JAYA ENGINEERING COLLEGE,

THIRUNINRAVUR, CHENNAI

1. Title of Best Practice - TEACHING – LEARNING PROCESS AND MENTOR SYSTEM

2. Objectives

- To ensure the completion of syllabus according to the academic calendar of College
- To encourage teachers to adapt to advance pedagogical methods including mind mapping and diagrammatic way of expressions of the concepts.
- To improve pass percentage, average marks in each semester and enhance the number of ranks bagged by the college at the university level examinations
- To increase the placement of college as quality of students would be improved
- To minimize dropouts, improve performance and reduce stress of the students through personal counseling and club activities.
- To participate more in co-curricular and extracurricular activities.

3. The context

Teachers may use different methods to teach in class room. They teach at different paces. It was observed that syllabus coverage remains a challenge when there is need of uniformity. The teachers find it difficult to keep pace with the student learners having a good knowledge and understanding of modern technology. There was a need of uniformity and standard setting so that everyone is able to meet the objective of best teaching practices. It has become essential for teachers to adopt to the latest pedagogic styles in class room teaching. The mismatch between the student learner and the teacher in the use and comfort of handling varieties of techniques like mind mapping and other diagrammatic way of teaching learning is used. Mentors are allotted with minimum set of students to help students in all avenues other than regular academics. Counseling is done for needy students to improve their performance. If there is any serious issue , the student is asked to seek assistance from professional councilor.

4. The practice

- Academic calendar is prepared under the supervision of academic coordinator based on the academic calendar of Anna University for affiliated institutions.
- Academic calendar is uploaded on the website for information to students, teachers and others.

• On the basis of that, every faculty prepares the academic planner in the form of course file which is audited by the department head.

• The heads of different departments monitor the pace of coverage of the syllabus and it is reported to the Academic coordinator periodically.

The class attendance of the students is also monitored and if there is any long absence more than 2 days, it is informed to parents to find the reason and proper advice is provided by class councilors and Head of the Department.

• Timely Feedback is obtained from students regarding the content delivery by different teachers through class committee meeting.

• Slow learners and advanced learners are identified. For slow learners additional coaching is given to improve their performance and for fast learners additional coaching and training is provided to get placement.

• Assignments, Model examinations are conducted at scheduled dates to improve performance in the University examinations.

Model examination progress is also monitored and the same will be communicated to Parents. The University examination results are also communicated to parents. Parents of Students those who have got arrear in more than two courses will be called and discussed the problems and solutions.

We conduct more model examinations with revision classes to enhance the performance of students in university examination.

• Timeline of Assignments, syllabus coverage is monitored by Academic coordinator.

• College has a separate exam cell to conduct model examinations and University examinations in a centralized manner. Model examination evaluation is also done centrally.

• All class room has Projectors for effective teaching by the faculty members.

• Mentors will have a meeting at regular intervals.

Our college has various clubs for students. The clubs will conduct events for all sets of students in all avenues so that they are engaged with some creative activity that will enhance their lifestyle and performance in studies.

Our college has basket ball, volley ball courts and cricket ground inside the campus and we have indoor games like table tennis, snooker etc. Our students will practice and participate in the events at various levels.

5. Evidence of Success

• All teachers have adopted modern pedagogic styles and ICT in their classes.

• Appropriately paced and timely completion of syllabus

• Increased attendance in the classes

• Improvement in results , pass percentage and average mark.

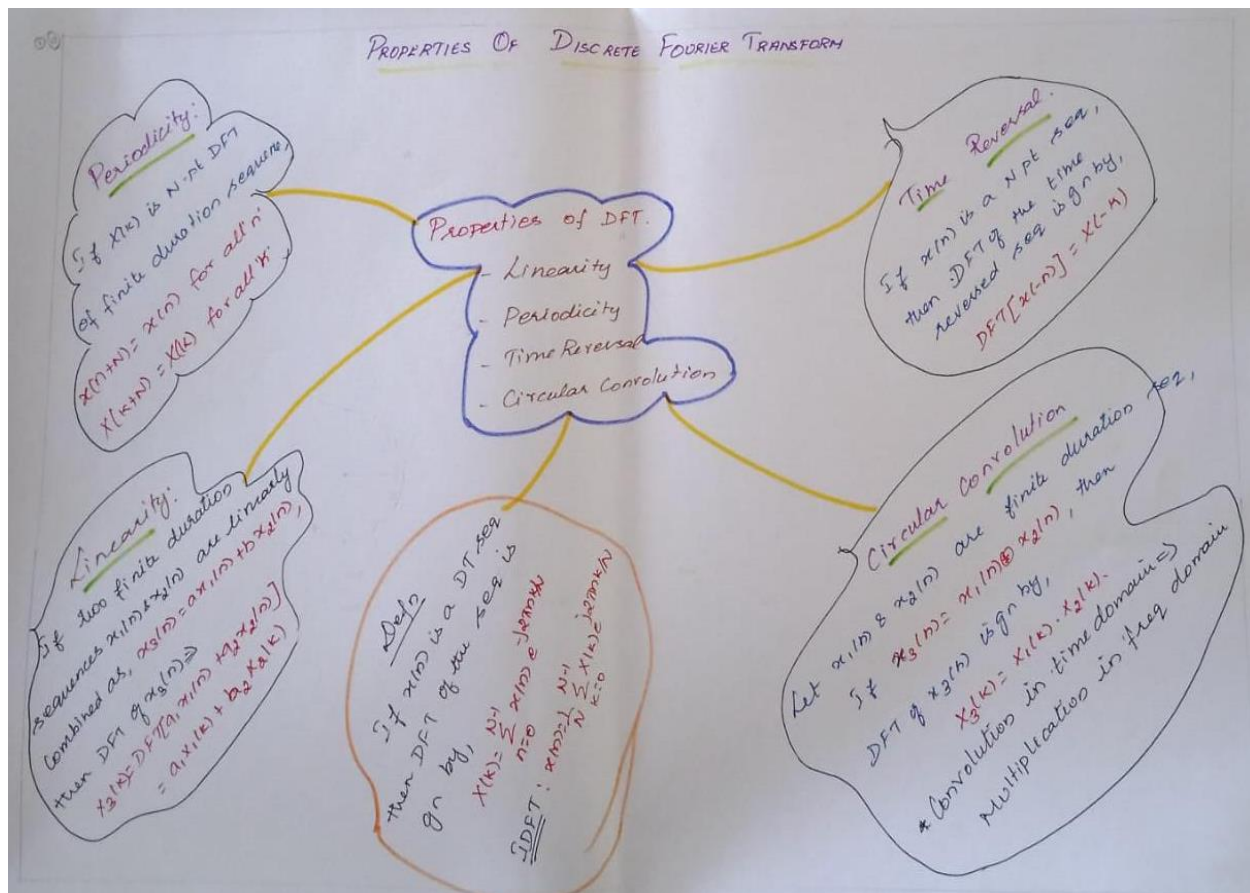• Every year we have university rank holders.

• Placement is also improved with available skill set.

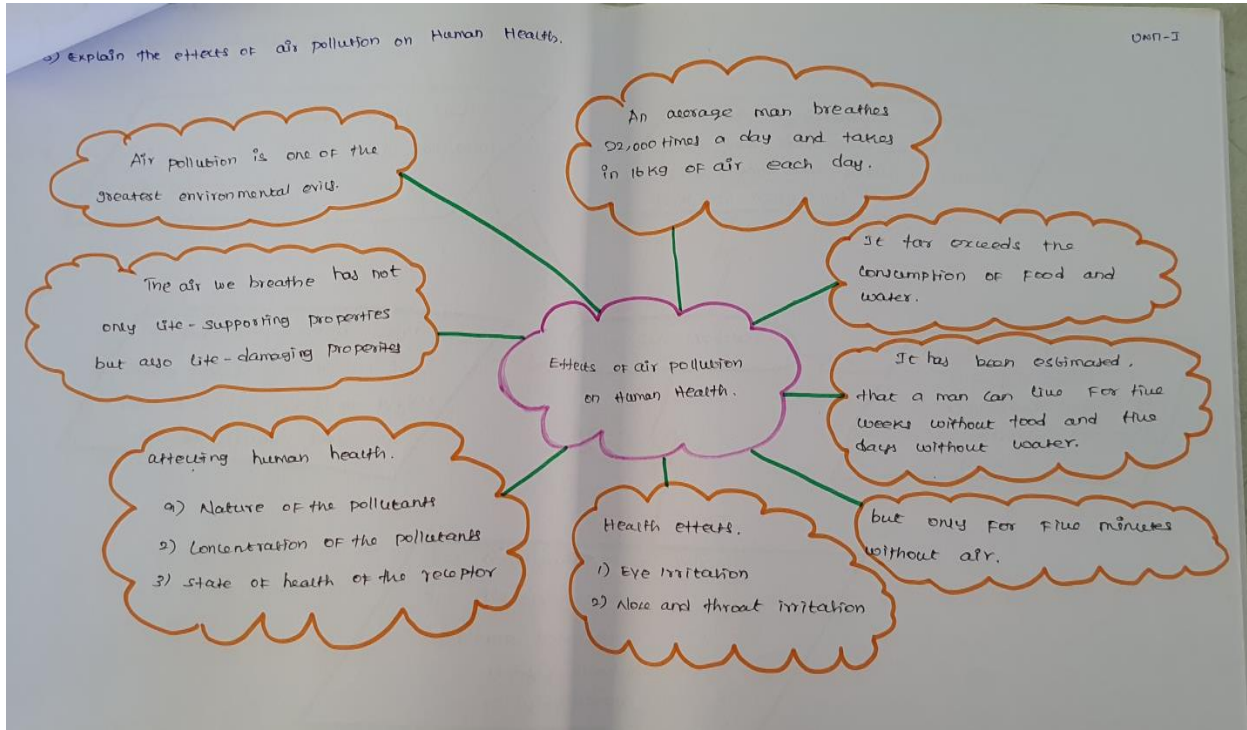### 6. Problems encountered and Resources required.

This practice requires a close monitoring system which can show the progress and gaps at each point of time. A dedicated professor is in-charge academic activities in the campus. for Gaps has to be filled up. Teachers need to update their knowledge in resources and latest tools. The expenditure towards the maintenance of ground is more. Faculty members need to spend time for preparation of mind mapping and others diagrammatic models used for teaching. More model examination answer scripts need to be evaluated and analyzed.

Best Practices - 1

Mind mapping technique is a diagrammatic technique used to remember and recall the concepts that displays information visually, providing a structured way to capture and organize ideas. Mind maps are radial. They start at the centre and outward. To create a mind map, a single topic is added at the centre of the Mapping. With the main idea at the centre and related ideas are added. The diagram is for Digital Signal Processing.
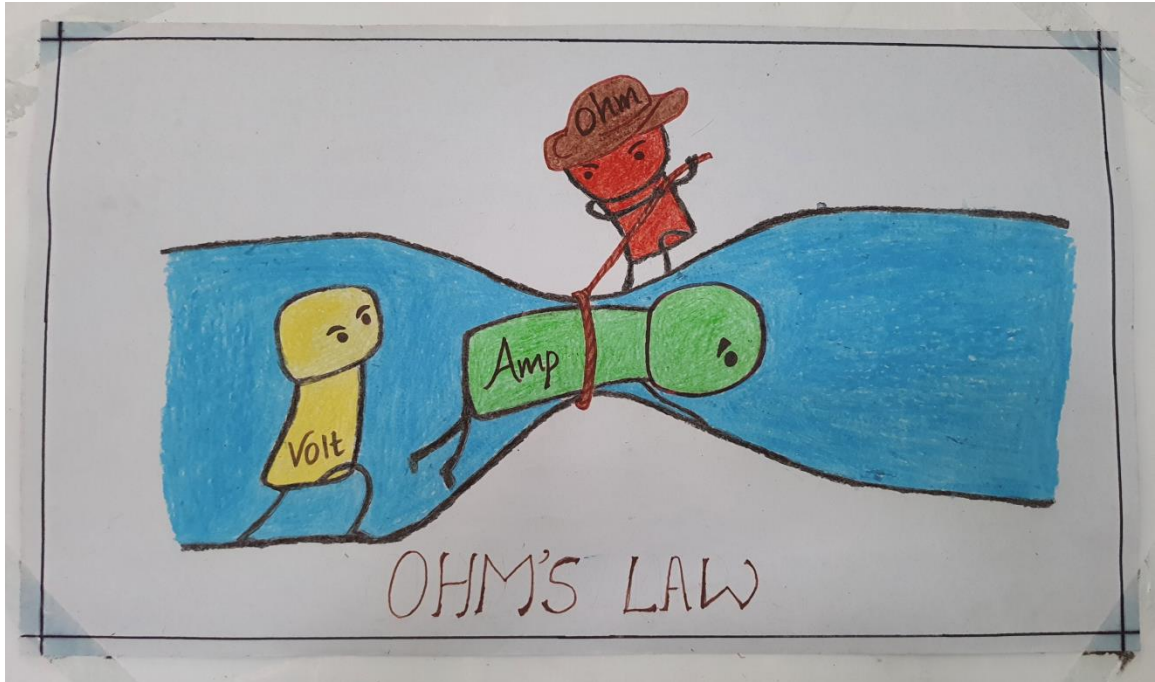
Effects of Air pollution

Q) Explain the effects of air pollution on Human Health.

Air pollution is one of the greatest environmental evils.

The air we breathe has not only life-supporting properties but also life-damaging properties

affecting human health.

1) Nature of the pollutants
2) Concentration of the pollutants
3) State of health of the receptor

An average man breathes 22,000 times a day and takes in 16 kg of air each day.

It far exceeds the consumption of food and water.

It has been estimated, that a man can live for five weeks without food and five days without water.

but only for five minutes without air.

Effects of air pollution on Human Health.

Health effects.
1) Eye irritation
2) Nose and throat irritation

Pictorial representation of Ohm's Law

Diagrammatic

Diagrammatic representation of Energy saving
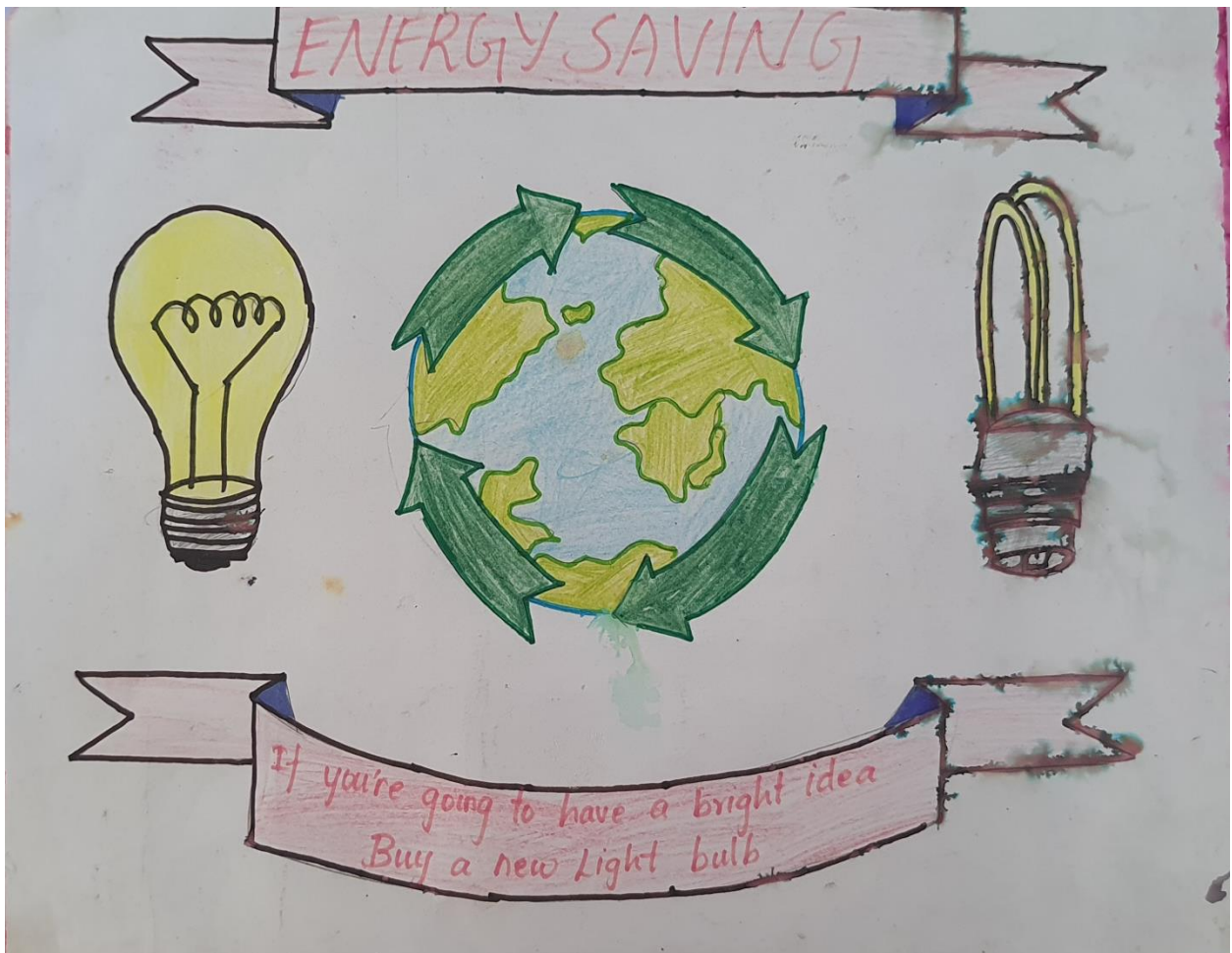
Best Practices - II

1.Title of the Practice: Jaya Knowledge Resource Centre (JKRC)

2.Objectives of the Practice:

- Jaya Engineering college always thinks that lifelong learning should be the ideal way to reach the goal. The main objective of the system is to enable the students to learn from hands on training for the growth and benefit of our students.
- Our college always likes to adapt a proactive approach towards all aspects of the institution and accordingly create a good environment for development of the students through technical learning and understanding.

  The aim of the Jaya Knowledge Resource Centre (JKRC) is to
- Support the learning process of the students through provision of knowledge/information.
- Meet knowledge/information needs of the students to support their research activities.
- Respond effectively, wherever possible, to the knowledge/information needs of the students/faculty members.
- Provide services and facilities to meet the knowledge requirements.

3.The Context:

Our college offers nine Under Graduate programmes and seven Post Graduate programmes. We have created Jaya Knowledge Resource Centre (JKRC) to improve the project management ability of the student and also JKRC increases the ability to overcome and to survive in challenging fields of projects. To do some good projects and to do some

enhancement in existing project, the financial investment of student is more. By working on the existing project, student batch need not to buy the basic component/equipment. They need to invest only on components/equipments used for enhancement of the same. This will enable them to excel and makes constructive implementation and long lasting impact on the career of the students. Given the complexity of activities and diverse nature and needs of the stakeholders, it is essential to support the students for doing good project work. In addition, the institution likes to involve the students in the process of analysis, decision making and planning and also enable them to understand various concepts and technology and challenges associated with the modernization of the projects.

4. The Practice:

In Jaya Engineering college , Institution's Innovation Council (IIC) is established where there is a storage of more than 50 hardware projects and their reports to inherit the projects by junior batches of students of the college. In this centre, students are allowed to modify the existing projects with the written request from the in-charge of centre. Every year, It is Planned to append centre with the best projects from all departments.

Meetings shall be held in line with the regular schedule and minutes of the meeting held shall be submitted on Saturday to the Principal by the respective committee In-charges.

The activities, achievements, challenges and issues faced by the committees are discussed and appropriate steps are taken from an academic point of view to achieve maximum results in future.

Staff members are advised to update the Jaya Knowledge Resource Centre by advising students with more minor and major projects and to motivate them work on hands on projects. The Head of the Institution, along with the HODs, conducts review of the activities going on in JKRC once in three months. Appropriate decisions are taken to improve the infrastructure and maintenance of the facilities to create a better environment.

5.Evidence of success:

The detailed project information of all projects is maintained by JKRC. The Pre Final years students are visiting the JKRC regularly and clarifying doubts for the future enhancements.

After creation of JKRC, From department of Electronics and communication Engineering, One batch done a project in automatic battery charger with analog meters. The batch was trying to convert the same with digital meters. But the charger has two chargers and uses single transformer. It was not possible to convert both meters into digital, they converted one meter digital and left another meter analog. Mechanical Department students made efficient 3.5HP lightweight power tiller. The main working principle of transmission system is based on chain sprocket mechanism to reduce cost. The developed transmission system is provided with a front or rear mounted powered rotary unit for forward movement as well as for tillage operation. The same machine is equipped with cutting tool which may be used for grass cutting, paddy, wheat .

In Electronics and Instrumentation Engineering ,students made a project, Renewable energy based natural disaster detection system Using LoRaWAN. Forest fires response operations are becoming increasingly important but challenging because they are traditionally based on visual observations and decision-makers estimations that are made under the high responsibility conditions in a lack of time. It has the disadvantages of difficulty in long distance communication and low Efficiency. Along with forest fire detection, cutting of forest trees is also monitored for preventing smuggling activities. All these sensor data will be transmitted by the LoRaWAN protocol which is capable of transmitting data over long distance with low power. The use of LoRaWAN is to transfer data on large distance with low power consumption.

After Creation of Cell about 15 students completed their projects with technical assistance from the JKRC.

☐ There is a Gradual increase of utilization of the centre.

- Students Innovative Projects have been increased through Jaya Knowledge Resource Centre (JKRC) and participated in some competitions held in various Institutions and Organizations.

- Admissions are far better than the other Colleges in the same town and many other institutions in the state.

- Consistent placements achieved by the students in the last four years.

6.Problems Encountered and Resources Required

We are not able to keep some of the hardware projects because it is connected with computer.

- The mobile number and Email Address of project batches need to be updated periodically.

- Most of the students focus only on academics and seldom come forward to costlier hardware projects.

- Encouraging students is a big task for the mentors as well as other faculty members.

Battery charger photos 12-72 V Double Charger
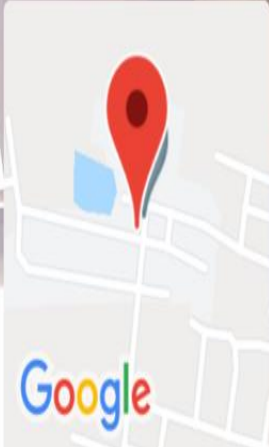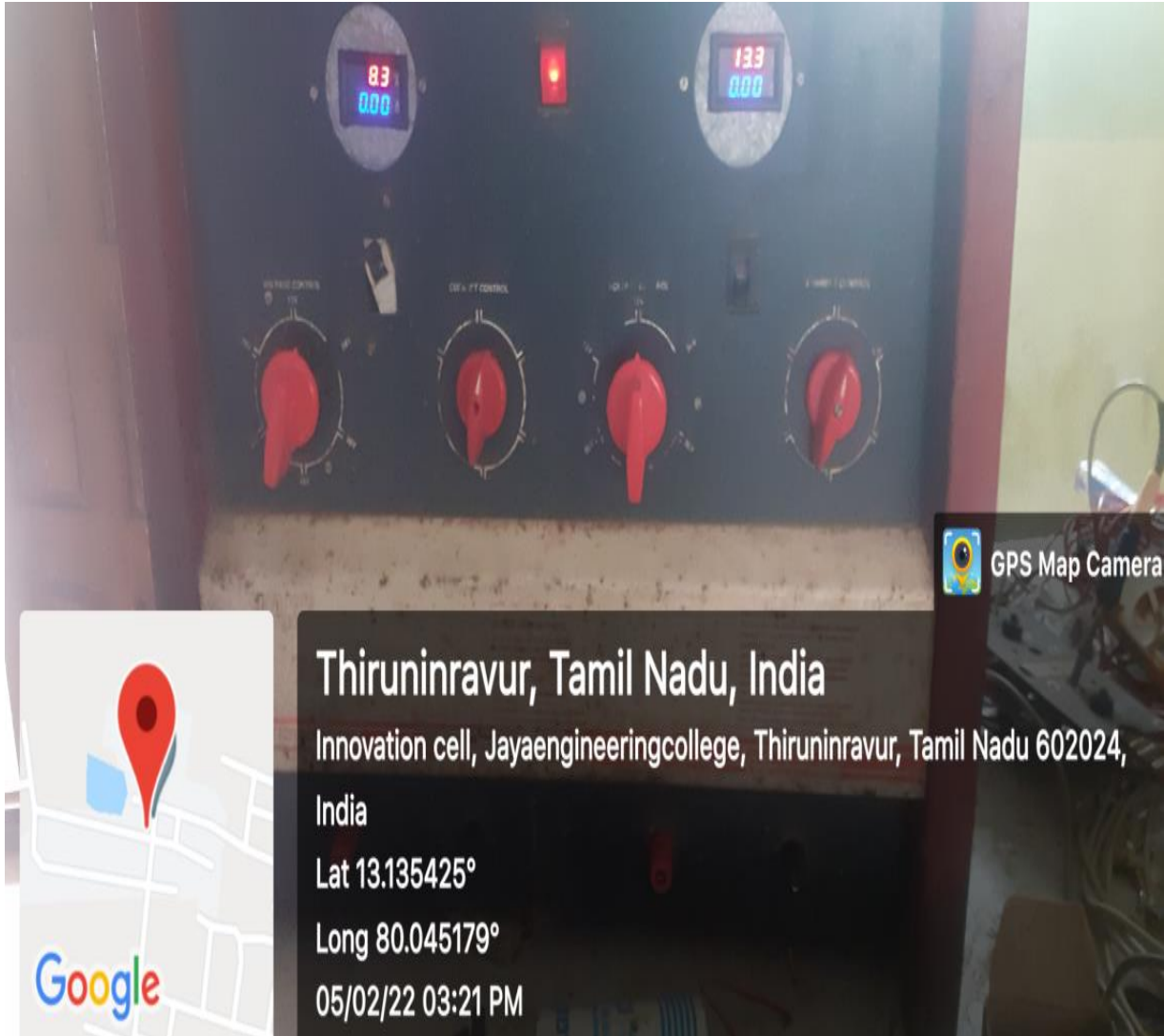
Thiruninravur, Tamil Nadu, India

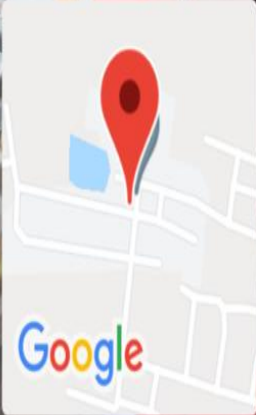Innovation cell, Jayaengineeringcollege, Thiruninravur, Tamil Nadu 602024, India

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Thiruninravur, Tamil Nadu, India

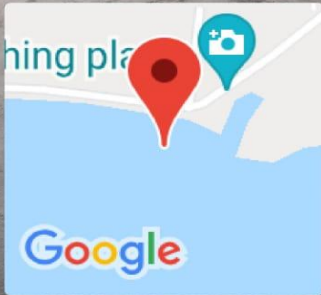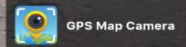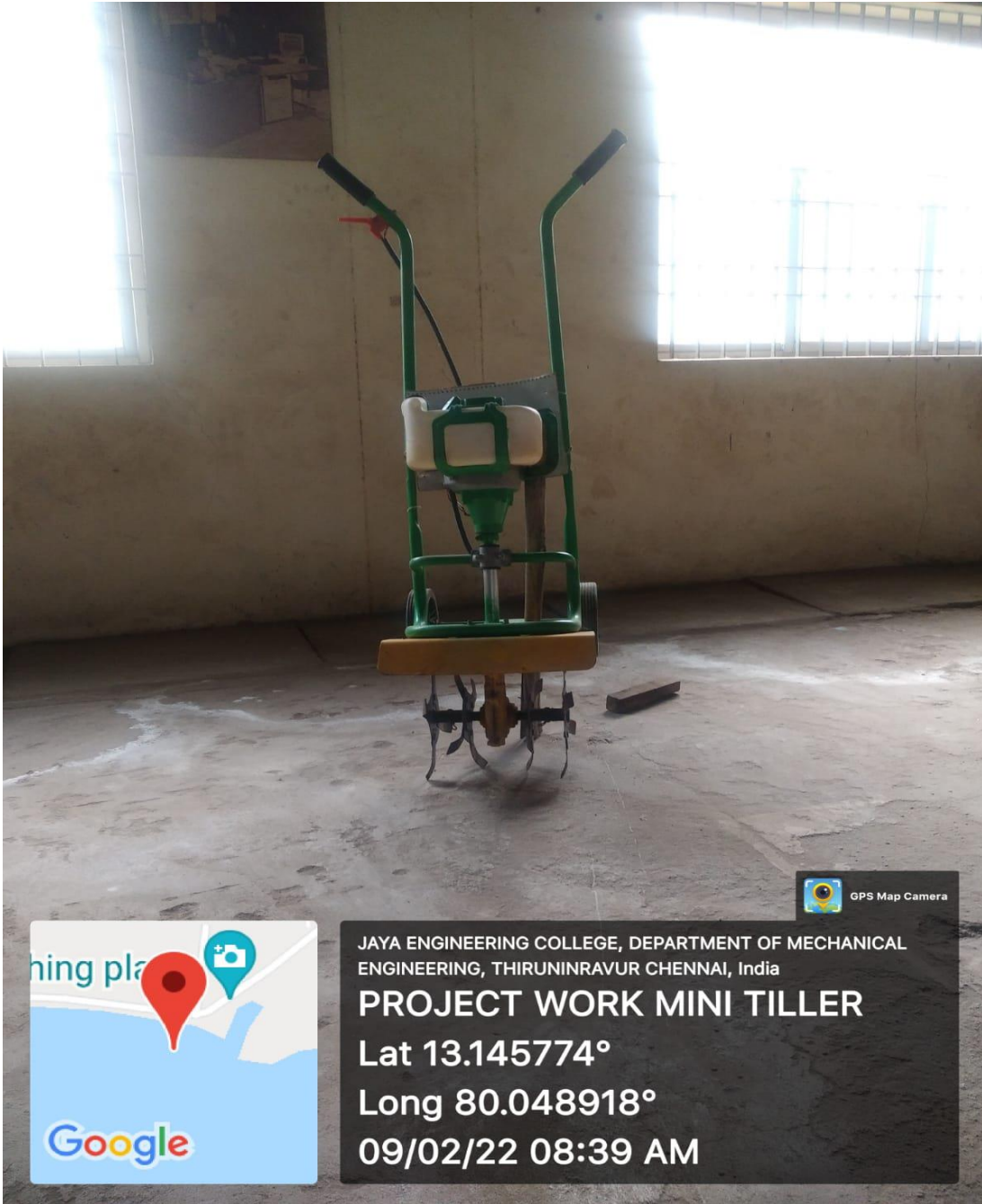Innovation cell, Jayaengineeringcollege, Thiruninravur, Tamil Nadu 602024, India

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DESIGN AND DEVELOPMENT OF AGRI POWER MINI TILLER

JAYA ENGINEERING COLLEGE, DEPARTMENT OF MECHANICAL ENGINEERING, THIRUNINRAVUR CHENNAI, India
PROJECT WORK MINI TILLER
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JAYA ENGINEERING COLLEGE, DEPARTMENT OF MECHANICAL
ENGINEERING, THIRUNINRAVUR CHENNAI, India
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# Renewable energy based natural disaster detection system Using LoRaWAN
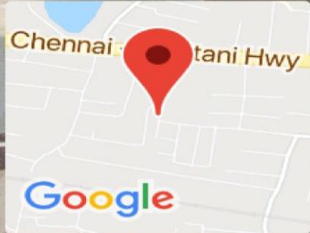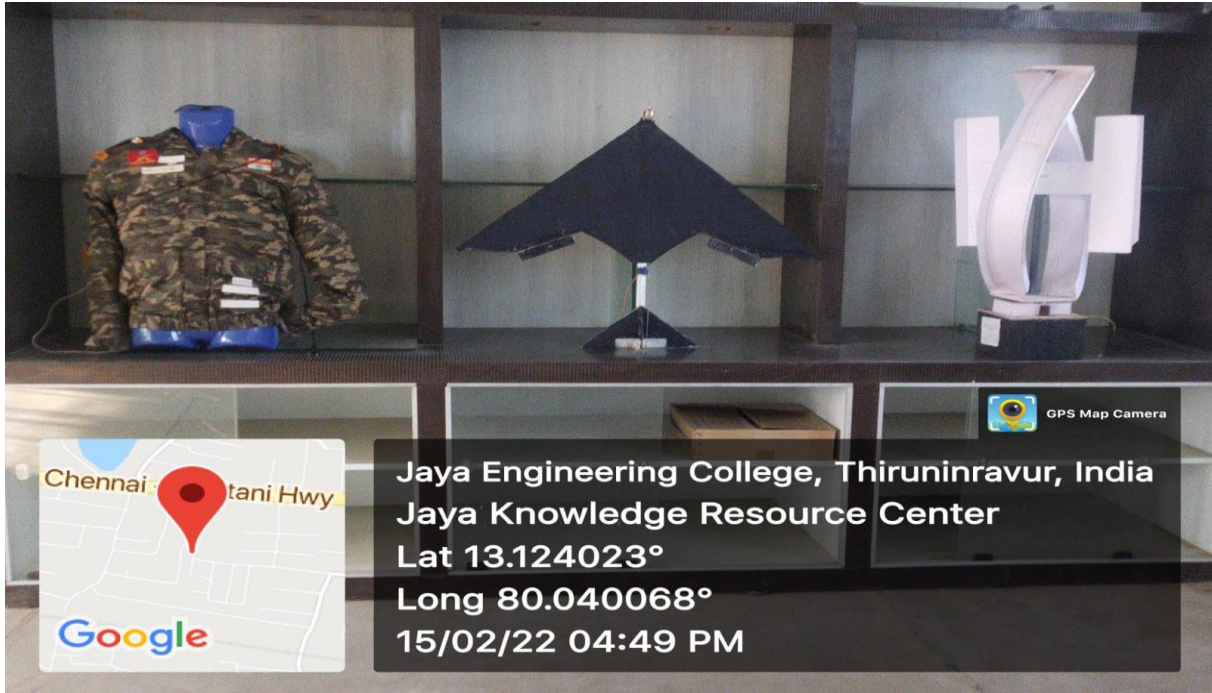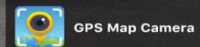
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Jaya Knowledge Resource Center
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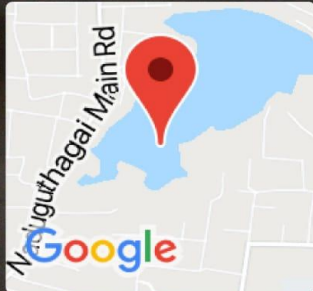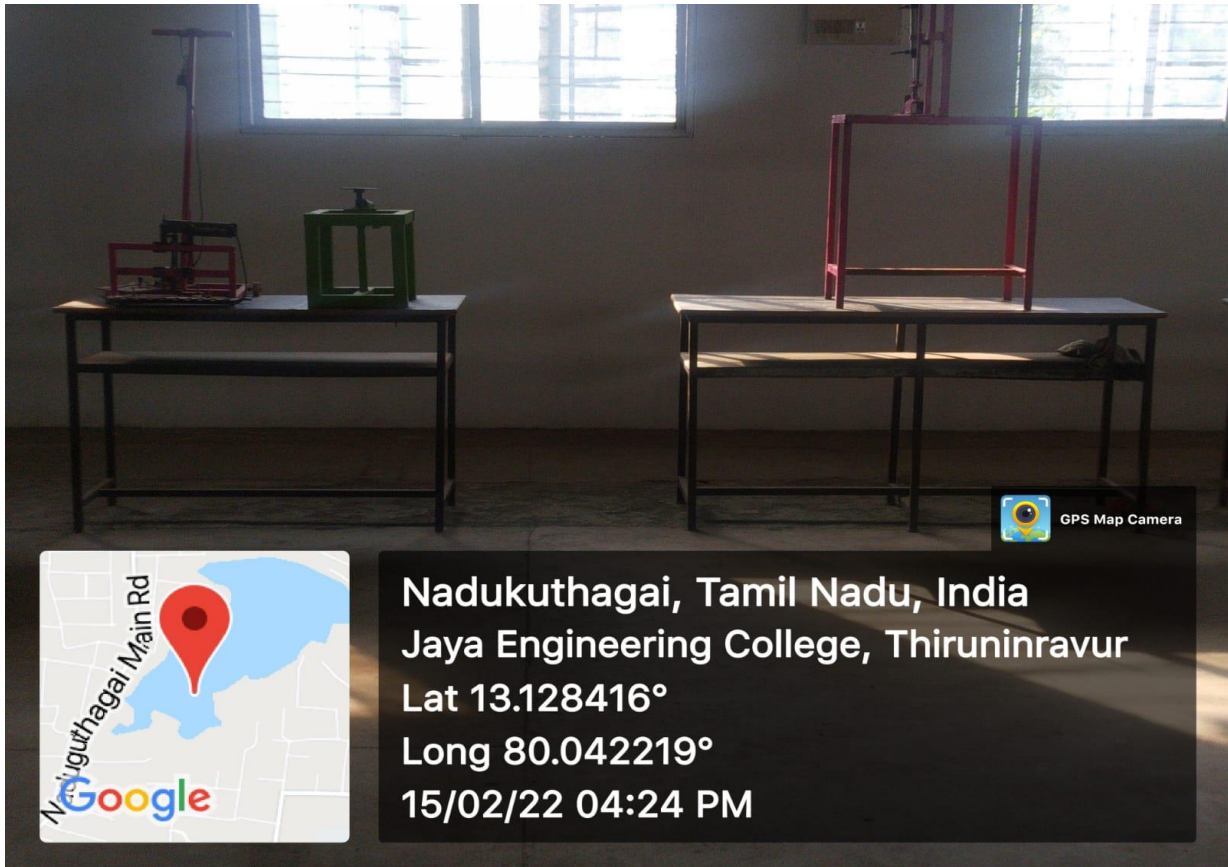
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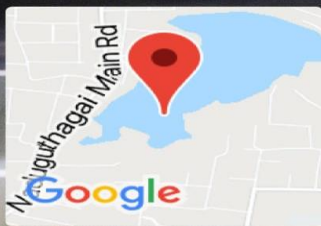Lat 13.128416°
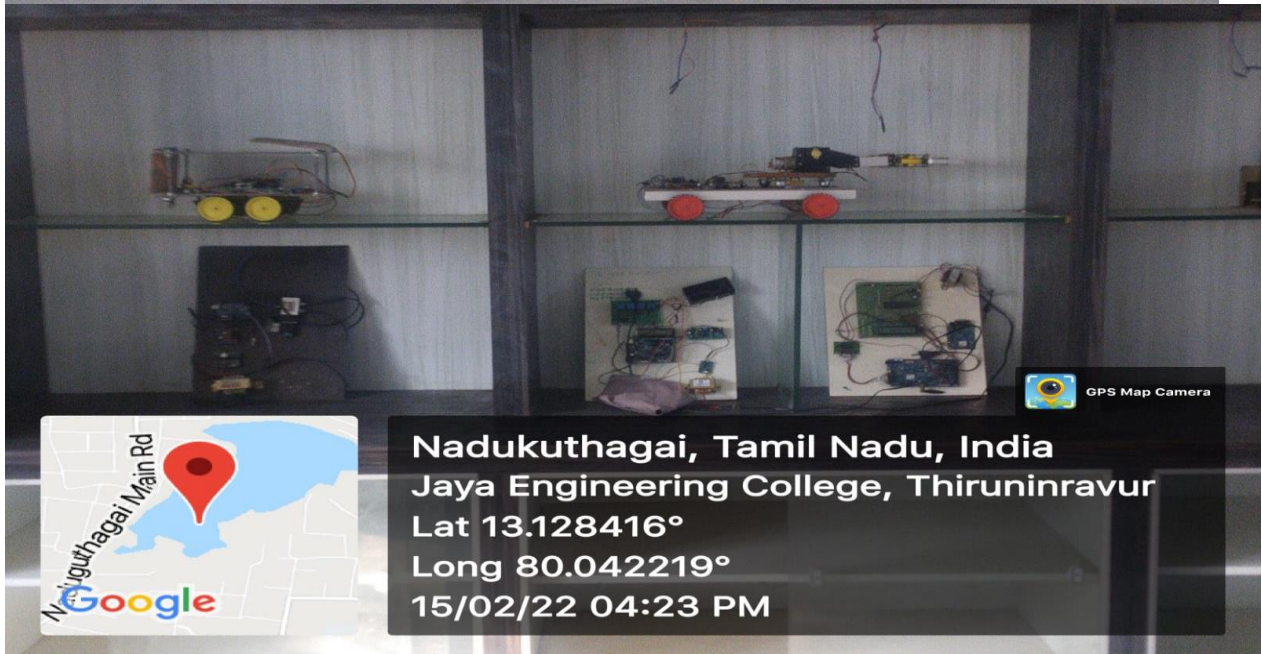Long 80.042219°
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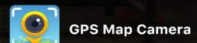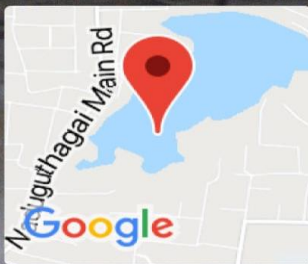
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