Adequate and well equipped laboratories and technical man power

Sr. No.	Name of the Laboratory	No. of students per setup (Batch Size)	Name of the Important equipment	Weekly utilization status (all the courses for which the lab is utilized)	Technical Manpower support		
					Name of the technical staff	Designation	Qualification
1	**Lab-4** **Project Lab**	01 Student Per Setup (35)	**Hardware:** 1- Computer **CPU:** Core i3 **RAM:** 4GB RAM **HDD:** 1TB **LAN CARD:** 1GBPS 2- Projector 3- Online UPS 4- UPS Battery Bank 5- Switch Rack 6- Projector **System Software:** 1- Windows-10 2- Ubuntu 3- Antivirus **Application Software:** 1- Turbo C++ 2- Oracle (Online Compiler) 3- Python IDE & Anaconda 4- MS Office 5- R-Studio 6- J2EE(Eclipse) 7- Net Beans 8- Tomcat Server 9- .NET	14Hr	Mr. Abhishek kr	Lab Assistant	BCA, MCA

| 2 | **Lab-5**

Discrete Structure & Logic Lab

Database Management Systems Lab

Microprocessor Lab

Web Technologies Lab

Computer Network Lab

Data Structures Using C Lab

Design And Analysis Of Algorithm Lab

Operating System Lab

Python Language Programming Lab

COMPLIER DESIGN LAB

Software Engg Lab

Cryptography & Network Security Lab | 01 Student Per Setup (35) | **Hardware:**
1- Computer
CPU: Core i3
RAM: 4GB RAM
HDD: 1TB
LAN CARD: 1GBPS
2- Projector
3- Online UPS
4- UPS Battery Bank
5- Switch Rack
6- Projector
7- Pen Tab
System Software:
1- Windows-10
2- Ubuntu
3- Antivirus
Application Software:
1- Turbo C++
2- Oracle (Online Compiler)
3- Python IDE & Anaconda
4- 8085 Simulator
5- MS Office
6- Web Browser
7- Packet Tracer
8- Prolog
9- LISP
10- Star UML
11- J2EE(Eclipse)
12- Net Beans
13- Tomcat Server
14- Rational Rose Enterprise | 14Hr | **Mr. Sandeep Yadav** | Lab Assistant | B.Tech |

	Lab		Hardware / Software				
3	**Lab-6** Discrete Structure & Logic Lab Database Management Systems Lab Microprocessor Lab Web Technologies Lab Computer Network Lab Data Structures Using C Lab Design And Analysis Of Algorithm Lab Operating System Lab Python Language Programming Lab COMPLIER DESIGN LAB Software Engg Lab Cryptography & Network Security Lab	01 Student Per Setup (35)	**Hardware:** 1- Computer **CPU:** Core i5 **RAM:** 8GB RAM **HDD:** 1TB **LAN CARD:** 1GBPS 2- Projector 3- Online UPS 4- UPS Battery Bank 5- Switch Rack 6- Projector 7- Pen Tab **System Software:** 1- Windows-10 2- Ubuntu 3- Antivirus **Application Software** **Application Software:** 1- Turbo C++ 2- Oracle (Online Compiler) 3- Python IDE & Anaconda 4- 8085 Simulator 5- MS Office 6- Web Browser 7- Packet Tracer 8- Prolog 9- LISP 10- Star UML 11- J2EE(Eclipse) 12- Net Beans 13- Tomcat Server 14- Rational Rose Enterprise	14Hr	Mr. Madhu Prabhanjan	Lab Assistant	MCA

Additional facilities created for improving the quality of learning experience in laboratories

Sr. No.	Facility Name	Details	Reason(s) for creating facility	Utilization	Areas in which students' are expected to have enhanced learning	Relevance to POs/PSOs
1.	Research Lab	Project & dissertation work	To simulate numerous algorithms, mathematical formula, Graph Ploting etc for Project & dissertation work	39 Hr Per Week	For Research Work	PO2, PO3, PO4, PO5, PO9,PO10, PO11, PO12, PSO1, PSO2, PSO3

2.	Tech-Edge	Provide exposure to the 2nd year,3rd year and final year (CSE) students in IT related basic technologies.	Provide them complete details in the area of C, C++, JAVA, PYTHON & ML as per the current requirements of industry	8 hours per week	Experience of theory and practical aspects of Programming	PO1, PO2, PO3, PO4, PO5, PO11, PO12, PSO1, PSO2, PSO3
3.	Center of Excellence for Blockchain, IoT & AI/ML Associated with INDIC-CHAIN & Mobiloitte Technologies India Pvt. Ltd. New Delhi	Provide exposure to the 2nd year,3rd year and final year (CSE) students in IT related emerging technologies	Promotion and enhancement of the dissemination of knowledge in the agreed area of Blockchain, IoT, AI/ML and Metaverse	Always available on need basis	Enhance learning in Emerging technologies	PO1, PO2, PO3, PO4, PO5, PO9, PO11, PO12, PSO1, PSO2, PSO3

Other Facilities

Sr. No.	Facility Name	Details	Reason(s) for creating facility	Utilization	Areas in which students' are expected to have enhanced learning	Relevance to POs/PSOs
1.	Audio & Video facility	Fully equipped with LCD projector, Audio System & Mic System	To enhancing Teaching Learning Process	Full Week	Better understanding	

Research Laboratory

IoT& Robotics Lab

IoT& Robotics Lab

Multi Purpose Computer Lab

INDIC-CHAIN CoE at BIT – Gorakhpur

An MoU between Mobiloitte Technologies India Pvt. Ltd. New Delhi and BIT – Gorakhpur

Laboratories: Maintenance and overall ambiance

Maintenance of Laboratory Equipments
1. Testing of Desktop Hardware & Cleanup of Unwanted file & Data, as well as cleanup of any unwanted file via antivirus boot scan.
2. Minor Repairing task executed by Lab Technical staff during Lab if any problem occurred.
3. Major Level repairing executed by Third party vender (JPS Info Tech) for Maintenance of Labs.
4. Foot Mat placed nearby Online UPS, to avoid any electrical shock.

Overall Ambience
1. Labs are well furnished & chairs are in good condition that is provided for individual students in Lab.
2. Each lab fully equipped with Sufficient Computer or other required Hardware with Licensed & Open Source software used as per program specific curriculum.
3. Lab Manuals are available during Academic Lab.
4. Sufficient number of windows are available for ventilation and natural light.
5. Lighting arrangement is very effective, along with the natural light in every corner of the rooms.
6. Online UPS facility available during Power failure.
7. Each Lab is equipped with white board, computer, Internet, and such other amenities.

Project laboratory

1. In CSE department, a project lab is available with adequate number of computers for project work to be carried out by students of all semesters.
2. Project Laboratory enables UG students to obtain hands-on experience and to realize their project ideas as executable projects.
3. Several successful projects have been carried out by students in this lab.
4. Students use this lab to compete in several Hackathons and have won various awards across India.
5. High speed internet facilities are always available to these systems.
6. This lab is equipped with Online UPS, along with batteries which are used as backup to support power failures.
7. Final year project and mini project of all semesters are carried out in this lab.

Project Lab

Sr. No.	Name of the Facility	Utilization
1.	Turbo C	For Project Work
2.	Ubuntu	For Project Work
3.	Java SE Development Kit, J2EE, Microsoft Visual Studio	For Project Work
4.	My Eclipse, Net beans IDE	For Project Work
5.	Apache Tomcat	For Project Work

6.	Microsoft Office	For Project Work
7.	PYTHON, Anaconda, R-studio	For Project Work
8.	Oracle (Online Compiler)	For Project Work
9.	Adobe Reader	For Project Work

Hardware Facilities in IoT & Robotics Lab

Sr. No.	Domain	Hardware description
1	Robotics/3D Printing	Anet 3D printer
		Photon Zero printer
2	IoT Based Embedded Systems	MSP430 Development Board
		MSP 430 Launch Pad
		8051 Microcontroller Board/ Interfacing modules
		8086 Micro-Processor Kit
3	IoT Based Embedded Systems/Robotics	Raspberry Pi 4 + Cover (4 GB varient)
		raspberry camera (USB webcam)
		Node mcu esp32
		Node mcu esp8266
		Audrino UNO + Cable
		Arduini NANO + Cable
		Arduino Mega + Cable
		Breadboard large size
		Breadboard small size
		BO Motor 100 rpm
		Motor driver module (L293D)
		Motor driver module(L298)
		Ressistor(220, 330, 470, 1k, 2.2k, 4.7k, 10k) ohm
		LED (Red, Green, Blue,yellow) kit
		Diode(1N4007) Pack of 30
		Capacitors(Ceramic) (222,102,103,104,224)kit
		Capacitors(Electroletic) 10uf, 25uf,47uf,100uf,220uf
		POT (1k,10k,100k)
		LDR pack of 10
		IC (7812, 7809, 7905, 7909, 7912, 4017, 555, 741, LM317,)
		transisrors(2N2222,BC547,BC548)
		battery led acid (6V)
		battery led acid (12)
		Jumper wire (set of 40 pice) Male to Male, Male to Female, Female to Female

		hot Air soldering station
		SMD Paste
		Dot PCB Small Size
		Single side Copper Clad
		IR Module
		Desoldring Pump
		Soldering Wire

Safety measures in laboratories

Sr. No.	Name of the Laboratory	Safety measures
1.	Project Lab (Lab-4)	• Standard Operating Procedure for Computer Lab is displayed. • Specific Safety policies (Do's & Don'ts) for students are displayed. • First aid box, Fire extinguisher is kept in the laboratory. • Skilled technical supporting staff to assist faculty as well as student. • Periodic hardware & software level maintenance activity performed to increase the performance of the computer. • Antivirus Software installed on each Computer. • Well Organized & Clean laboratory. • Use of Cell Phones is strictly prohibited during Lab hours. • CCTV Camera Installed in all Labs. • Foot Mat placed nearby Online UPS, to avoid any electrical shock.
2.	Academic Lab-1 (Lab-5)	• Standard Operating Procedure for Computer Lab is displayed. • Specific Safety policies (Do's & Don'ts) for students are displayed. • First aid box, Fire extinguisher is kept in the laboratory. • Skilled technical supporting staff to assist faculty as well as student. • Periodic hardware & software level maintenance activity performed to increase the performance of the computer. • Antivirus Software installed on each Computer. • Well Organized & Clean laboratory. • Use of Cell Phones is strictly prohibited during Lab hours. • CCTV Camera Installed in all Labs. • Foot Mat placed nearby Online UPS, to avoid any electrical shock.

3.	Academic Lab-2 (Lab-6)	- Standard Operating Procedure for Computer Lab is displayed. - Specific Safety policies (Do's & Don'ts) for students are displayed. - First aid box, Fire extinguisher is kept in the laboratory. - Skilled technical supporting staff to assist faculty as well as student. - Periodic hardware & software level maintenance activity performed to increase the performance of the computer. - Antivirus Software installed on each Computer. - Well Organized & Clean laboratory. - Use of Cell Phones is strictly prohibited during Lab hours. - CCTV Camera Installed in all Labs. - Foot Mat placed nearby Online UPS, to avoid any electrical shock.
4.	Research Lab (Lab-3)	- Standard Operating Procedure for Computer Lab is displayed. - Specific Safety policies (Do's & Don'ts) for students are displayed. - First aid box, Fire extinguisher is kept in the laboratory. - Skilled technical supporting staff to assist faculty as well as student. - Periodic hardware & software level maintenance activity performed to increase the performance of the computer. - Antivirus Software installed on each Computer. - Well Organized & Clean laboratory. - Use of Cell Phones is strictly prohibited during Lab hours. - CCTV Camera Installed in all Labs. - Foot Mat placed nearby Online UPS, to avoid any electrical shock.
5.	Multi Purpose Computer Lab (Lab-1)	- Standard Operating Procedure for Computer Lab is displayed. - Specific Safety policies (Do's & Don'ts) for students are displayed. - First aid box, Fire extinguisher is kept in the laboratory. - Skilled technical supporting staff to assist faculty as well as student. - Periodic hardware & software level maintenance activity performed to increase the performance of the computer. - Antivirus Software installed on each Computer. - Well Organized & Clean laboratory. - Use of Cell Phones is strictly prohibited during Lab hours. - CCTV Camera Installed in all Labs. - Foot Mat placed nearby Online UPS, to avoid any electrical shock.
6.	Center of Excellence (Lab-13 & Lab-14)	- Standard Operating Procedure for Computer Lab is displayed. - Specific Safety policies (Do's & Don'ts) for students are displayed. - First aid box, Fire extinguisher is kept in the laboratory. - Skilled technical supporting staff to assist faculty as well as student. - Periodic hardware & software level maintenance activity performed to increase the performance of the computer. - Antivirus Software installed on each Computer. - Well Organized & Clean laboratory. - Use of Cell Phones is strictly prohibited during Lab hours. - CCTV Camera Installed in all Labs. - Foot Mat placed nearby Online UPS, to avoid any electrical shock. - Proper earthing in lab. - Handling of electrical equipment to be done only under the supervision of Lab incharge. - Proper care is to be taken for handling of electrical equipment & connections.