

Report on 5-Days Faculty Development Program (FDP) on “Drone Technology”

Introduction

The 5-Days Faculty Development Program (FDP) on “Drone Technology” was organized by the Department of Electrical and Mechanical Engineering from 27th July to 31st July 2024 at Centre of Excellence, Sandip University, Madhubani. The program aimed to provide faculty members with in-depth knowledge and hands-on experience in drone technology, covering its applications, components, regulations, and advancements.

Objectives

- To understand the fundamentals of drone technology.
- To explore various applications of drones in different sectors.
- To gain practical experience in assembling and flying drones.
- To familiarize participants with current regulations and safety guidelines.
- To discuss future trends and advancements in drone technology.

Day 1: Introduction to Drone Technology

- **Session 1:** Overview of Drone Technology
 - Speaker: Prof. Manjeet Kumar. HOD, Electrical Engineering, SUM and Dr. Kunal Kishor Chandan, HOD, Electrical Engineering, SUM
 - Topics Covered: History, types of drones, basic components, and principles of flight.
- **Session 2:** Applications of Drones
 - Speaker: Dr. Ankit Mandal Drone Trainer
 - Topics Covered: Uses in agriculture, surveillance, delivery, mapping, and entertainment.
- **Hands-on Session:** Basic Drone Assembly
 - Participants were introduced to the basic components of a drone and given a demonstration on assembling a simple drone model.



Day 2: Drone Components and Systems

- **Session 1: Understanding Drone Components**
 - Speaker: Dr.AnkitMandal Drone Trainer
 - Topics Covered: Motors, propellers, flight controllers, GPS modules, and sensors.
- **Session 2: Power Systems and Battery Management**
 - Speaker: Mr.SidhantPattanaik, Director Skyy skill Academy Pvt. Ltd.
 - Topics Covered: Types of batteries, charging methods, power distribution, and safety precautions.
- **Hands-on Session: Component Integration**
 - Participants learned how to integrate various components into a functional drone system.

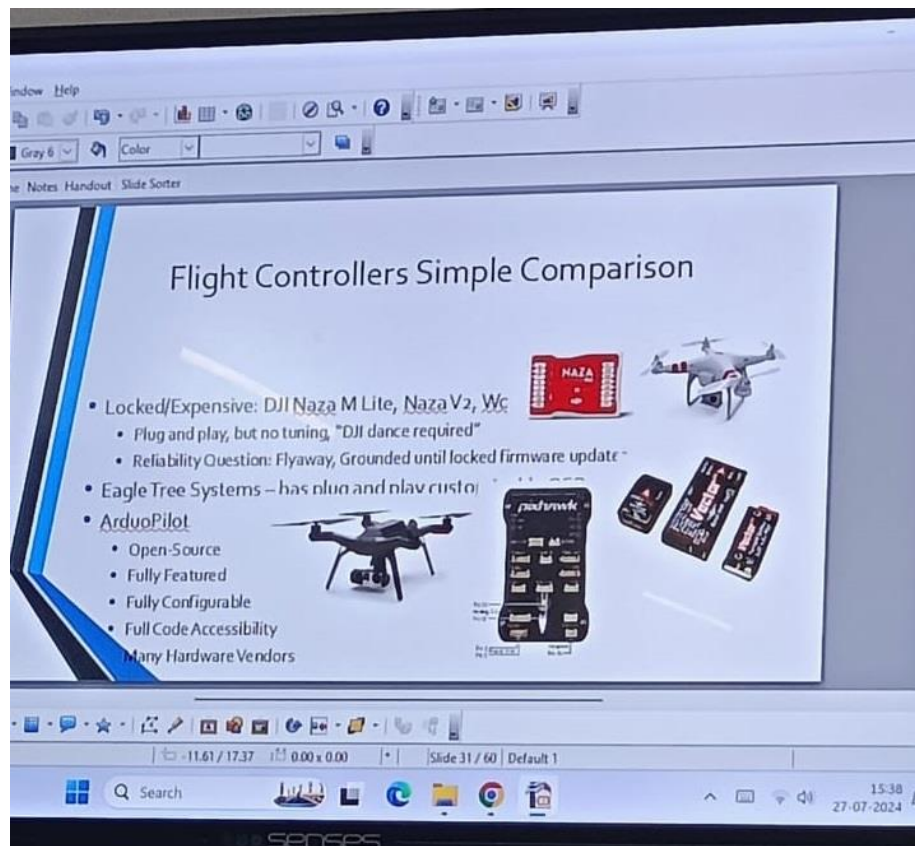


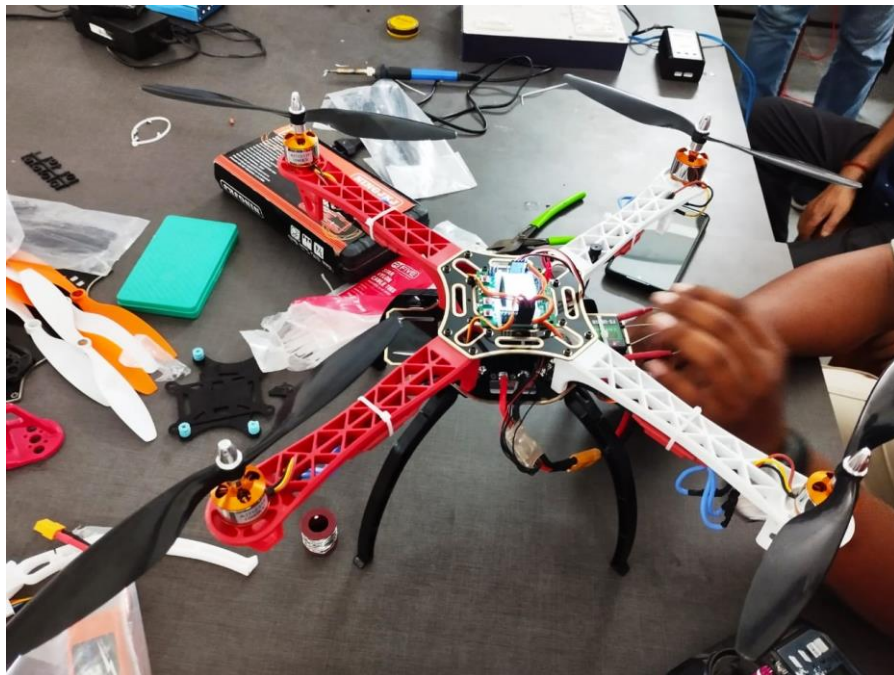
Day 3: Flight Dynamics and Control

- **Session 1: Principles of Flight Dynamics**
 - Speaker: Dr.AnkitMandal Drone Trainer
 - Topics Covered: Aerodynamics, stability, control surfaces, and flight maneuvers.
- **Session 2: Drone Navigation and Control Systems**
 - Speaker: Mr.SidhantPattanaik, Director Sky skill Academy Pvt. Ltd.
 - Topics Covered: Remote controllers, autopilot systems, and flight planning software.

- **Hands-on Session: Flight Simulation**

- Participants used flight simulators to practice controlling drones in a virtual environment.





Day 4: Regulations, Safety, and Maintenance

- **Session 1: Drone Regulations and Legal Considerations**
 - Speaker: Dr.AnkitMandal Drone Trainer
 - Topics Covered: National and international regulations, no-fly zones, and registration requirements.
- **Session 2: Safety Protocols and Maintenance**
 - Speaker: Mr.SidhantPattanaik, Director Skyy skill Academy Pvt. Ltd.
 - Topics Covered: Pre-flight checks, safety measures, troubleshooting, and regular maintenance routines.
- **Hands-on Session: Practical Flying Session**

- Participants were given the opportunity to fly drones under supervision, applying the safety protocols learned.



Day 5: Advanced Topics and Future Trends

- **Session 1: Advances in Drone Technology**
 - SpeakerDr.AnkitMandal Drone Trainer

- Topics Covered: AI and machine learning integration, swarm drones, and autonomous navigation.
- **Session 2: Future Trends and Innovations**
 - Speaker: Mr.SidhantPattanaik, Director Skyy skill Academy Pvt. Ltd.
 - Topics Covered: Emerging applications, technological advancements, and the future landscape of drone technology.
- **Hands-on Session: Advanced Flight Techniques**
 - Participants practiced advanced flight maneuvers and discussed project ideas for further exploration.











Conclusion and Feedback

- **Closing Ceremony:**
 - Certificates of participation were distributed.
 - Feedback was collected from participants to improve future FDPs.

Feedback Summary

Participants appreciated the comprehensive coverage of topics, hands-on sessions, and knowledgeable speakers. Suggestions for improvement included more advanced practical sessions and extended time for individual projects.

Name of Faculty participation in FDP

S. No.	Name of Teacher	Contact	Email
1	Dr. Rajesh Kumar	8409851016	rajesh.kumar@sandipuniversity.edu.in
2	Dr. Kunal Kishor Chandan	7076607322	kunal.chandan@sandipuniversity.edu.in
3	Dr. Gulshad Nawaz Ahmad	8252520917	gulshad.ahmad@sandipuniversity.edu.in
4	Mr. Keshav Kumar	8210986624	keshav.kumar@sandipuniversity.edu.in
5	Mr. Anjay Kumar	8986603116	anjay.kumar@sandipuniversity.edu.in
6	Dr. Vivekanand Kumar	7839361078	vivekanand.kumar@sandipuniversity.edu.in
7	Mr. Manjeet Kumar	8233681950	manjeetk57@gmail.com
8	Mrs. Pooja Jha	8789551471	jhashreyas2020@gmail.com
9	Dr. Rajesh Kumar Mahto	8210703360	rajesh.mahto@sandipuniversity.edu.in
10	Mr. Chandan Kumar Karn	9087114584	chandan.karn@sandipuniversity.edu.in
11	Mr. Rakesh Kumar	9608987413	rakesh.kumar@sandipuniversity.edu.in
12	Dr. Sanjeev Kumar Bhagat	9938874958	sanjeev.bhagat@sandipuniversity.edu.in
13	Dr. Mustafa Kamal	7532006849	md.kamal@sandipuniversity.edu.in
14	Dharmendra Kumar	9284956415	dharmendra.kumar@sandipuniversity.edu.in
15	Mr. Rabindra Kumar Mukhiya	7631903262	rbarya847235@gmail.com
16	Mr. VIVEK KUMAR	6209415807	vivek6209415807@gmail.com
17	Mr. PRASHANT KUMAR	7004139587	prashantkumarspj07@gmail.com
18	Mr. Ajay kumar	6204713841	ajayadav093@gmail.com
19	Mr. Rajiv Ranjan mishra	8667265331	rajiv.mishra@sandipuniversity.edu.in
20	Mr. SACHCHIDANAND JHA	8056237814	sachchidanand.jha@shrirampolytechnic.org
21	Mr. VISHWJEET KUMAR	8002724030	vishwjeet.kumar@shrirampolytechnic.org
22	Mr. ABHIJEET KUMAR	8804583426	abhijeet.kumar@shrirampolytechnic.org
23	Mr. Ankit Anand	8228003147	ankit.anand@shrirampolytechnic.org
24	Dr. Rahul Kumar	9852468133	rahulkenar@gmail.com
25	Dr. Amrendra Kumar	7488657269	amrendraroy2k8@gmail.com
26	Mr. Shashank Kumar	7003060037	shashank.kumar@shrirampolytechnic.org
27	Mr. Namrata Niru Jha	8910672003	namrata.jha@shrirampolytechnic.org
28	Dr. MD. Daniyal	7417246066	md.daniyal@sandipuniversity.edu.in
29	Dr. Ajay Kumar	8269638082	ajaykumar8mail@gmail.com
30	Dr. Pappu Kumar	9661313090	pappusobh@gmail.com
31	Mr.Keshav Kumar	9588084932	keshavjnu21@gmail.com
32	Mr.Niranjan Kumar	8873025346	niranjan.kumar@sandipuniversity.edu.in
33	Mr. Pintu Kumar Yadav	9576413394	pin2kryadav@gmail.com
34	Mr.Amresh Anand	9990291602	amresh.anand@sandipuniversity.edu.in
35	Dr. Abhishek Thakur	9927132812	abhishek.thakur@sandipuniversity.edu.in
37	Mr. Suraj Jha	8757404883	suraj.jha@sandipuniversity.edu.in
38	Mr. Rupesh Jha	8877797872	manjeetk57@gmail.com
39	Dr. B. N. Tripathi	9958143373	hod.ee@sandipuniversity.edu.in
40	Dr. Jyotindra Pathak	9431066615	jyotindra.pathak@sandipuniversity.edu.in
41	Mr. Shivendra Singh Tomar	9572187702	shivendrashekhar366@gmail.com
42	Dr. Nausherwan Raunak	9711414305	nausherwan22dec@gmail.com
43	Dr. Shambhu Kumar Singh	9096515229	shambhu.singh@sandipuniversity.edu.in
44	Prof. Aishwarya Shekhar	9891928148	aishwarya.shekhar@sandipuniversity.edu.in
45	Prof.Mandan Mishra	9523476007	mandan.mishra@sandipuniversity.edu.in
46	Dr. Parmanad Prabhat	6305661614	parmanand.prabhat@sandipuniversity.edu.in
47	Prof. Ritu Raj Jha	8709244396	ritu.jha@sandipuniversity.edu.in

48	Prof. SriRam yadav	8827050139	sriram.yadav1@sandipuniversity.edu.in
49	Prof. Rajiv Ranjan Mishra	8667265331	rajiv.mishra@sandipuniversity.edu.in
50	Prof. Ajay Kumar	6204713841	ajay.kumarcse@sandipuniversity.edu.in
51	Prof. Rohit Krishnamurthi	8527035268	rohit.murti@sandipuniversity.edu.in
52	Prof. Sonal Kumar	9608934772	sonal.kumar@sandipuniversity.edu.in
53	Prof. Ratneshwar kumar singh	8770366674	ratneshwar.singh@sandipuniversity.edu.in
54	Prof. Siddharth Kumar	8809796236	siddharth.kumar@sandipuniversity.edu.in
55	Prof. Rajesh Kumar	8939260766	rajesh.kumarcse@sandipuniversity.edu.in
56	Mr. Amit Pradhan	7050889765	amit.pradhan@sandipuniversity.edu.in
57	Mrs. Sonam Rani	8603305111	sonam.rani@sandipuniversity.edu.in
58	Mr. Anish Kumar	8789555910	anish120292@gmail.com
59	Mr. Ravi Raj	7544833512	raviraj8298168232@gmail.com