

## About the Program

Drone technologies have wide spread usage in day-to-day life. Present program is intended to provide theoretical and practical perspectives with hands-on training in the updated concepts of drone and unmanned aerial systems. 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 aims at a progressive understanding of design, development, analysis, optimization and control of unmanned aerial systems with planned lecture/practical sessions.

## Contents of the Boot camp

Introduction to drones: Components of Drones & How to Fly Drones. Drone Vision, Machine Learning algorithms and basics: Classification of drone images. Fundamentals of UAS Communication. Aeromechanics of quadrotors, fixed-wing vehicles, hybrid vehicles, Use of LabVIEW and Simulink for drone analysis and optimization, Assembly and programming, Calibration principles before flying. Simple cascaded control schemes for drone flying.

## Registration

All interested participants can register by filling the google form:

<https://forms.gle/cRRazbHVuCwvQTNQ8>

For outstation participants, working lunch will be arranged and hostel accommodation can be provided on prior intimation. A nominal fee of Rs.500/-(+18%GST) is to be paid on 'Continuing education, NIT Rourkela' payable at Account: 10138951784 SBI NIT Rourkela, Campus. The details can be added in the google form.

Last date for submission:29.11.2023.

## Objectives of the event

Today with Industry 4.0, there is a great reduction of material cost and repetitive jobs in several automated industries. Safety and efficiency are the main concern in modern industrial era. Drone technology plays a crucial role to reduce the human intervention in harsh environments. The knowledge of payload capability, thrust calculations, the endurance time of flight with available batteries etc. are the prime requirements for flying of drones in critical operations. In the present bootcamp, it is planned to introduce many related concepts using simulation tools including LabVIEW, Matlab/Simulink and Ansys as well as hands-on basic assemblies of quadcopters and flying them with proper control strategies and flight control boards.

## About Aeromechanics Lab

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 already organized good number of boot camps emanating various ideas among the participants. 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.

## Contact details

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## 5-day Boot-camp on Computational approaches in Drone Technology



(01-05<sup>th</sup> December 2023)

Organized by the



National Institute of Technology Rourkela

In association with

Ministry of Electronics and Information  
Technology, Delhi



इलेक्ट्रॉनिक्स एवं  
सूचना प्रौद्योगिकी विभाग  
MINISTRY OF  
ELECTRONICS AND  
INFORMATION TECHNOLOGY