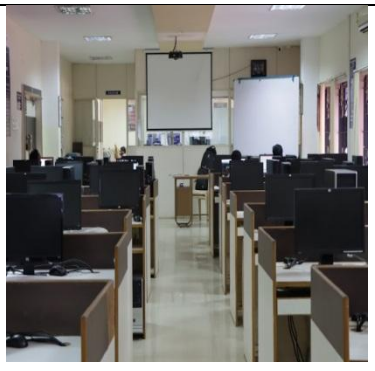
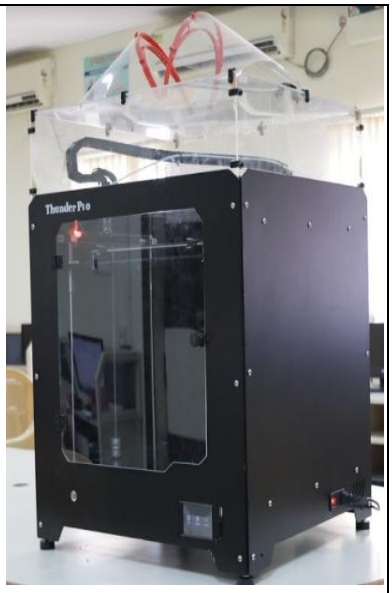
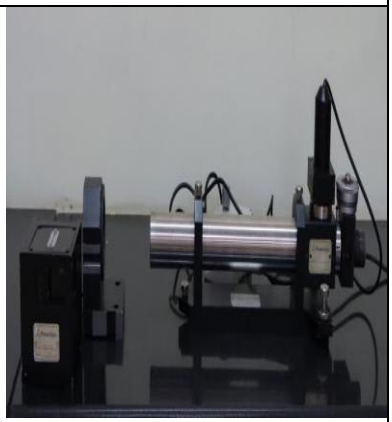
Research Facilities

Department of Mechanical Engineering

Sl.No	Name of Laboratory	Name of the Equipment	Purpose of the equipment for research and consultancy work	Equipment Photo
1.	Manufacturing Lab	CNC Turning Machine- Hass USA	The product can be manufacture using with the Help of CNC Programming	
2.		CNC Milling Machine- Hass USA	The product can be manufacture using with the Help of CNC Programming	
3.		Surface Grinding Machine	Surface grinding is used to produce a smooth finish on flat surfaces	
4.		Tool And Cutter Grinder	A tool and cutter grinder is used to sharpen milling cutters and tool bits along with a host of other cutting tools.	

5.		Gear Hobbing Machine	Gear Hobbing Machine is used to Manufacture spur gears, Worm gears, helical gears,splines, and sprockets.	
6.		Radial Drilling Machine	It is used to make circular holes on the components with the help of Drill bits in various sizes.	
7.		Unitech' All Geared Lathe	It is used to do Various operations in Manufacturing Processes.	
8.	Computer Aided Design Lab	PRO/ENGINEER 4.0 University Edition Perpetual license (50 Users)	Design and Simulation	
9.		CATIA V6		
10.		ANSYS		
11.		INVENTOR		
12.		SOLID WORKS		

13.	Center for 3 D Printing	3D Printing machine	It is used to Construct the Prototype models.	
14.	Metrology and Measurement Lab	Roughness Tester with Comparator	It is used to quickly and accurately determine the surface texture or surface roughness of a material	
15.		Profile projector	This is used for measure the complex like shape gears, cams, threads and comparing the measured contour model.	
16.		Autocollimator	It is used to align components and measure deflections in optical or mechanical systems	

17.	Material Testing Lab	Hardness Test	The Main Purpose of the Machine is used to check the Hardness of the Materials.	
18.		Impact Test	The main purpose is to conduct the mechanical properties of materials. Materia	
19.		Universal Testing Machine	The main purpose is to conduct the mechanical properties of steel based materials.	
20.		Spring Test	It is used to find out the stiffness and modulus of rigidity of the spring wire	

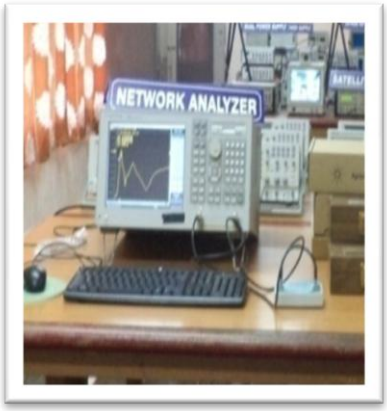
21.		Torsion Equipment	The main purpose is to conduct the mechanical properties of materials	
22.		Muffle furnace	It is used for high-temperature applications such as melting glass, creating enamel coatings, technical ceramics or soldering and brazing.	
23.		Inverted Trinocular Metallurgical Microscope	It is Mainly used to inspect the Metals Microstructure.	

Department of Electrical and Electronics Engineering

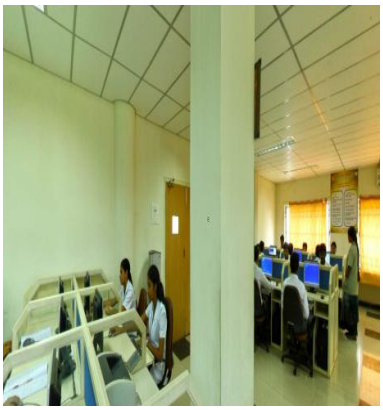
1.	Power Electronics Lab	DSP 2812 kit / DSP 5x /6x Digital signal Processor	Facility to retrieve Power Data & Harmonics on Meter Screen	
2.		Power & harmonics analyzer Model PHA-5850	Analysis of 3P4W, 3P3W, 1P2W, 1P3W Systems Analysis of THD Total harmonic distortion up to 100th harmonic order True RMS value, Active Power, Apparent & Reactive Power (KVA, KVAR) Power Factor, Phase Angle (F) & Energy (WH, KWH,KVARH, PF)	
3.	Simulation Lab	Real time MATLAB interfacing Card with PC	To create a real-time system in Simulink with your PC or Mac computer and connect it to physical devices	
4.	Microprocessor Lab	PIC Microcontroller Development board PIC 16F877A, 20 MHz high speed crystal frequency	For Embedded Design & Development, Automotive, Industrial, Consumer Electronics	
5.		Microcontroller 8051 development board	To read or write the microcontroller flash, EEPROM, fuse bit and lock bits.	

6.		Universal programmer burner Top 2008	It is a multifunctional universal USM programe device designed for fusing all type with all tpes of EPROM	
7.		ARM 7 Processor 2148 Project card	It can be used for capturing the external input events/signals like rising edge (positive going) and falling edge (negative going) on the capture pins.	
8.	Power Electronics Lab	Digital Storage CRO 30 MHz – software available for interfacing with PC	The Courseware information is presented directly on the oscilloscope display and can be used to provide step by step instructions, background theory, hints and tips or an efficient way for students to document their lab work	
9.		PLC module	It can be used for measuring the frequency of the input signal, its pulse width	
10.	Power Electronics Lab	Digital Storage Oscilloscope 4 Channel, 70MHz (1 No.)	Stores and analyses the signal digitally rather than using analog techniques. Provides advanced trigger, storage, display and measurement features.	

Department of Electronics and Communication Engineering

1.	Advanced Communication Laboratory	Network Analyser ENA series E5061A 300KHz – 1.5GHz	Study of an antenna and Filters To Measure various parameters for different Networks Characterize two port networks such as amplifiersand filters.	
2.		Spectrum analyzer 1 GHz with TG HM 5014	Analyzing the spectral components of electrical signals, dominant frequency, power distortion, harmonics, bandwidth	
3.		Multisim V10 (25 Users)	Build and test several processors in Electronic Circuit simulation. Includes microcontroller simulation as well as to extract features of Printed Circuit Board in software	
4.	Center of Excellence • IoT Laboratory • Cyber Security Laboratory • Video And Image Processing Laboratory	Intel Core 3 4 GHz, 8 GB RAM, 1 TB HDD, KBD, Mouse, LCD	Protection of software, hardware, and data internet connected systems in various applications	

Department of Computer Science and Engineering

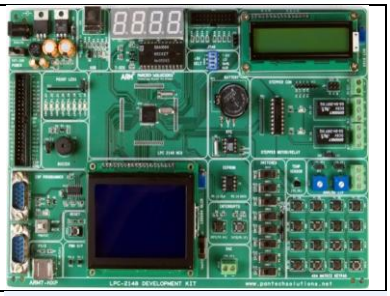
1.	Research & Development	**NODES** Lenovo Desktop PC - Intel H61 Express Chipset - InteL Core i3 3.3 GHZ Processor - 4 GB PC3 Memory - 500 GB SATA HDD - Lenovo Keyboard - Lenovo Mouse - 18.5” TFT Monitor **WINDOWS SERVER 2008 R2** HP PROLIANT ML 150G3 Server - Intel Quad Core xeon Processor E5310(1.60 GHZ, 1066 MHZ FSB, 80W) - Integrated 2x4 MB Shared L2 CACHE / 1GB PC2 -5300 DIMMS (DDR2 - 667) 4 DIMM SLOTS - HP 146GB SAS 15K HOT PLUG / - Embedded HP NC7781 GIGABIT Server Adapter - 48 X IDE (AT API) Cd rom Drive - Microatxtower - HP 15” TFT Monitor PS/2 Keyboard & Mouse	Research Work	 

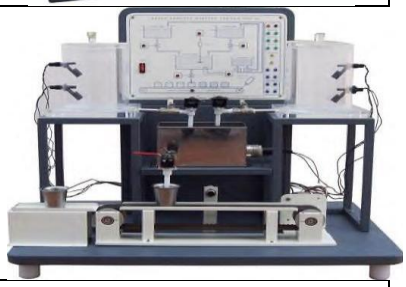
Department of Information Technology

1.	Scholar Lab	SERVER -ST50 Lenovo Tower server 7Y48SOOHOO -Intel Xeon E-2140G 4C 3.2GHz/2x8 GB -TruDDR4/2X2 TB Enterprise SATA/3.5” SATA/RAID 0,1,5,10(Onboard RAID) -Intel AMT 12.0/3 Ethernet ports (Includes 7ZT7AOO482) -3 Years onsite/ -DELL USB KB & mouse -DELL 19.5” LED Monitor -15 Desktop systems with Core i7 – 8th generation/ 8 GB DDR4 RAM/500 GB	Application Development	 

Department of Instrumentation and Control Engineering

1	Sensor and Transducer Lab	AC Synchro Transmitter & receiver	Measuring Instruments	
2.		Temperature Measurement using PC Based Data Acquisition System	Measuring Instruments	
3.		Level Measurement Trainer using strain gauge	Measuring Instruments	
4.		Measurement of Speed using magnetic pick up	Measuring Instruments	
5.		Calibration of DP transmitter used for Flow measurement.	Calibration Instruments	
6.		Calibration of Pressure Gauge using Dead weight tester	Calibration Instruments	
7.		Calibration of I to p converter	Calibration Instruments	

8.	Embedded Design Lab	8051 development board	Embedded Based Devices	
9.		ARM processor development kit	Embedded Based Devices	
10.	Lab View	NI DAQ 9172	Interfacing with hardware	
11.	Process Control	Control valve characteristics (linear+equal%+quick opening)	To study the characteristics of control valve	
12.		Temperature Process Analyzer	To study the basic principles of Temperature control	
13.		Pressure Process Analyzer Level Process Analyzer using PID controller (stand-alone)	To study the basic principles of pressure and level control	
14.		Flow Process Analyzer	To study the basic principles of flow control	

15.		Process Control Simulator	To study the characteristics of P,PI and PID.	
16.		GE Fanuc PLC (14 inputs and 10 outputs)	Programmable device	
17.		PLC Real time application trainer-Batch Process.	To study the applications of PLC	
18.		Proto Type Process control using PLC	To study the applications of PLC	
19.		PLC Real time application trainer for bottle Filling process	To study the applications of PLC	

Department of Civil Engineering

1.	Material Testing Laboratory	Compression Testing Machine	The main purpose is to conduct the mechanical properties of concrete. Opportunity to prepare the different types of concrete. To study the compressive Strength ofconcrete.	
2.		Flexural Testing Machine	The main purpose is to conduct the mechanical properties of concrete. Opportunity to prepare the different types of concrete. To study theflexural strengthof concrete.	
3.		Universal Testing Machine	The main purpose is to conduct the mechanical properties of steel based materials.	

4.	Geotechnical Engineering Laboratory	Izod Equipment	The main purpose is to conduct the mechanical properties of materials. Material testing for MMC and PMC materials. Material characterization and structural analysis using metallurgical microscope	
5.		Torsion Equipment	The main purpose is to conduct the mechanical properties of materials. Material testing for MMC and PMC materials. Material characterization and structural analysis using metallurgical microscope	
6.		Direct shear Apparatus	The main purpose of this equipment to study the shear strength of soil. The compressive strength of soil is determined. To determine the safe bearing capacity of soil.	
7.		Unconfined Compression Test Apparatus	The main purpose of this equipment to study the shear strength of soil. The compressive strength of soil is determined. To determine the safe bearing capacity of soil.	

8.		Tri Axial Test Apparatus	The main purpose of this equipment to study the shear strength of soil. The compressive strength of soil is determined. To determine the safe bearing capacity of soil.	
9.	Environmental Engineering Laboratory	BOD	The main purpose of this equipment to conduct the inorganic chemical analysis and to determine the concentration of metal ions. To determine the mass of oxygen consumed per liter of solution.	
10.		Flocculation	The main purpose of this equipment to predict the quality of water and waste water. The main purpose is to conduct the settable solids	
11.		COD	The main purpose of this equipment to determine the concentration of metal ions.	
12.		Flame Photometry	The main purpose of this equipment to determine the mass of oxygen consumed per liter of solution. To predict the quality of water and waste water.	

13.	Transportation Engineering Laboratory	CBR	The main purpose of this equipment to determine the subgrade soil properties	

Department of Chemistry

1.	Chemistry Lab	Conductivity Meter	To measure conductance	
2.		Hot Plate	For Heating Purpose	
3.	Chemistry Lab	Colorimeter	To measure absorption	
4.		Flame Photometer	To measure emission	

5.		COD Apparatus	To measure COD	

Department of English

1	Language Lab (Globarena Software)	Lenovo SR250: Intel Xeon E-2124 4 core3.3 Ghz/Open RAM Bay/ 1 * ITB SATA 3.5” Simple Swap SATA (up to 4 Bays) RAID 0,1,5,10 Headphone W/mic	Linguistics and Applied Linguistics Online Writing reference Survey research relating to students Performance in the lab.