

KALINGA GARA POLYTECHNIC

Kalinga Fab Lab (Powered By Karkhana)

Activities -2023-24

Introduction:

Kalinga Fab, powered by Karkhana, has successfully conducted a series of engaging and informative events, including seminars, workshops, and an ideathon. The events aimed at providing participants with valuable insights into various technological domains and hands-on experiences. The collaborative efforts of our dedicated team, consisting of Siddharth Bhatte, Nandan Singh, Surajit Paul, Sarbeswar Rout, Aisurya Mishra and Abhilash Panda have ensured the success of each program.

Event Overview:

Session-01:

Introduction to the Fab Lab by Karkhana Team:

Date: 28 July 2023

Duration: 1 Day

Facilitators: Siddharth Bhatte (Founder and CEO), Nandan Singh (COO), Surajit Paul (Education Program Manager)

Coordinator: Abhilash Panda (Fab Lab coordinator), Sarbeswar Rout (Fab Lab incharge) & Aisurya Mishra (Student coordinator)

Session Highlights:

Abhilash Panda (Fab Lab coordinator) welcomed all facilitators, coordinators and students for first session of Fab lab.

Mr. Siddharth Bhatte, the Founder and CEO of Karkhana, commenced the session by presenting the purpose of the Fab Lab. He elaborated on the core values and objectives, emphasizing the role of the Fab Lab in fostering innovation and hands-on learning.

Benefits of the Fab Lab were discussed, focusing on how it serves as a hub for exploration and experimentation, preparing students for the ever-evolving technological landscape.

Educational Focus:

Mr. Bhatte detailed what students would learn in the Fab Lab, emphasizing practical skills and real-world applications. The session aimed to set clear expectations for the educational journey within the Fab Lab.

Innovation by the Fab Lab:

Siddharth Bhatte concluded his session by discussing the culture of innovation within the Fab Lab. He shared examples of successful projects and highlighted how the Fab Lab encourages creative thinking and problem-solving among students.

The programme ended with vote of thanks by Sarbeswar Rout.

Session-02

Introduction to the Electronic World Seminar:

Date: 28 Aug 2023

Duration: 1 Day

Facilitators: Siddharth Bhatte, Surajit Paul

Coordinator: Abhilash Panda(Fab Lab coordinator), Sarbeswar Rout(Fab Lab incharge) & Aisurya Mishra(Student coordinator)

Session Highlights:

Understanding the Fab Lab:

Siddharth Bhatte and Surajit Paul jointly conducted sessions for our students, providing a detailed understanding of the Fab Lab and its significance in the modern technological landscape.

Diving into the Latest Technology:

The seminar allowed students to explore the latest technologies and advancements in the electronics world. The facilitators covered key topics, ensuring students gained valuable insights into emerging trends.



Session-03

Interaction & Lab session

Date: 15 Sept 2023

Duration: 2 Days

Facilitators: Siddharth Bhatte, Surajit Paul , Nandan Singh

Coorinator: Abhilash Panda(Fab Lab coordinator), Sarbeswar Rout(Fab Lab incharge) & Aisurya Mishra(Student coordinator)

Session Highlights:

Interaction with Faculties:

Siddharth Bhatte initiated the inaugural session by interacting with all faculties, elucidating the purpose and role of the Fab Lab in academic and practical contexts.

Introduction to Components and Tools:

Surajit Paul took three sessions, introducing all faculties and students to the components and tools available in the Fab Lab. These sessions aimed to familiarize participants with the resources essential for their educational journey.



Session-04

Electronics and Circuit Design Workshop

Date: 9 Oct 2023

Duration: 1 Day

Facilitator: Surajit Paul

Coorinator: Abhilash Panda(Fab Lab coordinator), Sarbeswar Rout(Fab Lab incharge) & Aisurya Mishra(Student coordinator)

Session Highlights :

The Electronics and Circuit Design Workshop conducted by Surajit Paul was a resoundingsuccess. Through a combination of theoretical explanations, software simulations, and hands-on practice, participants gained valuable insights into the world of electronics. The interactive and engaging nature of the workshop not only imparted knowledge but also sparked creativity among the students, setting the stage for further exploration in the field of circuit design.



Session-05

3D Design and Printing Workshop

Date: 6 Nov 2023

Duration: 1 Day

Facilitators: Surajit Paul and Mr. Debangana

Coordinator: Abhilash Panda(Fab Lab coordinator), Sarbeswar Rout(Fab Lab incharge) & Aisurya Mishra(Student coordinator)

Session Highlights :

The 3D Design and Printing Workshop conducted by Surajit Paul and Mr. Debangana was a comprehensive and enriching experience for the participants. Through a combination of theoretical insights, hands-on design sessions, and practical demonstrations, students not only learned the fundamentals of 3D design but also gained valuable insights into the entire 3D printing process. The workshop successfully bridged the gap between theoretical knowledge and practical application, equipping students with skills essential for the modern era of design and manufacturing.



Session-06

Trending Technologies Workshop

Date: 20 Nov 2023

Duration: 1 Day

Facilitators: Siddharth Bhattar (Founder and CEO), Surajit Paul

Coorinator: Abhilash Panda(Fab Lab coordinator), Sarbeswar Rout(Fab Lab incharge) & Aisurya Mishra(Student coordinator)

Session Highlights :

The Trending Technologies Workshop conducted by Siddharth Bhattar and Surajit Paul provided students with a comprehensive understanding of the latest advancements in technology. From AI and ML to blockchain, drone technology, AR, VR, and IoT, participants gained valuable insights into the transformative power of these trends. The interactive and informative nature of the workshop sparked curiosity and awareness, encouraging students to explore and embrace the exciting world of emerging technologies.



Session-07

Rural Rethink- Ideation Program Launch

Date: 28 November 2023

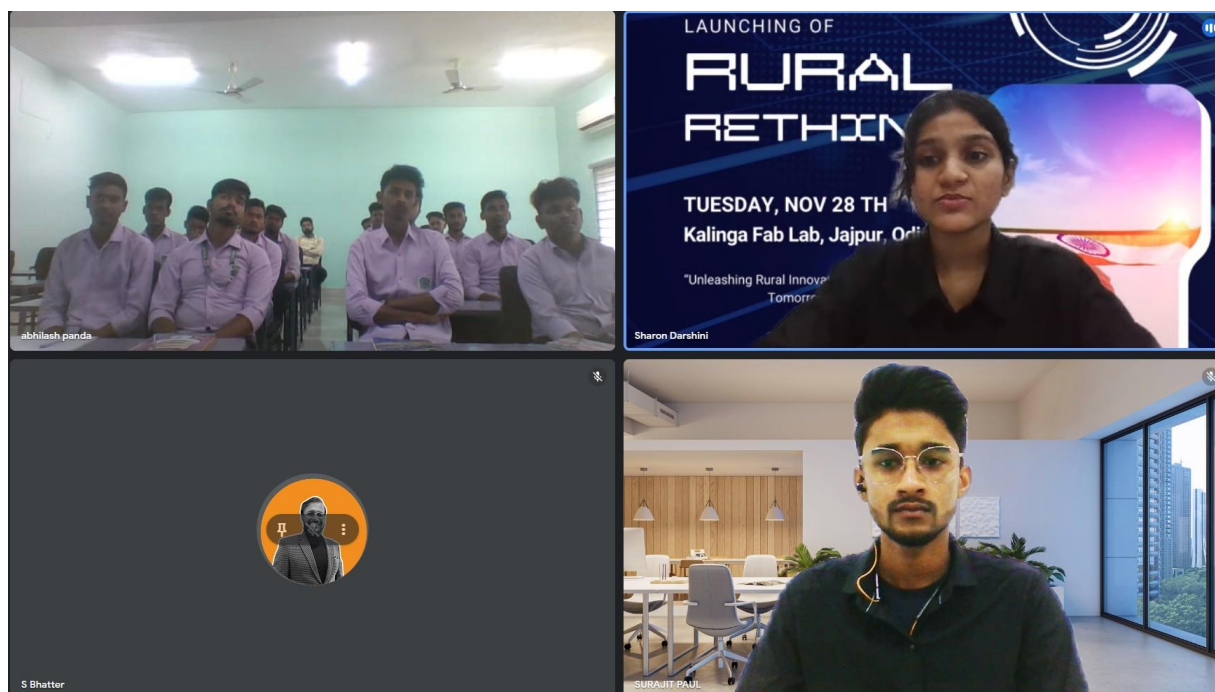
Duration: 1 Day

Facilitators: Siddharth Bhatte , Surajit Paul , Sharon Priyadarshani

Coordinator: Abhilash Panda(Fab Lab coordinator), Sarbeswar Rout(Fab Lab incharge) & Aisurya Mishra(Student coordinator)

Program Launch Highlights:

The launch of the Rural Rethink Karkhana Ideation Program marked the beginning of a collaborative effort to address rural challenges through innovation. The engagement of participants, combined with the guidance of the facilitators, set a positive tone for the ideation process. As the program progresses, the Rural Rethink Karkhana team anticipates a diverse range of creative solutions that have the potential to make a meaningful impact in rural communities.



Session-08

Rural Rethink- Ideation Program Result Analysis Workshop

Date: 15th January 2024

Duration: 1 Day

Facilitators: Siddharth Bhattar , Surajit Paul

Coorinator: Abhilash Panda(Fab Lab coordinator), Sarbeswar Rout(Fab Lab incharge) & Aisurya Mishra(Student coordinator)

Session Highlights :

Based on students ideas three ideas are selected as follows-

Idea-01

GuardianSphere: Smart Helmets for Industrial Prowess

Objective:

Develop a smart helmet using Arduino-based technology to enhance the safety of industrial workers by monitoring environmental conditions and providing real-time alerts during emergency situations.

Benefits:

- Enhanced worker safety through real-time environmental monitoring.
- Rapid response to emergency situations with the push of an emergency button.
- Improved safety protocols and decision-making based on historical data analysis.
- Increased awareness of pollution levels, enabling preventive measures for worker health.

Conclusion:

The Smart Helmet for Industrial Worker Safety and Environmental Monitoring aims to provide a comprehensive solution for ensuring the well-being of workers in industrial environments. This innovative project combines environmental monitoring, emergency alert systems, and data analysis to create a robust safety framework.

Idea-02

SmartSoil: Precision Agriculture for Optimal Plant Growth

Objective:

Develop a cutting-edge soil evaluation and adjustment system that utilizes advanced sensors and technology to enhance agricultural practices. The project aims to provide farmers with real-time data on soil conditions, enabling them to make informed decisions for better crop yields and sustainable farming.

Benefits:

- Enhanced crop yields through optimized soil conditions.
- Real-time monitoring and control of soil parameters.
- Improved resource efficiency, minimizing water and nutrient wastage.
- Cost savings for farmers through targeted and data-driven adjustments.
- Sustainable farming practices leading to a healthier and more resilient landscape.

Conclusion:

The SmartSoil project is poised to revolutionize agriculture by providing farmers with a sophisticated, data-driven solution for soil evaluation and adjustment. By leveraging advanced sensors and technology, this project aims to empower farmers to make informed decisions that optimize crop growth, conserve resources, and foster sustainable agricultural practices.

Idea-03

EcoClean BeachBot: Mechanical Beach CleaningInnovation

Objective:

Develop an advanced mechanical machine, named Eco Clean Beach Bot, designed to efficiently clean beaches by removing debris, garbage, and other particles from the sand. The project aims to contribute to environmental conservation, ensuring pristine and safe beaches for communities and wildlife.

Benefits:

- Efficient and thorough cleaning of beaches, promoting environmental sustainability.
- Reduction of plastic pollution and other debris harmful to marine life.
- Integration of recycling technology for responsible waste management.
- Minimal environmental impact through solar-powered operation.
- Enhanced safety for beachgoers by removing potential hazards.

Conclusion:

The Eco Clean Beach Bot project represents a pioneering solution to the persistent issue of beach pollution. By combining innovative mechanical design, sensor technology, and eco-friendly energy sources, the Beach Bot aims to make significant strides in maintaining the cleanliness and environmental integrity of our beloved beaches.

From next session onwards workshops will be conducted on these ideas to make it reality and solve different issues of society.