



**KLS GOGTE INSTITUTE OF TECHNOLOGY, BELAGAVI**

## **SKILL LABS**



### **Schedule of Skill labs offered at KLSGIT**

<b>Sl No</b>	<b>Department</b>	<b>Start date</b>	<b>End date</b>	<b>Title of Skill lab</b>
1	Aeronautical Engineering	04-11-2024	09-11-2024	UAS Design, Simulation & Flight Training Lab

### **Skill lab (Detailed schedule)**

<b>Sl No</b>	<b>Department</b>	<b>Title of Skill lab</b>	<b>Semester &amp; Division</b>	<b>Venue</b>	<b>Dates</b>	<b>Faculty name</b>	<b>Phone No</b>	<b>Email id</b>
1	Aeronautical Engineering	UAS Design, Simulation & Flight Training Lab	III	Advanced Flight simulator and Control lab	04-11-2024 o 09-11-2024	Prof. I V Patil	9037800468	ivpatil@git.edu



# SKILL LAB

ON

UAS Design, Simulation & Flight Training Lab  
For III Semester Students



## KLS GOGTE INSTITUTE OF TECHNOLOGY, BELAGAVI Department of Aeronautical Engineering

### 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.



### Mode of Conduction of each Module:

Theory : 18 Hours,  
Demo : 6 Hours,  
Lab Sessions : 12 Hours,  
Total duration : 36 Hours

### Module 1: Introduction to UAVs

Overview of UAV types  
Applications in various  
Emerging trends and technology



### Module 3: UAV Design and Structures

Key airframe components and materials  
Propulsion systems  
Payload integration and weight distribution

### Module 2: UAV Aerodynamics and Flight Mechanics

Principles of flight (lift, drag, thrust)  
Stability and control basics  
Overview of flight dynamics specific to UAVs

### Module 4: Avionics and Control Systems

Flight controllers, sensors  
Introduction to autopilot and flight control  
Testing and validation

### Terms and Conditions

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

### Acceptance

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

### Coordinators:

Name : I V Patil  
Dept. of Aeronautical Engineering  
Phone: 9037800468  
E-mail: [ivpatil@git.edu](mailto:ivpatil@git.edu)

### Outcomes

Understand various applications and emerging trends in UAV technology.  
Demonstrate an understanding of UAV stability, control, and flight dynamics.

Mention briefly about the job opportunities students have after completing the course..



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### **Schedule of Skill labs offered at KLSGIT**

<b>Sl No</b>	<b>Department</b>	<b>Start date</b>	<b>End date</b>	<b>Title of Skill lab</b>
1	Aeronautical Engineering	30-12-2024	03-01-2025	UAS Design, Simulation & Flight Training Lab

### **Skill lab (Detailed schedule)**

<b>Sl No</b>	<b>Department</b>	<b>Title of Skill lab</b>	<b>Semester &amp; Division</b>	<b>Venue</b>	<b>Dates</b>	<b>Faculty name</b>	<b>Phone No</b>	<b>Email id</b>
1	Aeronautical Engineering	UAS Design, Simulation & Flight Training Lab	V	Advanced Flight simulator and Control lab	30-12-2024 To 03-01-2025	Prof. I V Patil	9037800468	ivpatil@git.edu



# SKILL LAB

ON

UAS Design, Simulation & Flight Training Lab  
For V Semester Students



**KLS GOGTE INSTITUTE OF TECHNOLOGY, BELAGAVI**  
Department of Aeronautical Engineering

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### Mode of Conduction of each Module:

Theory : 12 Hours,  
Demo : 6 Hours,  
Lab Sessions : 18 Hours  
Total duration : 36 Hour

### Module 1: Flight Training and Operations

Fundamentals of flight  
Manual piloting techniques  
Basics of autonomous flight



### Module 3: UAV Systems

Techniques for integrating various  
Testing methodologies for UAV systems  
Data Analysis and performance assessment

### Module 2: UAV Regulations and Safety

Overview of national and international UAV regulations  
Airspace management  
UAV operation limits

### Module 4: Emerging Technologies and Future Trends

Exploration of cutting-edge UAV  
Future applications

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### Acceptance

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Name, USN, UID, Mobile No, Email id

### Coordinators:

Name **I V Patil**  
Dept. of Aeronautical Engineering  
Phone: 9037800468  
E-mail: [ivpatil@git.edu](mailto:ivpatil@git.edu)

### Outcomes

Understand various applications and emerging trends in UAV technology.  
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