

KARNATAK LAW SOCIETY'S
GOGTE INSTITUTE OF TECHNOLOGY

UDYAMBAG, BELAGAVI-590008

(An Autonomous Institution under Visvesvaraya Technological University, Belagavi)

(APPROVED BY AICTE, NEW DELHI)



**UAS Design, Simulation & Flight Training
Lab**

FOR

Fifth Semester Department of Aeronautical Engineering Students

DEPARTMENT OF
AERONAUTICAL ENGINEERING
KLS GOGTE INSTITUTE OF TECHNOLOGY



UAS Design, Simulation & Flight Training Lab
FOR
Students of Fifth Semester

Overview

UAV design, simulation, and flight training cover the fundamentals of creating unmanned aerial vehicles, including airframe design, propulsion systems, and control algorithms. Simulations test flight dynamics, stability, and performance, while flight training involves hands-on piloting, navigation, and safety skills. In the aeronautical field, these skills are essential for developing advanced aerial systems and optimizing aircraft performance. UAV technology fosters innovation in aerospace, defense, and agriculture, offering job opportunities in aircraft design, flight dynamics, avionics, and control systems, meeting the demand for professionals skilled in robotics, AI integration, and aerial data analysis.

Theory: 12 Hours

Demo: 6 Hours

Lab sessions: 18 Hours

Total duration: 36 Hours

Module 1: Flight Training and Operations

- Fundamentals of flight planning and navigation
- Manual piloting techniques and basics of autonomous flight
- Safety procedures and emergency protocols

Module 2: UAV Regulations and Safety

- Overview of national and international UAV regulations (e.g., FAA, DGCA)
- Airspace management and UAV operation limits
- Risk assessment and safety protocols

Module 3: UAV Systems Integration and Testing

- Techniques for integrating various subsystems (power, communication, payload)
- Testing methodologies for UAV systems (simulation vs. real-world testing)
- Data analysis and performance assessment post-testing

Module 4: Emerging Technologies and Future Trends

- Exploration of cutting-edge UAV technologies (swarming, BVLOS, etc.)
- Future applications in various industries (delivery, disaster response, urban air mobility)
- The impact of UAVs on environmental monitoring and sustainable practices

Coordinators

Mr. Ishwaragowda V Patil

Dept. of Aeronautical Engineering

Phone: 9037800468

E-mail: ivpatil @git.edu

Outcomes

- Demonstrate manual piloting techniques and understand the fundamentals of autonomous flight systems.
- Conduct risk assessments and implement safety protocols to mitigate operational hazards.
- Conduct thorough testing and data analysis for UAV performance validation.
- Identify and assess future trends and technologies in the UAV sector.

In order to accept and start the training program, students are required to register with the respective department. Details to be provided by the student to the department include: **Name, USN, UID, Mobile No, Email id**

Terms and Conditions

- Only students who have paid a skill lab fee to the institution are eligible for the training.
- The students must maintain 90% attendance for obtaining the skill lab certificate.
- Students must attend training as per scheduled time