

## Research Facilities and Technical Support available in the Department

### 1. Research Laboratories

Sl No	Laboratory Name	Area In sqm	Equipment details	Weekly utilization status (all the courses for which lab is utilized)
1.	Research Lab	84	<p>Computer-</p> <ul style="list-style-type: none"><li>• HP Pavilion 23-Q141 Touch All- in-one PC: Intel Core i5@2.9 GHz, RAM: 8GB, Graphics: 2GB, HDD: 1TB.</li><li>• Dell- OptiPlex 9020SFF, Core- i7@3.6 GHz, and RAM: 16 GB DDR3, HDD: 1TB.</li><li>• Apple iMac: Quadcore- i5@2.9Ghz, RAM: 8GB DDR3, Graphics: 1GB, HDD: 1TB.</li><li>• HP Make: Intel core i5-6500, 6th Gen, RAM 8GB, 2TB HDD, DVD-RW.</li><li>• Network Rack with 24 Port Switch</li></ul>	This lab is used by Research Scholars and students working for Institute website, SIH projects and any other contests

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

Sl. No	Facility Name	Details	Reasons for creating facility	Areas in which students are expected to have enhanced learning
1	Licensed software's	Oracle, Microsoft Azure, Microsoft Teams, VB, Visual Studio	These software's are used to enhance the learning ability through laboratory experiments and cloud services	DBMS, Cloud computing, VB
2	IOT Devices	Raspberry Pi 3 embedded kits with 64 bit computing HP and integrated Wi-Fi and BLE	These kits purely facilitates research oriented activities	IoT based projects and data analytics
3	Knowledge gateway	ICT, VMWare	The department has membership of ICT and VMWare which helps in student knowledge management	CN, Web Technology
4	E-learning	NPTEL	To enhance Teaching and Learning	Programming and new course languages.
5	Lab Instructional guide	Lab manual of each lab subject is available in the lab	Lab manual includes guidelines (objective, steps/algorithms/flowcharts/pseudocode ) to perform the experiment for their better understanding	Programming Languages
6	Projector	Teaching aids	To make interaction with students effective.	For effective running of labs
7	Whiteboard	Teaching aids	This helps the teachers to clarify the doubts of students in better way.	For better understanding.
8	Department Library	Quality improvement	This helps the students to learn new things in both academic and nonacademic fields.	For better learning

### 3. Laboratories: Maintenance and overall ambience

**Overall Ambience:** There are sufficient laboratories in the department to meet academic requirements.

1. Research lab is well furnished and well maintained
2. Lighting system is good and available 24\*7 in labs.
3. There are licensed application software's and system software's installed in Research laboratory computers.
4. Research laboratory is equipped with Internet facility.
5. Research lab is available for the researchers and students to carry their research work and projects.

### 4. Project Laboratory

The department has laboratory exclusively for the purpose of carrying out research projects, industry projects, Innovative projects and the projects which are developed and maintained by the department for the Institute use.

Salient features of the project labs are:

1. High end Computing System with best networking and Internet availability
2. Equipped with separate Projector, Printer, Scanner and white board for discussions among the groups.

Research Lab /Project Lab	Computers, Network Rack With port switches, Raspberry pi Kits, Arduino Boards , Sensors, weather stations for Smart Agriculture Project	Computers- HP Pavilion 23-Q141 Touch All-in-one PC: Intel Core i5@2.9 GHz, RAM: 8GB, Graphics: 2GB, HDD: 1TB, Monitor: 23 touch screen, with wireless KBD & Mouse. Dell-OptiPlex; 9020SFF, Core-i7@3.6 GHz, RAM: 16 GB DDR3, HDD: 1TB, Monitor: 19.5", with KBD & Mouse Apple iMac: Quadcore-i5@2.9Ghz, RAM: 8GB DDR3, Graphics: 1GB, HDD: 1TB, Monitor: 21.5" LED, with wireless KBD & Mouse HP Make: Intel core i5-6500, 6th Gen, RAM 8GB, 2TB HDD, DVD-RW, 18.5" TFT Monitor  Network Rack with 24 Port Switch
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**Soil Nutrient Analyzer Plant Nutrition Analyzer**

**Weather Stations**

**Soil Temperature Meter**

Soil Nutrient Analyzer	Plant Nutrient Analyzer	Touch Screen Weather Station With Solar Transmitter	Soil Temperature Meter
TPY Series V13.0.1 Instrument technical Parameter: Display Mode: LCD	TYS – 3N Series	Power Consumption: Base Station: 3XAA 1.5V LR6 Alkaline	Name: 4 in 1 Soil Survey Instrument Model : KC-300B Test Objects :

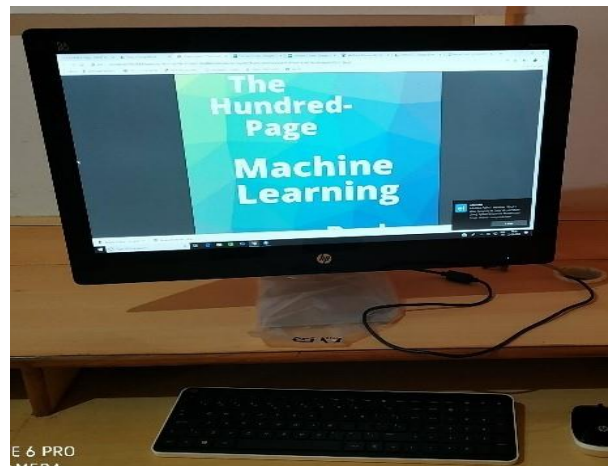
display(12864LCD display) Interface: USB Working Environment: 0~40°C 35~85% RH Alternating Current (AC): 220V, 50HZ, Adapter: 12V/3A Size: 32*28*11cm	Resolution: 0.01 Working Temperature : 0~50° C, Humidity : Less than 85% Power: Lithium Battery, Voltage : 4V Power : A 220V, 50hz Standby time: 48hours	Batteries Remote Sensor: 2x AA Lithium Rechargeable Batteries Transmission Distance: 100m Frequency :433MHz Temperature Range: -40°C --65°C Resolution:0.1°C	Su light, Moisture, PH Value, Temperature Power Supply : one 9V Block Battery Operating Temperature :±5°C~+40°C Size: 122mm X63mmX36mm Weight : About 73 (battery not Included)
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The above equipment's are procured under VGST K-FIST Level – 2 with the grants of 40 Lakhs (GRD No.338). 3 Research Scholars are doing research under this domain. The Principle Investigator is Dr.Nirmala C R.

### High end Computing Systems



Apple iMAC



Dell Optiplex



**Hp All-in One**



**HP Pavillion 23**

## **Licensed Software's Available in the Research**

### **Lab**

- 1. Access to cloud computing Environments like Google, AWS, Microsoft Azure.**
- 2. Licensed MATLAB and IBM Bluemix cloud Environment**

### **Safety measures in laboratories**

Sl No	Laboratory Name	Safety Measures						
		UPS	First aid box	Fire extinguisher	Good Earthing	Antivirus Protection	Firewall	CCTV Surveillance
1	Research Lab	Yes	Yes	Yes	Yes	Yes	Yes	Yes
2.	Server room	Yes	Yes	Yes	Yes	Yes	Yes	No

**UPS:** - In department there are 8 UPS with each assigned to particular laboratories. Total capacity of the UPS is 90KVA with 15KVA each for Research laboratory, Digital & microprocessor laboratory and CCP laboratory. CS Lab 1 to 4 are having 10KVA UPS. Server room is provided with 5 KVA ups.

**First aid box:** - First aid box has been made available in each floors of the Department.

**Fire extinguisher:** - Fire extinguisher has been replaced in the year 2016 and has been refilled recently.

**Good Earthing:** - Computers, network system and electrical equipment's are well protected by providing good earthing at the base of the building.

**Antivirus Protection:** -We have provided protection in the form of Microsoft Security essentials (MSE) for Windows 7 systems and Windows Defender in Windows 10 systems. Both MSE and defender are part of Microsoft campus license.

**Firewall:** - Security to user access is provided by Mikrotik Eth Router-CCR1009-7G-IC-IS

**CCTV surveillance:** - All the laboratories and corridors are well protected with cameras in order to monitor activities inside and outside the laboratory 24\*7.