



**RAMAIAH
UNIVERSITY**
OF APPLIED SCIENCES



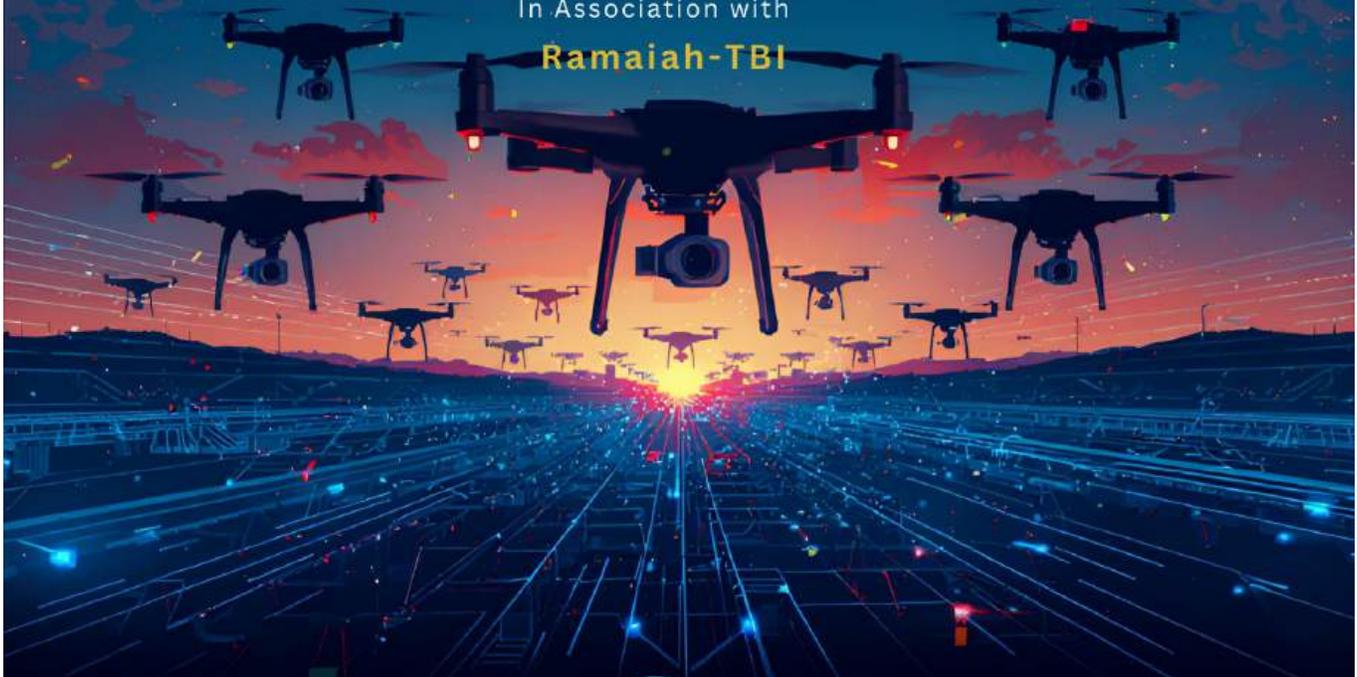
We cordially invite you to the

HANDS ON UAV SYSTEMS, MISSION PLANNING, AND AI-BASED SWARM DRONES

WORKSHOP

In Association with

Ramaiah-TBI



26th-28th
March 2026



9:30 AM – 4:30 PM



A206, RTC Peenya Campus, RUAS
MS Ramaiah University of Applied Sciences, Bangalore

Dr. Mallaradhya H M,
Program Head - Robotics

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Contact

Dr. Sarat Kumar Maharana
Professor and Dean -
Faculty of Engineering Technology

Time	Programme
10.00 - 10.10 AM	Invocation
10.10 - 10.15 AM	Lamp lighting
10.15 - 10.20 AM	Welcome Speech by Dr. B S Dayananda, Associate Dean, FET, RUAS
10:20 – 10.30 AM	About the workshop by Dr. Sarat Kumar Maharana, Dean, FET, RUAS
10:30 – 10.40 AM	Presidential Address by Prof. Kuldeep Kumar Raina, Hon'ble Vice Chancellor, RUAS
10:40 – 10.45 AM	Vote of Thanks by Dr. Mallaradhy H M, Assistant Professor - MME, FET
10:45- 11.00 AM	Tea Break
11.00 - 1.30 PM	Workshop on “Hands on uav systems,mission planning, and AI-based swarm drones”
2.00 – 4.30 PM	Hands on Session

SPOC
Dr. Mallaradhy H M
Program Head - Robotics
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Certificates will be issued for the workshop.



Day 1 – UAV Hardware and Mission Planning

Session	Content
Session 1: Introduction to UAV Systems	<ul style="list-style-type: none"> • History and applications of drones • UAV types: Multirotor, Fixed-wing, Hybrid • Drone Components: Flight Controllers, ESCs, Motors & Propellers, GPS Modules, Telemetry Systems, Batteries
Session 2: Hands on Drone Assembly	<ul style="list-style-type: none"> • Frame assembly • Motor and ESC installation • Flight controller setup • GPS & telemetry integration • Wiring and power distribution • Preflight checks
Session 3: Mission Planner & Autonomous Flight	<ul style="list-style-type: none"> • Firmware installation • Sensor calibration • Flight modes • Waypoint navigation • Autonomous missions • Geo fencing and failsafe systems

Day 2 – AI, Swarm Drones and Flight Operations

Session	Content
Session 4: AI in Drone Systems	<ul style="list-style-type: none"> • AI applications in drones • Computer vision for UAVs • Object detection and tracking • Autonomous decision making • Edge AI hardware for drones
Session 5: Swarm Drone Basics	<ul style="list-style-type: none"> • Principles of swarm robotics • Communication between UAVs • Distributed intelligence
Session 6: Drone Flying & Field Demonstration	<ul style="list-style-type: none"> • Preflight safety briefing • Manual drone control • Stabilized flight modes • Autonomous mission execution

At the end of the workshop participants will:	<ul style="list-style-type: none"> • Understand drone hardware architecture • Gain hands-on drone assembly experience • Learn Mission Planner for autonomous UAV missions • Understand AI applications in drones • Learn swarm drone fundamentals • Participate in practical drone flying
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