

## About the Institute

The erstwhile **Regional Engineering College (REC) Rourkela** was converted to a deemed university and renamed as **National Institute of Technology, Rourkela** on 26<sup>th</sup> June 2002. It was declared as **An Institution of National Importance** through the parliament act on 15<sup>th</sup> August 2007. The institute has made a rapid stride in earning a reputation as a place of higher learning in the field of engineering as well as technology during the last decade. NIT Rourkela provides quality education in a diverse and multi-cultural environment. The mission of the institute is to meet the needs of the industry and commerce by providing human resource with the required knowledge and skill and also by promoting, dissemination, developing and transferring technology. The institute strives hard to become an internationally acclaimed institution of higher learning that will serve as a source of knowledge and expertise for the society and be a preferred destination for undergraduate as well as post graduate students alongwith advanced research.

## About the Program

Drone technology has become increasingly prevalent in our daily lives. The upcoming program aims to offer both theoretical insights and practical hands-on training in the latest concepts of SwaYaan-Capacity building for Human Resource Development in Unmanned Aircraft Systems (Drone and related Technology). Being a center for aeromechanics theme, NIT Rourkela is hosting this program for the benefit of interested participants to enhance their knowledge in this area.

The program's primary objective is to equip participants with a comprehensive understanding of UAV capabilities, focusing on enhancing flight stability, enabling autonomous navigation, and optimizing aerodynamic performance. Through a series of structured lectures and practical sessions, attendees will develop proficiency in utilizing machine learning and artificial intelligence.

## About Aeromechanics

Aeromechanics is identified as one of the important themes in drone technology. Flying objects under different scenarios are studied with various formulations in aeromechanics. Starting from flow induced vibration studies to complex thrust/power calculations of unmanned aircraft systems are dealt in aeromechanics. The center for drone technologies is established at Department of Mechanical Engineering under the support of Ministry of Electronics and Information Technology, Delhi. Center has procured number related training tools and has trained many participants emanating various ideas. Arrangement of expert lectures, hands-on training sessions, introduction to the use of software tools, conference presentations, and encouraging interested students to develop innovative projects are the aims of the center.

## Contents of the Boot Camp

- Machine Learning (ML) and Artificial Intelligence (AI)
- Applications of Machine Intelligence in Drone Aeromechanics
- Additive manufacturing (3D printing)
- Swarm Intelligence
- Hands-on practice on drone assembly and flying
- Practical sessions with drone simulator software
- Laboratory session on use of Matlab/SIMULINK

## Target Participants

Diploma holder and pursuing students, graduate and pursuing candidates in BE/ B tech or Postgraduate in M Sc/ BCA/MCA/ ME/ M tech or PhD.

## Registration Fee

There is no registration fee. However, the certificate will be given to only those who attend a minimum 100% of the sessions. Attendance will be taken in all sessions. All interested participants should send their registration form through following link.

**Registration Link**  
<http://surl.li/hiozog>



## Coordinators

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## Training Location / Address:

Centre for UG & PG Studies, Rourkela  
Biju Patnaik University of Technology, Odisha  
Department of Mechanical Engineering



इलेक्ट्रॉनिकी एवं  
सूचना प्रौद्योगिकी मंत्रालय  
MINISTRY OF  
ELECTRONICS AND  
INFORMATION TECHNOLOGY

## Five-Day Bootcamp



**Machine intelligence in Drone  
Aeromechanics**

**(18<sup>th</sup>-22<sup>nd</sup> July 2024)**

**Organized by**



**Department of Mechanical Engineering**

**National Institute of Technology**

**Rourkela**

**In association with**



**Centre for UG & PG Studies, Rourkela  
Biju Patnaik University of Technology, Odisha  
Department of Mechanical Engineering**