are required to implement and learn what they learn theoretically in class.

Following laboratories are currently available in the Telecommunication Engineering department: -

- **Lab Title: IoT & Computing Lab**

Location: FS-02

Area: 25x23sqft

Objectives: To perform the network analysis lab

Adequacy for instruction: Adequate for 24 students (1 students per PC)

Courses taught: Network Analysis

Software: Matlab

Electronics work bench

Proteus

MultiSim

IoT based Software Kits

Major Equipment: Dell Computers core i7 Intel,  
Multimedia Projector

Safety regulations: Fire extinguishers, Smoke detector

- **Lab Title: Digital Electronics Laboratory**

Location: FT-01

Area: 47x25sqft

Objectives: To perform experiments of Digital Logic Design and Basic Electronics Labs.

Adequacy for instruction: Adequate for 48 students (3 students per workstation)

Courses taught: Digital Logic Design  
Basic Electronics

Software: None

Major Equipment: Oscilloscope  
Digital Power Supply  
Function Generator  
Digital Oscilloscope  
Proto Boards  
Digital Function Generator

Digital Multi-Meter  
Analog Multi-Meter  
Logic Probe  
Microprocessor Sensing Trainer  
Desktop Multi-meters  
Stabilizer

Safety regulations: Fire extinguishers  
Smoke detector

Students can only use the equipment under supervision of the lab instructor.

- **Lab Title: Basic Electrical Laboratory**

Location: FT-02

Area: 47x25sqft

Objectives: To perform Basic Electrical Engineering and Amplifiers and Oscillators Labs

Adequacy for instruction: Adequate for 48 students (3 students per workstation)

Courses taught: Basic Electrical Engineering  
Amplifiers and Oscillators

Software: None

Major Equipment: Digital Power Supply  
Analog Power Supply  
Digital Multimeter  
Analog Multimeter  
Function Generator  
Resistor meter  
Analog Oscilloscope  
Digital Oscilloscope  
Universal programmer  
Stabilizer  
Optical Communication kits

Safety regulations: Fire extinguishers,  
Smoke detector

Students can only use the equipment under supervision of the lab instructor.

- **Lab Title: Antenna and wave propagation Laboratory**

Location: FFT-03

Area: 25x23sqft

Objectives: To perform microwave and antenna labs

Adequacy for instruction: Adequate for 25 students (3 students per workstation)

Courses taught: Microwave and antenna

Software: Antenna Trainer ED-3200

Antenna Trainer ST-2261

Major Equipment: Blue Tooth Trainer

Teleflex Trainer

Radar Trainer

Microwave Trainer Ms 3000

Function Generator

Digital Oscilloscope

Satellite Trainer

Spectrum Analyzer

Frequency Counter

Layboard Antenna Trainer

Microwave Trainer (Klystron ) Kit R1 550

Antenna Trainer Ed 3200

Microwave Trainer Scientech

Computer Sets

Safety regulations: Fire extinguishers,  
Smoke detector

Students can only use the equipment under supervision of the lab instructor.

Following laboratories are currently Telecommunication Engineering department is sharing in Electronics Engineering department.

- **Lab Title: Microprocessor and Microcontroller Laboratory**

Location: GS-03

Area: 47x25sqft

Objectives: To perform Microprocessor and microcontroller Lab  
Adequacy for instruction: Adequate for 50 students (3 students per workstation)

Courses taught: Microprocessor and Interfacing Techniques

Software: TASM/MASM, Inifit Universal programmer, Keil UVision 3, Emu8086 v2.57, MikroProg Suit for Pc, MPLAP IDE, Proteus 7 Professional, Cisco Packet Tracer Student.

Major Equipment: Computer Core i5  
Computer Core2Duo, Microcontroller trainer MTS-51, Microprocessor Trainer BGC-8088, Power supply for BGC Trainer, Universal Programmer (TOP3000, TOP2004, Super Pro, Xelltec(USA)), Logic Analyzer GDM 8245, Power Supply High Voltage Inifit Technology, Microcontroller Training System(AVR, PIC, 8051), Featuring Xillinx Spartan FPGA(Digital Spartan 3e Starter).

Safety regulations: Fire extinguishers,  
Smoke detector

Students can only use the equipment under supervision of the lab instructor.

- **Lab Title: Optoelectronics Laboratory**

Location: GFT-02

Area: 47x25sqft

Objectives: To perform the optical fiber communication labs.  
Adequacy for instruction: Adequate for 60 students (3 students per workstation)

Courses taught: Optical Fiber Communication

Software: None

Major Equipment: Opto Electronics Trainer HBE-202  
Fiber optic communication Trainer KL-95001  
Fusion Spicing kit  
Dual power supply  
Oscilloscope

Function Generator  
Digital Multimeter  
Desktop Digital Multimeter  
Analog Multimeter  
Frequency Counter  
Safety regulations: Fire extinguishers,  
Smoke detector

Students can only use the equipment under supervision of the lab instructor.

- **Lab Title: Communication and Microprocessor Lab**

Location: GF-06  
Area: 47x25sqft  
Objectives: To perform analog and digital communication lab.  
Adequacy for instruction: Adequate for 50 students (3 students per workstation)

Courses taught: Analog Communication  
Digital Communication

Software: None

Major Equipment: AM DSB/SSB Transmitter Trainer of infinity Tech  
AM DSB/SSB Receiver Trainer of infinity Tech  
Frequency Modulation and demodulation of infinity  
Time division multiplexing transceiver of infinity Tech  
Digital modulation techniques transmitter trainer of infinity tech  
Digital modulation techniques receiver trainer of infinity tech  
DC supply dual mode  
Oscilloscope  
Function generator

Safety regulations: Fire extinguishers,  
Smoke detector

All the electrical equipment must be properly earthed.  
Students can only use the equipment under supervision of the lab instructor.

- **Lab Title: Signal processing Laboratory**

- Location: GS-02
  - Area: 47x25sqft
  - Objectives: To perform digital signal processing and linear control systems Lab
  - Adequacy for instruction: Adequate for 50 students (1 students per workstation)
  - Courses taught: Digital Signal Processing, Linear Control Systems, Signals and Systems.
  - Software: MATLAB, CCStudio 3.1, 6416 DSK Diagnostic.
  - Major Equipment: Computer Core i5  
Computer Core2Duo  
DSP kit 6711, 6414, 6416.
  - Safety regulations: Fire extinguishers,  
Smoke detector
- Students can only use the equipment under supervision of the lab instructor.

Following laboratories are currently Telecommunication Engineering department is sharing in Computer Engineering department.

- **Lab Title: AutoCAD Lab**

- Location: BF-02
- Area: 47x25sqft
- Objectives: To perform AutoCAD and computer fundamental and programming labs
- Adequacy for instruction: Adequate for 45 students (1 students per PC)
- Courses taught: AutoCAD, Computer Fundamental and programming
- Software: AutoCAD Engineering drawing 2004, Adobe Dream Viewer and Xampp PhP, MatLab , rational Rose. OR CAD, Turbo C++ 3.1(window based) and 3.0(DOS based), Microsoft office visio 2008, Java 6.3,Xilinx
- Major Equipment: Computer Dell OPTIPLEX 7010 core i5 – 3570 3.4 GHz
- Safety regulations: Fire extinguishers,  
Smoke detector

- **Lab Title: Programming Lab**

Location: BF-03

Area: 47x25sqft

Objectives: To perform Object Oriented Programming Labs

Adequacy for instruction: Adequate for 45 students (1 students per PC)

Courses taught: Object Oriented Programming

Software: Turbo C++ 4.0, MS Office 2016, Electronics workbench 5.12, Net Beans 8.0, Jdk1.6/1.7

Major Equipment: HP LITE DESK -800 Core i7 3.40GHz.

Safety regulations: Fire extinguishers,  
Smoke detector

All the electrical equipment must be properly earthed.  
Students can only use the equipment under supervision of the lab instructor.

- **Lab Title: Networking and Security Lab (CISCO)**

Location: AT-05

Area: 47x25sqft

Objectives: To perform DCCN lab

Adequacy for instruction: Adequate for 37 students (1 students per workstation)

Courses taught: DCCN

Software: Packet Tracer v.6.2.0, OPNET v.9.1, WireShark, CISCO TFTPv.1.1, CISCO configuration Protocol v.2.8

Major Equipment: Personal Computer, NTI (ALCATEL), ISDN MODEM (PLANET), Router, Switch, Wireless Devices, Cisco Router CARDS, PIX.

Safety regulations: Fire extinguishers,  
Smoke detector