



# भारत अंतरिक्ष शिक्षा अनुसंधान केंद्र

Bharat Space Education Research Centre

नई दिल्ली, भारत

New Delhi, India

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website: www.bserc.org

No. 05-15( ADT)/BSERC/IND/2025/057

Date: 11/08/2025



## "Celebration of National Space Day"

भारत अंतरिक्ष शिक्षा अनुसंधान केंद्र

Space Entrepreneurship

अंतरिक्ष उद्यमिता

23rd August, 2025

"Celebration of Advancement of Technology"  
by the Bharat Space Education Research Centre



www.bserc.org

<https://www.istem.gov.in/event>

## National Space Day Workshop: Space Entrepreneurship !

**Objectives: "Aryabhatta to Gaganyaan: Ancient Wisdom to Infinite Possibilities"**

Chandrayaan-3 mission accomplished safe and soft-landing of Vikram Lander on the lunar surface on August 23, 2023. With this, India became the fourth country to land on the moon and first to land near the southern polar region of the moon. The soft-landing was followed by successful deployment of Pragyan Rover. The landing site was named as 'Shiv Shakti' point (Statio Shiv Shakti) and August 23 was declared as the "National Space Day". India will celebrate its second National Space Day on August 23, 2025.

Register for National Space Day Celebration on 23rd August, 2025  
<https://www.istem.gov.in/event/forthcoming-even>

**India is celebrating its second National Space Day [NSpD-2025] on August 23, 2025 with the theme "Aryabhatta to Gaganyaan: Ancient Wisdom to Infinite Possibilities"**



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## INDIA CELEBRATES 2<sup>nd</sup> NATIONAL SPACE DAY

23<sup>rd</sup> August, 2025 Bharat Mandapam, New Delhi

Aryabhatta to Gaganyaan : Ancient Wisdom to Infinite Possibilities



### National Space Day Workshop: Space Entrepreneurship !

Space entrepreneurship is propelling humanity's future, harnessing innovative technologies like advanced drones to explore new frontiers. From lightweight designs to AI-driven autonomy, startups are revolutionizing space exploration, fostering sustainable solutions for a thriving Viksit Bharat 2047.

**Bridging the Timeless and the Limitless** The theme, "Aryabhatta to Gaganyaan: Ancient Wisdom to Infinite Possibilities", is a celebration of continuity of:

- Ancient knowledge systems inspiring modern innovation.
- India's spirit of inquiry, unbroken across millennia.
- Technological progress fuelled by cultural pride and national ambition.

**From the Vedic sky-watchers to 21st-century space scientists, our journey reflects how heritage and high-tech can come together to unlock infinite possibilities.**

Vision of Viksit Bharat Abhiyan @2047



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Linking Researchers and Resources

**भारत अंतरिक्ष शिक्षा अनुसंधान केंद्र**

*Advanced Drone Technology*

**उन्नत ड्रोन प्रौद्योगिकी**

**15<sup>th</sup>, 16<sup>th</sup> & 17<sup>th</sup> August, 2025**

"Celebration of Advancement of Technology"

3-Day Advanced Drone Workshop, August 15-17, 2025

विकसित भारत अभियान@2047



https://www.istem.gov.in/event

Respected Authority,

आदरणीय महोदय | Respected Sir,

**The Government of India, under the visionary leadership of Hon'ble PM Shri Narendra Modi,** has initiated groundbreaking reforms in the space sector. These initiatives are designed to enhance and promote space education, research, and development across the nation. A key highlight is the celebration of National Space Day on August 23, which underscores India's commitment to fostering innovation and scientific excellence in space exploration. In alignment with the Viksit Bharat Abhiyan 2047, the Bharat Space Education Research Centre is conducting an Advanced Drone (Air Taxi) workshop.

**Workshop Title: Advanced Drone Technology (Air Taxi) : 3 Days Session**

Advanced Drone Technology (Air Taxi): Advanced Drone Innovations and Practical Applications under Viksit Bharat Abhiyan@2047.

**Vision of Viksit Bharat Abhiyan @2047**





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## Advanced Drone Technology (उन्नत ड्रोन प्रौद्योगिकी)

**02> Workshop: Three-day session covering in-depth content- 15<sup>th</sup>, 16<sup>th</sup> & 17<sup>th</sup> August, 2025.**

Day	Session	Lecture Title	Topics Covered	Learning Outcome
1	1	Drone Technology Fundamentals & Aerodynamics Basics	a) UAV classifications (fixed-wing, multirotor, VTOL) b) Fundamental forces: lift, drag, thrust, weight c) Airfoil theory and pressure distribution	<ul style="list-style-type: none"><li>Identify major UAV types and their mission envelopes</li><li>Explain how airfoil geometry generates lift and influences performance</li></ul>
	2	Basic Flight Stability & PID Control Introduction	a) Angle of attack, stall behavior, stability axes b) PID control fundamentals: P, I, D terms and tuning basics	<ul style="list-style-type: none"><li>Recognize stall and recovery techniques</li><li>Configure and tune a basic PID loop to stabilize hover</li></ul>
2	1	UAV Structures, Propulsion & Power Systems	a) Drone frame materials and stress considerations b) Electric motors, propeller selection, ESCs c) Battery technologies and power budgeting	<ul style="list-style-type: none"><li>Assess structural trade-offs for weight vs. strength</li><li>Size propulsion and battery systems to meet flight-time requirements</li></ul>
	2	Sensor Suite & Inertial Navigation	a) IMU components: accelerometer, gyroscope, magnetometer b) GNSS integration and error sources c) Complementary vs. Kalman filtering basics	<ul style="list-style-type: none"><li>Integrate sensor data to produce stable attitude estimates</li><li>Calibrate IMU/GNSS to achieve reliable position and heading</li></ul>

Vision of Viksit Bharat Abhiyan @2047





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3	1	Autonomous Mission Planning & Advanced Control	a) Path-planning algorithms (A*, RRT) b) LQR controller design for trajectory tracking c) Real-time obstacle avoidance strategies	<ul style="list-style-type: none"><li>• Generate and optimize waypoint sequences for dynamic environments</li><li>• Implement an LQR controller to follow complex flight paths</li></ul>
	2	Real-World Applications, Certification & Case Studies	a) Industry use-cases: AAM, logistics, agriculture, healthcare, disaster relief b) DGCA/EASA certification process and airspace integration standards c) System-level testing and validation protocols	<ul style="list-style-type: none"><li>• Map technical requirements to specific industry applications</li><li>• Outline roadmap for regulatory approval and field deployment</li></ul>

**Workshop:** 3-day training program on August 15, 16 & 17, 2025 (Friday–Sunday), focusing on advanced Drone Technology (Air Taxi).

Three-Day (03)  
<https://forms.gle/weWogvIVzqJqgQKp7>

Workshop

Registration:

Date: August 15, 16 & 17, 2025 (Friday–Sunday), 2025 at 2 PM.

सादर

राहुल सिंह,  
संबद्धता विनियामक प्राधिकारी  
भारत अंतरिक्ष शिक्षा अनुसंधान केंद्र, नई दिल्ली।  
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निदेशक / Director

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