



**Centurion
UNIVERSITY**

Shaping Lives...
Empowering Communities...



IFAC Sponsored Three-day National Workshop on Wonders of Control Systems Engineering via Drone Flying and Electric Vehicles Date: 16-18 December 2024



It is a three-day program designed for the senior high school (pre-undergraduate) students to introduce them the basics of control systems and its wonderful applications. Gram Tarang Inclusive Development Services (GTIDS) is the social entrepreneurial outreach initiative of CUTM. It owns the East India's first and only DGCA Certified Remote Pilot Training Organization (RPTO). Through interactive sessions and hands-on activities, participants will gain an understanding on the theory and practical applications of control engineering, taking drone and electric vehicle operations as a platform to learn.

About Workshop:

The workshop "Wonders of Control Engineering via Drone Flying and Electric Vehicles" is to be conducted at the Centurion University of Technology and Management (CUTM) at Bhubaneswar in collaboration with GTIDS, IISc Bangalore and IIIT Bangalore.

About IFAC: (<https://www.ifac-control.org/>)

The International Federation of Automatic Control was founded in September 1957. IFAC multinational federation is concerned with automatic control and its representation in the fields of engineering, science and the impact of control technology on society. Join us in challenging the new era in electronic communication, publication and exchange of ideas.

About CUTM:

Centurion University is a leader in "Skill Integrated Higher Education" has recognition as Grade A+ University by NAAC. This university is duly recognized as a pioneer in 'Skill Integrated Higher Education'. Centurion University has both built and participated in building eco-systems that include and integrate the community around its campuses and beyond, industry, entrepreneurs and other education institutions. Centurion aims to be a premier human resource development hub, offering industry-relevant education, skill development, entrepreneurship, and technology. Its education and training delivery approach is:

- Skill Integrated and Employability Linked Teaching/Learning Process
- Focuses/Leverages Industry and Community Partnerships
- Create/co-creates Enterprises

About ACDOS: (<https://www.acdos.org/>)

Automatic Control & Dynamic Optimization Society (ACDOS) was established in the year 2011 with a noble objective to promote automatic control and dynamic optimization discipline in academia and industry across India. The society aims to host international conferences and technical workshops regularly in order to promote close interaction between industry and academia. The society also participates in curriculum development for graduate and under-graduate studies in addition to facilitating productive research in this field. The society volunteers to honour eminent persons who excelled in this field in industry and academic circles. ACDOS is also a proud National Member Organization (NMO) of the International Federation of Automatic Control (IFAC).

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Organizers:

Prof. Sudhansu Kumar Samal, **Asso. Professor, EEE**

Prof. Ramesh Chandra Mohanty, **Professor, Dept. of Mechanical**

Prof. Sujata Chakravarty, **Professor, Dept. of CSE**



**IFAC Sponsored
Three-day Workshop on
Wonders of Control Systems Engineering via Drone Flying and Electric
Vehicles**

Venue: Auditorium, CUTM Bhubaneswar Campus.

Technical Program

Date: 16-18 December 2024

**Mode of Workshop: Physical
Program Schedule**

Day-1 (Monday)

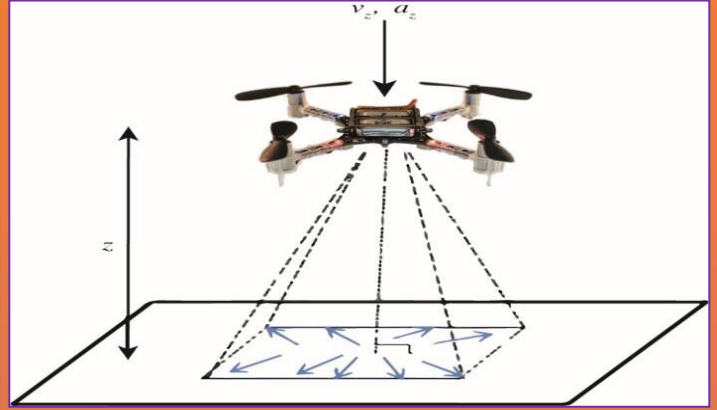
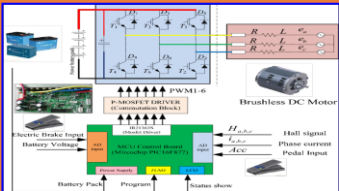
09:30 AM - 10:00 AM	Inauguration	
10:00 AM - 11:30 AM	Motivation for Control Systems: Forcing bad systems to behave good	Speaker: Prof. Radhakant Padhi, IISc Bangalore
11:30 AM - 12:00 PM	Tea Break	
12:00 PM - 01:00 PM	Basics of Electric Vehicles	Speaker: Dr. Sudhansu Kumar samal, CUTM Odisha
01:00 PM - 02:00 PM	Lunch Break	
02:00 PM - 03:00 PM	Control Systems in E-Vehicles	Speaker: Dr. Dayaram Sonawane, COEP Tech University, Pune
03:00 PM – 03:30 PM	Understanding different components of a drone (hardware and software level)	Mr. P S V S Sai Kumar and Mr. Yokesh K, IISc Bangalore
03:30 PM - 04:30 PM	Hands-on Activities: Assembly and setup of drones (in groups)	Mr. P S V S Sai Kumar, Mr. Yokesh K and CUTM Drone Pilots and Simulation Team
04:30 PM - 05:00 PM	Tea Break	
05:00 PM - 06:00 PM	<ul style="list-style-type: none"> • Introduction to software in the loop (SITL) simulations • Demonstration of an example problem: Waypoint flying 	Mr. P S V S Sai Kumar and Mr. Yokesh K, IISc Bangalore

Day-2 (Tuesday)

09:30 AM - 11:00 AM	Control Systems for Autonomous Vehicles: Drones and Mobile Robots	Speaker: Dr. Sachit Rao, IIIT Bangalore
11:00 AM - 11:30 AM	E-Vehicle Assembly Requirements	Speaker: Dr. Sudhansu Kumar samal, CUTM Odisha
11:30 AM - 12:00 PM	Tea Break	
12:00 PM - 01:00 PM	Hands-on Activities: Drone Simulations	CUTM Drone Pilots and Simulation Team
01:00 PM - 02:00 PM	Lunch Break	
02:00 PM - 04:30 PM	Drone Flying Experience in separate groups:	
	<ul style="list-style-type: none"> • Manual flying of Drones by Experienced Drone Pilots • Autonomous Flying of Drones 	CUTM Drone Pilot and Simulation Team. Mr. P S V S Sai Kumar, Mr. Yokesh K
04:30 PM - 05:00 PM	Tea Break	
05:00 PM - 05:30 PM	Essentials of Drone Pilot Program	CUTM Drone Pilots and Simulation Team

Day-3 (Wednesday)

09:30 AM - 11:00 AM	E-Vehicle Assembly Experience	Speaker: Dr. Sudhansu Kumar Samal and Team, CUTM Odisha
11:00 AM - 11:30 AM	Tea Break	
11:30 PM - 12:00 PM	E-Vehicle Driving Experience	Speaker: Dr. Sudhansu Kumar Samal and Team, CUTM Odisha
12:00 PM – 01:00 PM	Valedictory Function	
01:00 PM - 02:00 PM	Lunch and Departure	



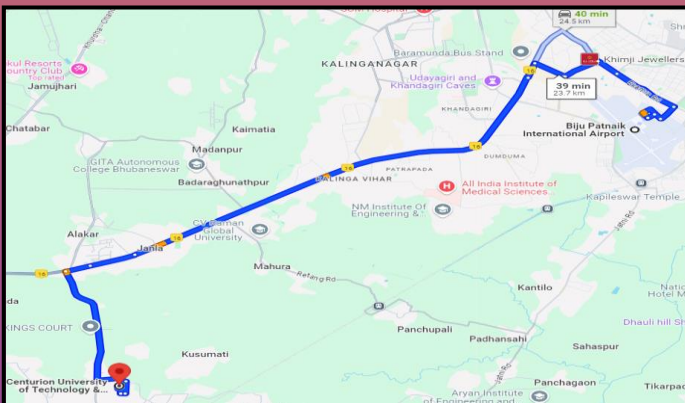
Approach to Venue

From BBSR airport ≈ 30 km

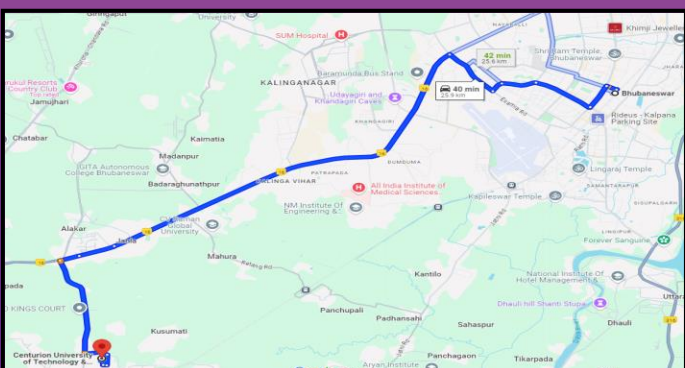
From Bhubaneswar Railway Station ≈ 32 km

From Khordha Road Railway Station ≈ 5 km

From Bhubaneswar Airport



From Bhubaneswar Railway Station



*Registration is Mandatory

Register Online on/before	08-12-2024
Registration Fees	1000 INR 50% Discount for CUTM Students
Payment Link	https://rzp.io//cutm-workshop
Registration Link	https://docs.google.com/forms/d/170WQxb-acXsRerBmznnYKMom6ps8NRecM1H70itJPc/edit

*Free Hostel and Food facilities for outside participants

*No Transport Allowances to Participants

*The CUTM will provide Local Transportation Support on a demand basis with prior information

*Registration Link/QR Code for Institutions/Colleges



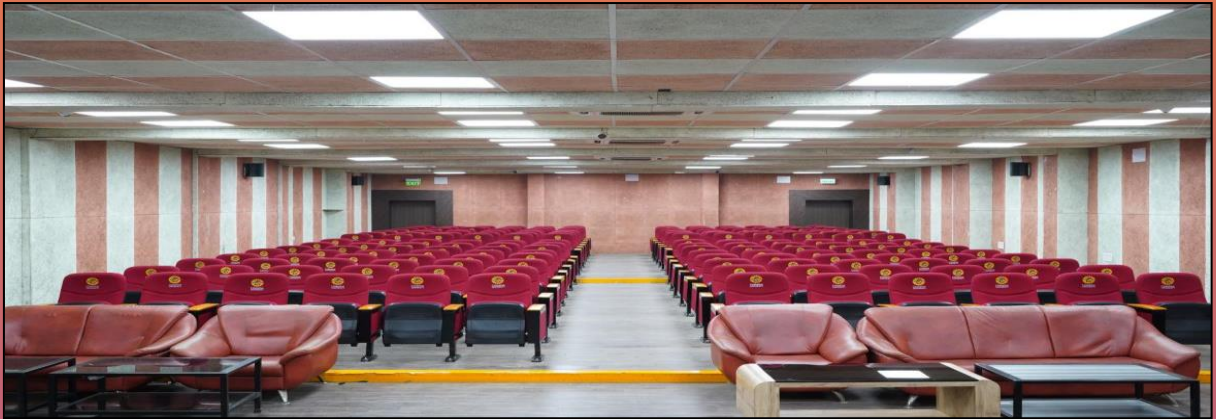
*All Registered Participants will get a Certificate

24*7 local transportation available from nearby Railway stations (Taxis and Buses)

Centurion University: Bhubaneswar campus



Auditorium



Drone flying ground



Simulation Lab

