NEW HORIZON COLLEGE OF ENGINEERING

DEPARTMENT OF MECHANICAL ENGINEERING

FACULTY DEVELOPMENT & CERTIFICATION REPORT

Professional Drone Training Program & RPAS Certification

Organized in association with NeoSky India Limited, Bangalore | July 13 – July 22 (9 Days)

1. Executive Summary

The Department of Mechanical Engineering at New Horizon College of Engineering (NHCE), Bangalore, continuously strives to align its academic and technical expertise with cutting-edge industry technologies. To foster domain knowledge in unmanned aerial systems, an intensive 9-day professional training program on **Drone Technology, Assembly, Calibration, and Remotely Piloted Aircraft System (RPAS) Certification** was conducted from **13th July to 22nd July** (spanning 9 active training days). The training was executed in collaboration with **NeoSky India Limited, Bangalore**, a leading organization in drone technology solutions.

Four distinguished faculty members from the Department of Mechanical Engineering successfully completed the rigorous training, gaining end-to-end practical and theoretical exposure ranging from regulatory frameworks and flight dynamics to hands-on assembly, hardware calibration, software simulation, and real-world field piloting.

Program Name:	Professional Drone Training & RPAS Certification
Organizing Dept:	Department of Mechanical Engineering, NHCE Bangalore
Industry Partner:	NeoSky India Limited, Bangalore
Duration & Dates:	9 Days | 13th July to 22nd July

2. Deputed Faculty Members

The following faculty members from the Department of Mechanical Engineering were deputed to participate in and complete the comprehensive 9-day RPAS certification and training program:

Sl. No.	Faculty Name	Designation / Department
1	**Dr. Srinath M K**	Associate Professor, Dept. of Mechanical Engineering
2	**Mr. Raghu Tilak Reddy M**	Senior Assistant Professor, Dept. of Mechanical Engineering
3	**Mr. Hanamant Yaragudri**	Senior Assistant Professor, Dept. of Mechanical Engineering
4	**Dr. Ananth Pai**	Assistant Professor, Dept. of Mechanical Engineering
5	**Mr. Rajesh A**	Senior Assistant Professor, Dept. of Mechanical Engineering

3. Core Inclusions & Training Objectives

The primary focus of the training program was to equip faculty with both institutional regulatory knowledge and high-level practical skills required in the rapidly growing unmanned aviation sector. The major inclusions of the training program were:

- **RPAS Certification:** Official Remotely Piloted Aircraft System (RPAS) training complying with DGCA frameworks, covering flight regulations, safety protocols, and operational compliance.
- **Assembly and Hardware Integration:** Hands-on mechanical and electrical assembly of multirotor drone platforms, including structural frame integration, power distribution boards, motors, ESCs, flight controllers, and payload attachment.
- **Calibration & Avionics Setup:** Systematic sensor calibration including IMU, compass, accelerometer, transmitter binding, telemetry linking, and flight controller tuning.
- **Flight Simulation & Field Piloting:** Virtual simulator flight practice followed by live field piloting at designated testing zones under expert instruction.

4. Detailed Training Modules & Day-wise Schedule

The 9-day intensive curriculum was structured progressively to ensure a seamless transition from theoretical fundamentals to software simulations, hardware assembly, and actual outdoor flying operations.

Days 1 & 2: Theoretical Foundations, Regulations & Avionics

The initial two days laid a solid theoretical foundation in Unmanned Aerial Vehicles (UAVs) and Remote Pilot Aircraft Systems (RPAS). Sessions were conducted by senior domain engineers at NeoSky India Limited. The key topics covered included:

- **Types of Drones:** Classification based on weight (Micro, Small, Medium, Heavy), rotor configuration (Multirotor, Fixed-Wing, Hybrid VTOL), and operational applications in agriculture, surveying, and defense.
- **Drone Rules & DGCA Framework:** Detailed briefing on Drone Rules 2021, airspace compliance, pilot licensing criteria, Digital Sky platform operations, and legal requirements for operating RPAS in India.
- **Telemetry & Communication Systems:** Understanding radio frequency (RF) bands, telemetry link setup, transmitter-receiver pairing, fail-safe modes, and Ground Control Station (GCS) data link integration.
- **Drone Flying Zones in India:** Airspace categorization into green, yellow, and red zones, permission artifacts, and automated flight restriction compliance.
- **Weather Conditions & Aerodynamics:** Impact of wind velocity, temperature, barometric pressure, turbulence, density altitude, and visibility on drone flight stability and safety.
- **Parts of Drones & Functional Dynamics:** Detailed breakdown of drone architecture—Frames, Brushless DC (BLDC) Motors, Electronic Speed Controllers (ESCs), Flight Controller Unit (FCU), Propellers, Power Distribution Boards (PDB), and LiPo Batteries.


RattanIndia
NEOSKY
GPS Map Camera
Bengaluru, Karnataka, India
622, 4th C Main Rd, Near Bhuvanagiri Park, B Channasandra, Ombr Layout, Bennigana Halli, Bengaluru, Karnataka 560043, India
Lat 13.011477° Long 77.659271°
Monday, 13/07/2026 09:49 AM GMT +05:30
Google


NEOSKY
Explore.
Evolve.
GPS Map Camera
Bengaluru, Karnataka, India
622, 4th C Main Rd, Near Bhuvanagiri Park, B Channasandra, Ombr Layout, Bennigana Halli, Bengaluru, Karnataka 560043, India
Lat 13.011404° Long 77.659319°
Monday, 13/07/2026 05:14 PM GMT +05:30
Google



Day 3: Flight Simulation & Virtual Controls

Transitioning from theory to practical controls, Day 3 was dedicated to software-based drone flight simulations. Using professional RPAS flight simulators paired with transmitter controllers, the faculty acquired muscle memory for flight maneuvers. The simulator training focused on basic hover, pitch, roll, yaw controls, orientation awareness, emergency fail-safe triggers, and wind compensation drills in a risk-free virtual environment.



Days 4 & 5: Field Flying Training at Field Location (Narasapura)

On Days 4 and 5, the training moved off-site to the designated outdoor flying field of NeoSky India Limited located at **Narasapura Village, Kolar Taluk, Kolar District**. Under the direct supervision and guidance of certified NeoSky flight instructors, the faculty members engaged in hands-on flight operations.

- **Pre-flight Checks & Safety Protocols:** Inspecting prop alignment, battery voltage levels, GPS satellite lock, and establishing emergency landing zones.
- **Manual & Assisted Flying:** Executing takeoff, hovering stability, square/circular flight paths, altitude hold, and smooth landing procedures.
- **Emergency Procedures:** Practicing Return-to-Home (RTH) activation, loss-of-signal simulation, and manual override handling.


GPS Map Camera
Koothandahalli, Karnataka, India
32h4+9q, Koothandahalli, Karnataka 563130, India
Lat 13.078095° Long 78.006789°
Thursday, 16/07/2026 01:34 PM GMT +05:30
Google


GPS Map Camera
Koothandahalli, Karnataka, India
32h4+9q, Koothandahalli, Karnataka 563130, India
Lat 13.078157° Long 78.006762°
Friday, 17/07/2026 12:17 PM GMT +05:30
Google


GPS Map Camera
Koothandahalli, Karnataka, India
32h4+9q, Koothandahalli, Karnataka 563130, India
Lat 13.078136° Long 78.006731°
Friday, 17/07/2026 04:06 PM GMT +05:30
Google

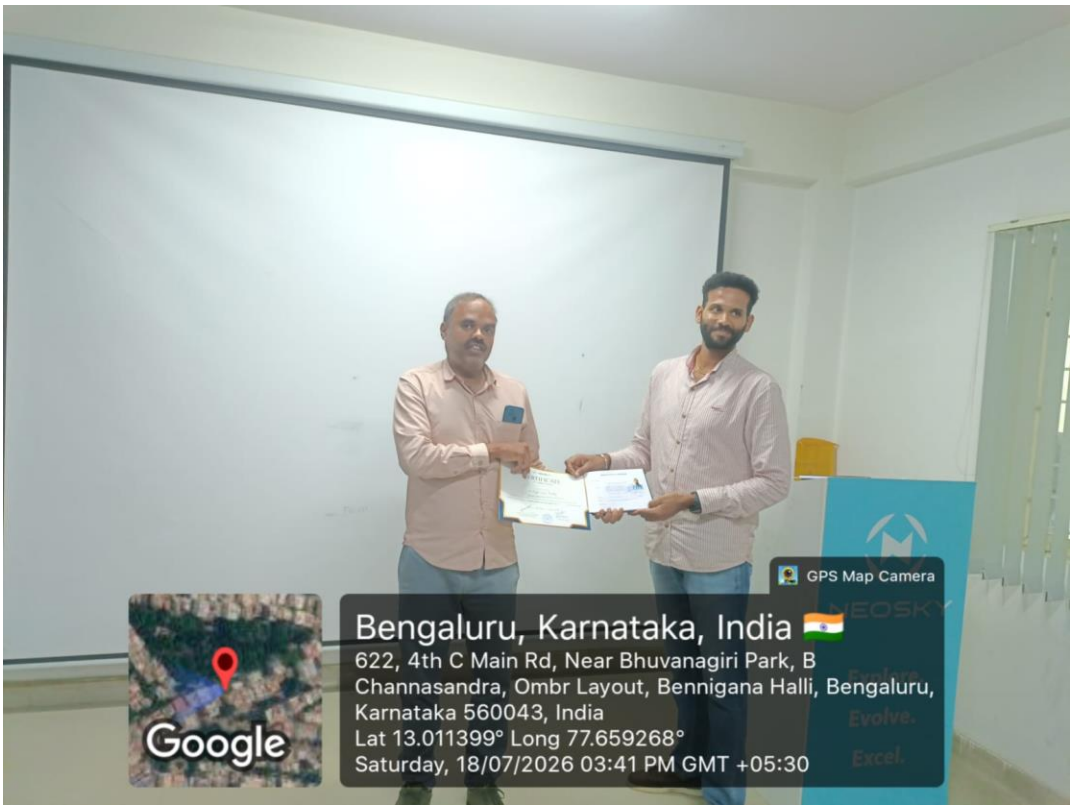

GPS Map Camera
Koothandahalli, Karnataka, India
32h4+9q, Koothandahalli, Karnataka 563130, India
Lat 13.078128° Long 78.006805°
Friday, 17/07/2026 04:31 PM GMT +05:30
Google



Days 6 & 7: Drone Hardware Assembly & Integration

Days 6 and 7 centered on hardware mechanics and electrical engineering. Faculty members participated in the step-by-step complete assembly of drone kits, which included:

- **Frame Architecture Setup:** Assembling quadcopter carbon-fiber and composite arms, landing gear, and central base plates.
- **Power & Avionics Soldering:** Soldering ESC connections to the Power Distribution Board (PDB) and integrating battery connector terminals.
- **Motor & Controller Wiring:** Mounting BLDC motors, ensuring correct rotational directions (CW/CCW), and interfacing ESC signal wires with the Flight Controller.
- **Peripheral & Telemetry Mounting:** Installing GPS modules, radio receivers, telemetry transmitters, and safety LEDs on the frame chassis.


GPS Map Camera
Bengaluru, Karnataka, India
622, 4th C Main Rd, Near Bhuvanagiri Park, B
Channasandra, Ombr Layout, Bennigana Halli, Bengaluru,
Karnataka 560043, India
Lat 13.011399° Long 77.659268°
Saturday, 18/07/2026 03:41 PM GMT +05:30
Google


RattanIndia
NEOSKY
GPS Map Camera
Bengaluru, Karnataka, India
622, 4th C Main Rd, Near Bhuvanagiri Park, B
Channasandra, Ombr Layout, Bennigana Halli, Bengaluru,
Karnataka 560043, India
Lat 13.011392° Long 77.659277°
Saturday, 18/07/2026 03:34 PM GMT +05:30
Google



Day 8 and 9: System Calibration, Maiden Flight & Valedictory

Day 8 and 9 encompassed critical sensor calibration and verification testing of the newly assembled custom drones, concluding with the valedictory session:

- **Hardware & Sensor Calibration:** Performing electronic calibration of Accelerometer, Gyroscope, Magnetometer (Compass), and Radio Controller stick ranges using Ground Control Station software.
- **ESC & Propeller Balancing:** Performing ESC throttle range calibration, propeller balancing, and motor direction verification.
- **Maiden Flight Verification:** Executing successful maiden flights of the faculty-assembled drones, confirming airworthiness, stability, and flight responsiveness.
- **Certification Ceremony:** Distribution of official RPAS Training Certificates to the faculty members by the executive management and instructors of NeoSky India Limited.


GPS Map Camera
Bengaluru, Karnataka, India
658, 4th C Main Rd, Near Bhuvanagiri Park, B Channasandra, Ombr Layout, Bennigana Halli, Bengaluru, Karnataka 560043, India
Lat 13.011419° Long 77.659212°
Tuesday, 21/07/2026 10:58 AM GMT +05:30
Google


TAS
GPS Map Camera
Karinaikanahalli, Karnataka, India
102-a, Karinaikanahalli, Karnataka 563133, India
Lat 13.105305° Long 77.990014°
Wednesday, 22/07/2026 12:39 PM GMT +05:30
Google

Summary Timeline of Training Activities

Timeline	Focus Area / Modules	Venue & Execution
Days 1 & 2	Drone Types, DGCA Rules, Telemetry, Flying Zones, Weather, Drone Architecture & Components	NeoSky Facility, Bangalore
Day 3	Flight Simulation Training, Controls & Maneuvers Practice	NeoSky Simulation Lab
Days 4 & 5	Live Outdoor Drone Flying, Pilot Controls & Emergency Procedures	Flying Field, Narasapura, Kolar
Days 6 & 7	Complete Hardware Assembly, Soldering, Power & FC Interfacing	NeoSky Workshop, Bangalore
Day 8 & 9	Sensor Calibration, Software Configuration, Flight Verification & Certificate Distribution	NeoSky Facility, Bangalore

5. Key Outcomes & Value Addition to Department

The successful completion of the 9-day drone training program provides substantial benefits to the Department of Mechanical Engineering at NHCE:

- **Enhanced Pedagogical Expertise:** Faculty members can now integrate UAV technology, drone kinematics, and dynamic control concepts into existing mechanical engineering and mechatronics courses.
- **Establishment of Drone Lab Capabilities:** Hands-on assembly and calibration experience equips the faculty to guide students in setting up a dedicated UAV research/project lab within the institute.
- **R&D and Consultancy Opportunities:** Empowers the department to undertake industry-sponsored consultancy, drone design optimization projects, and interdisciplinary research.
- **Student Mentorship for Competitions:** Faculty can effectively mentor student teams participating in national and international UAV design competitions, hackathons, and research publications.

6. Conclusion & Acknowledgements

The 9-day Drone Training and RPAS Certification program conducted by NeoSky India Limited was immensely successful. The training successfully bridged theoretical knowledge with advanced technical skills in assembly, sensor calibration, and piloting.

The participating faculty express their sincere gratitude to the management of **New Horizon College of Engineering** and the **Department of Mechanical Engineering** for providing this valuable professional development opportunity. Special thanks are also extended to the expert instructors and technical team

at **NeoSky India Limited** for their guidance, domain expertise, and seamless execution of the training program.

RPAS CERTIFICATES

Remote Pilot Certificate

Certificate No. **RP202600011418** | Status: **Active**
Generated On: **05 August 2026 14:52:42**
Valid Upto: **17 July 2036**

Scan the code to verify the current status of certificate



Name of the pilot:
HANAMANT YARAGUDRI

Gender:
Male

Date of birth:
01-Jul-1986

Address:
NEAR VITTALA TEMPLE, POST HULKUND TALUK RAMADURG, , Karnataka, India, 591114

Endorsement Details

Category of UAS	Sub-Category of UAS	Class of UAS	Training Category	Date of Endorsement	RPTO Name	RPTO Authorization No.	Instructor Rated
Rotorcraft	RPAS	Small	VLOS	05/08/2026	NEOSKY INDIA LIMITED	17/2023	-

Declaration: Pilot has successfully completed the Remote Pilot Training Classes (Both theory and practical) for the endorsed category. The pilot has successfully passed both theory and practical exam, conducted by us.

The remote pilot certificate is issued under the applicable provision of Drone (Amendment) Rules 2022 amended from time to time. This is a digital generated certificate issued through the eGCA platform.

Remote Pilot Certificate

Certificate No. **RP202600011426** | Status: **Active**
Generated On: **05 August 2026 15:33:40**
Valid Upto: **17 July 2036**

Scan the code to verify the current status of certificate



Name of the pilot:
M RAGHU TILAK REDDY

Gender:
Male

Date of birth:
13-Aug-1981

Address:
602, MAHAVEER KINGS PLACE, BRINDAVAN LAYOUT, KADUGODI, BENGALURU, , Karnataka, India, 560067

Endorsement Details

Category of UAS	Sub-Category of UAS	Class of UAS	Training Category	Date of Endorsement	RPTO Name	RPTO Authorization No.	Instructor Rated
Rotorcraft	RPAS	Small	VLOS	05/08/2026	NEOSKY INDIA LIMITED	17/2023	-

Declaration: Pilot has successfully completed the Remote Pilot Training Classes (Both theory and practical) for the endorsed category. The pilot has successfully passed both theory and practical exam, conducted by us.

The remote pilot certificate is issued under the applicable provision of Drone (Amendment) Rules 2022 amended from time to time. This is a digital generated certificate issued through the eGCA platform.

Remote Pilot Certificate

Certificate No. **RP202600011434** | Status: **Active**
Generated On: **05 August 2026 16:10:41**
Valid Upto: **17 July 2036**

Scan the code to verify the current status of certificate



Name of the pilot:
SRINATH M M

Gender:
Male

Date of birth:
05-May-1986

Address:
No 67, 2nd D main,, 8th Block, Koramangala,, Near Lawrance School, Karnataka, India, 560095

Endorsement Details

Category of UAS	Sub-Category of UAS	Class of UAS	Training Category	Date of Endorsement	RPTO Name	RPTO Authorization No.	Instructor Rated
Rotorcraft	RPAS	Small	VLOS	05/08/2026	NEOSKY INDIA LIMITED	17/2023	-

Declaration: Pilot has successfully completed the Remote Pilot Training Classes (Both theory and practical) for the endorsed category. The pilot has successfully passed both theory and practical exam, conducted by us.

The remote pilot certificate is issued under the applicable provision of Drone (Amendment) Rules 2022 amended from time to time. This is a digital generated certificate issued through the eGCA platform.

Remote Pilot Certificate

Certificate No. **RP202600011417** | Status: **Active**
Generated On: **05 August 2026 14:48:35**
Valid Upto: **17 July 2036**

Scan the code to verify the current status of certificate



Name of the pilot:
MANGALORE ANANTH PAI

Gender:
Male

Date of birth:
19-Dec-1990

Address:
D-303 TERRACE GARDEN APARTMENT, 2ND MAIN ITTAMADU BSK 3RD STAGE, , Karnataka, India, 560085

Endorsement Details

Category of UAS	Sub-Category of UAS	Class of UAS	Training Category	Date of Endorsement	RPTO Name	RPTO Authorization No.	Instructor Rated
Rotorcraft	RPAS	Small	VLOS	05/08/2026	NEOSKY INDIA LIMITED	17/2023	-

Declaration: Pilot has successfully completed the Remote Pilot Training Classes (Both theory and practical) for the endorsed category. The pilot has successfully passed both theory and practical exam, conducted by us.

The remote pilot certificate is issued under the applicable provision of Drone (Amendment) Rules 2022 amended from time to time. This is a digital generated certificate issued through the eGCA platform.

Remote Pilot Certificate

Certificate No. **RP202600011420** | Status: **Active**
Generated On: **05 August 2026 14:58:30**
Valid Upto: **17 July 2036**

Scan the code to verify the current status of certificate



Name of the pilot:
RAJESH A

Gender:
Male

Date of birth:
13-Jan-1982

Address:
No .17 1st CROSS 2ND BLOCK DASAPPA LAYOUT RAMAMURTHY BANGAL, No. 93 ASHOK NAGAR B M ROAD OORGRUM POST KGF 563122, SURYA BAKERY ROAD, Karnataka, India, 560016

Endorsement Details

Category of UAS	Sub-Category of UAS	Class of UAS	Training Category	Date of Endorsement	RPTO Name	RPTO Authorization No.	Instructor Rated
Rotorcraft	RPAS	Small	VLOS	05/08/2026	NEOSKY INDIA LIMITED	17/2023	-

Declaration: Pilot has successfully completed the Remote Pilot Training Classes (Both theory and practical) for the endorsed category. The pilot has successfully passed both theory and practical exam, conducted by us.

The remote pilot certificate is issued under the applicable provision of Drone (Amendment) Rules 2022 amended from time to time. This is a digital generated certificate issued through the eGCA platform.