

# **LOYOLA ACADEMY**

## **Research Facilities**

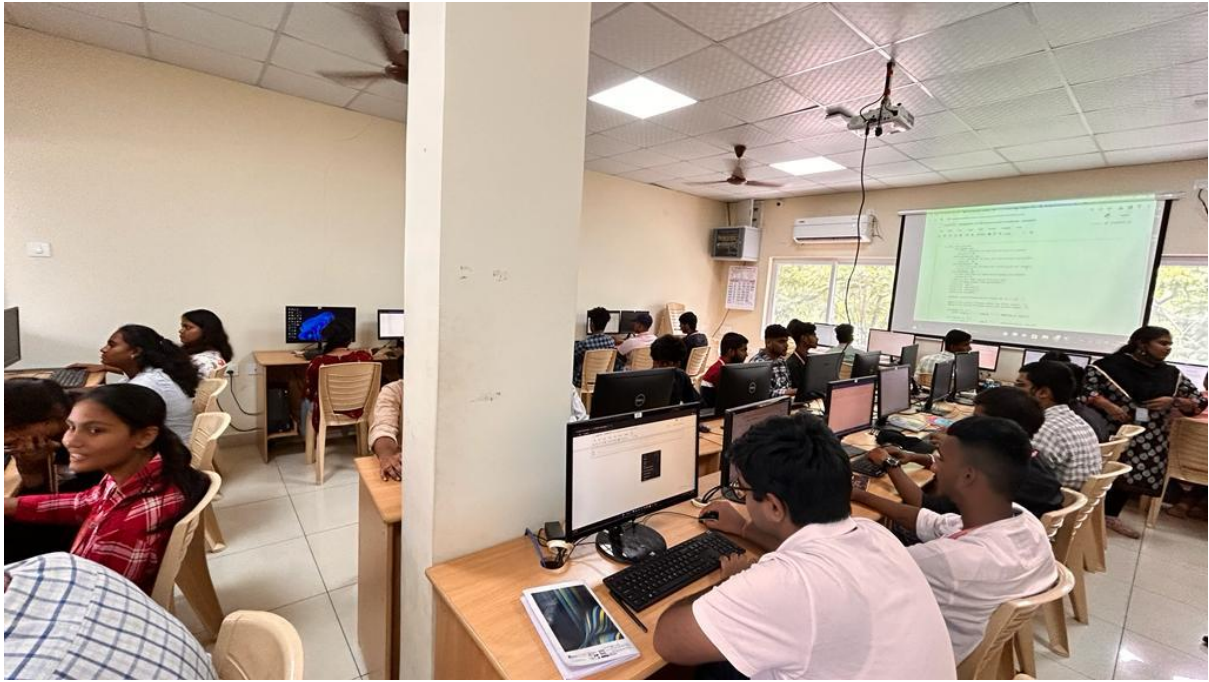
At Loyola Academy, research is promoted at department levels through curriculum based undergraduate research projects and internship projects. Loyola Academy promotes research by faculty as well as students through its research committee which was established in 2010. The Research committee (RC) takes care of various issues of research including ethical matters. The college has several Research Centres associated with various departments.

Research in computer systems (including architecture, networking, operating systems, and distributed systems) involves a wide and constantly updated variety of hardware, software, and networks. Current hardware includes high-performance Intel multicore platforms, a 200-node Intel cluster with several tens of terabytes of networked storage, a networking testbed cluster, and PC workstations. Our facilities include Linux, FreeBSD, and Windows systems, and our clusters enjoy 1 and 10 gigabit switched Ethernet connectivity. In addition, the Systems lab provides a common workspace for operating systems, networking, and architecture students, and features Windows workstations, a video projector, and floor-to-ceiling whiteboards.

Research in artificial intelligence, data mining, machine learning, natural language processing, and satisfiability/experimental algorithms is supported by many high-end Systems and server class compute resources for training models. Many of these workstation systems support 3-4 GPU cards, with servers that will support up to 8 cards.

Research in data management is supported by a combination of laptops, desktops, and a machine-cluster all running a suite of software systems. The current hardware configuration for the cluster includes 20 high-performance, Intel multicore servers with several tens of terabytes of storage and hundreds of gigabytes of RAM in total. The machines are configured with either Windows or Linux and run several state-of-the art database management systems including SQL Server, Spark, Hadoop, and Myria. In addition, the Database lab provides a common workspace for students, and features Windows and Linux workstations, a video projector, and floor-to-ceiling whiteboards.







GPS Map Camera

**Hyderabad, TG, India**  
Jeedimetla, Hyderabad, 500010, TG, India  
Lat 17.505767, Long 78.486432  
07/13/2023 13:20 GMT+05:30  
Note : Captured by GPS Map Camera

## DEPARTMENT LABORATORY

- ❖ Our world class infrastructure is of a high enough quality for our faculty to conduct research. Apart from a Plethora of laboratories, we also have an entire ecosystem of flora for our students to utilize.



## LABORATORY EQUIPMENTS

- ❖ Lab equipment allows students to actually perform experiments rather than just read about them. Instead of taking notes, they can observe and complete exciting experiments. Such hands-on learning often makes it easier to understand challenging theories and concepts.



ULTRA CENTRIFUGE



GEL ROCKER



PHOTOMETER



WATER BATH



INCUBATOR



SPEED REGULATOR



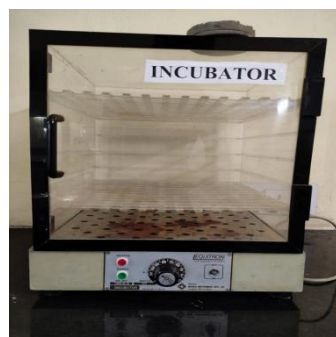
CIRCULATOR WATER BATH



ORBITAL SHAKER



VERTICAL LAMINAR FLOW



INCUBATOR



REFRIGERATOR



DIGITAL COLONY COUNTER



APPLIED BIOSYSTEM PCR



MAGNETIC STIRRER



INCUBATOR



AUTO CLAVE



CENTRIFUGE



FERMENTOR



PHOTOMETER



WATER BATH



HOT AIR OVEN



SEROLOGICAL BATH



UV TRANS-ILLUMINATOR



ROTARY FLASK SHAKER



CO<sub>2</sub> INCUBATOR



-85C FREEZER



CENTRIFUGE



VORTEX MIXER



BIOFUGE



B.O.D INCUBATOR



ICE FLAKING MACHINE



AUTOMATIC SERVO STABILIZER



STIRRER



MICROWAVE OVEN



COLONY COUNTER



LAMINAR AIR FLOW



CULTURE HOOD



GEL DRYER



WEIGHING MACHINE



AUTO CLAVE



FERMENTOR



UV-VIS SPECTROPHOTOMETER



NEXUS GRADIENT PCR



GEL DOC



HPLC



REAL TIME PCR



WEIGHING MACHINE



FLUORESCENCE SPECTROPHOTOMETER



ROTATORY EVAPORATOR



BACTERIOLOGICAL INCUBATOR



MINI SPINER



SOXHLET EXTRACTOR

## LOYOLA ACADEMY

### REPORT ON CHEMISTRY RESEARCH CENTRE

Chemistry department of Loyola Academy was given the recognition of Research Centre on 17 May 2021, by Osmania University. Earlier in the beginning of the year on 1 Feb.2021, title of Research Guide was conferred upon two of its faculty members Dr. Sonika Sharma and Dr P. Thirupathi from department of Chemistry.

Dr P. Thirupathi has initiated work on “Green and Sustainable Organic Transformations by Using Sustainable Auxillary Substances” as a co guide for a Mr. P. Sudhakar Reddy (Ph.D scholar). Dr Sonika Sharma is commencing a research project on “Photophysical Properties of Large Ring Heterocyclic Compounds Especially Florescence and Characterization using Langmuir Blodgett Technique”. Online classes due to Covid-19 protocol has hindered the start of experimental work, however infrastructure has been added to the Research Centre by adding non consumable (Glassware, instruments worth 2 lakh) meanwhile from Jan 2021 to June 2021

From September 2022, Dr P. Thirupathi had initiated research work on one pot multicomponent synthesis of heterocyclic compounds under greener conditions. He guided 4 Students in 2022 and 5 in 2023 in their M.Sc. research projects and submission of their thesis successfully. Dr. S. P. Mydhili started her work on green synthesis of 1,8-Dioxooctahydroanthenes and also guided 2 students in 2022 and 2 students in 2023. Mrs. R. Shalini Mamtha Jyothi also guided 2 students for the M.Sc. research projects in 2023. She worked on Diarylsulfones Catalysed by Bronsted Acid Ionic Liquids from  $\alpha$ -Amido Sulfones.





## LOYOLA ACADEMY

### REPORT ON FOOD TECHNOLOGY & MANAGEMENT RESEARCH LAB

Food Technology & Management Department of Loyola Academy was established in the year 2004. The department has various well-equipped labs to explore research like **Bakery Lab, Ice Cream Pilot Plant, Fruits And Vegetable Processing Plant, Chocolate Pilot Plant, Dairy Pilot Plant, Microbiology Lab, Food Analysis And Quality Control Lab.**

- **Bakery Lab** is furnished with a Spiral Mixer, Planetary Mixer, Proofing Cabinet, Dough Divider, Dough Moulder, Dough Sheeter, Baking Oven, Bread Slicer, etc.
- **Ice Cream Pilot Plant** is furnished with a Pasteurizer, Homogenizer, Aging Vat, Batch Freezer, Deep Freezer etc.
- **Fruits And Vegetable Processing Plant** consist of equipment like Fruit pulper, Fruit crusher, Bottle filling machine, Tray Drier, Can reformer, Can flanger, Can sealer, Steam boiler, Steam Jacket kettle, Can retort, Fruit Juicer (Screw type), Hydraulic juice press, Crown corking machine
- **Chocolate Pilot Plant** has Ball Mill, Chocolate tempering and moulding machine, Attritor, Freezer
- **Dairy Pilot Plant** consists of a Khova Making machine, Cream separator, Butter churner
- **Microbiology Lab** is well equipped with BOD Incubator, Autoclave, Laminar Air Flow, Microscopes, Colony counter, Refrigerator, etc.
- **Food Analysis and Quality Control Lab** consists of Hot Air Oven, Infrared moisture meter, Vacuum oven, Muffle furnace, Hot water bath, Protein Analyzer, Soxhlet apparatus, Fiber analyzer, Abbe refractometer, Gerber centrifuge, Bomb Calorimeter etc.

Faculty members of Food Technology and Management, Dr Kavita Waghay, Dr .A Ravinder, and Dr P Kiran Kumari are guiding students to carry out various project works. Seed money projects have also been initiated and research work is been carried out by Dr A. Ravinder, Dr P. Kiran Kumari, Dr Sukh Veer Singh and Mrs M. Anusha.





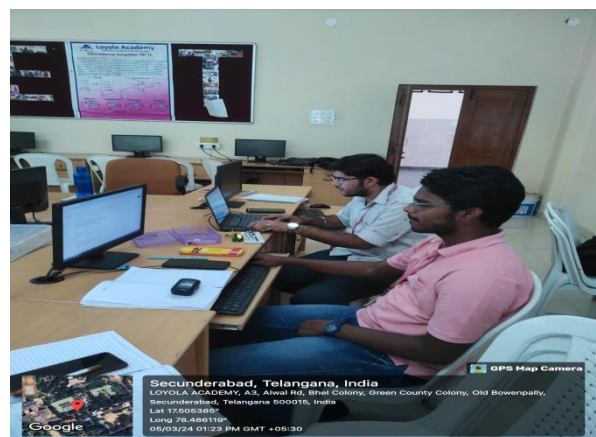
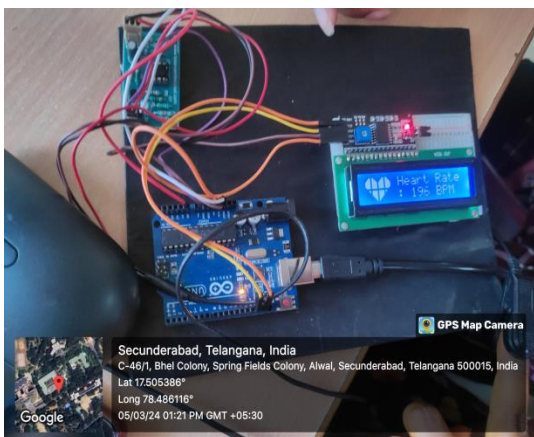
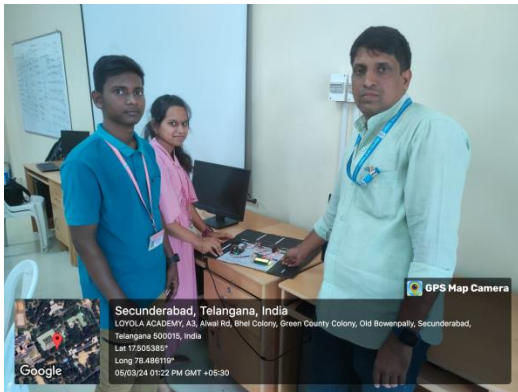




# LOYOLA ACADEMY

## REPORT ON IOT RESEARCH CENTRE(2023-2024)

The IOT Research Centre serves as a hub for cutting-edge research, innovation, and collaboration in the field of Internet of Things (IoT). The IoT Research Centre is equipped with state-of-the-art facilities, including, Advanced IoT lab with a diverse range of sensors, actuators, development boards, and communication protocols. High-performance computing resources for data analytics, machine learning, and simulation of IoT systems. The centre is actively engaged in several research projects aimed at addressing pressing challenges and exploring emerging trends in IoT. Students from various fields like machine learning, computer science and engineering, AI collaborate with IoT Research center to carry forward their projects. Training of students through workshops, and seminars, empowering them with practical skills and knowledge in IoT.





**Smart Parking System**



**Laser Light Security System**



**Obstacle Avoiding Car**



**EVM Machine**



**Weather Station**



**Water Quality Monitoring**

## DEPARTMENT OF MASS COMMUNICATION RESEARCH CENTER FACILITIES

The Department of Mass Communication was established in 2004. Ever since it has been a third eye through the lens of the cameras and also a voice for the people for letting the people out there to explore the unexplored.

Not theoretically but the majority of the time the Department equipment has definitely been contributing



towards the world through its documentaries, research papers, photographs. Our students showcase their own research activities while capturing the reality through different events/ through their social media pages.

Our department research center is not an authorized research center but the scope of research facilities includes the high end 2 Sony Cameras, 4 Canon Cameras and 27 mac Systems also 3 Windows systems we have in our Mass Communication Studio.