

# Flight-Craft

**Learn, Design & Simulate Your  
Own Aircraft**



**Virtual Aircraft Design & Simulation Internship**

# Who We Are

ZenoSky is a forward-thinking technical training institute committed to bridging the gap between academic knowledge and real-world industry demands. We specialize in equipping students, aspiring aerospace professionals, and engineers with practical, hands-on skills in satellite operations, space mission design, and interplanetary simulations.



ZenoSky is an authorized reseller and academic promoter of FreeFlyer, a premier tool for space mission simulation and orbit determination. Through this partnership, we deliver industry-relevant training and solutions in orbital mechanics and mission planning.



## Why This Training & Internship?

This immersive program blends core aeronautical theory with hands-on virtual design and simulation.

Students gain real-world experience by modeling and analyzing their own aircraft using industry-relevant tools.

## What Can You Expect ?

By the end of this program, you'll be able to:

- Grasp core aircraft design and flight principles
- Model and simulate an aircraft using free tools
- Work with OpenVSP, XFLR5, and airfoil tools
- Build a project with report and presentation

## Tools & Skills You Will Learn

- OpenVSP (3D aircraft modeling)
- XFLR5 (aero analysis)
- Airfoil selection & analysis
- Aircraft sizing & layout
- Stability & performance estimation

## Real-World Projects You'll Build

- Design a glider or mini UAV concept
- Model a full 3D aircraft in OpenVSP
- Simulate lift, drag, and stability
- Aerodynamic performance evaluation



# PROGRAM OVERVIEW

## WEEK 1: FLIGHT THEORY & TOOLS

- Explore aircraft types and missions through case studies
- Understand the forces of flight with NASA FoilSim demos
- Learn wing theory: lift, drag, aspect ratio (Cl, Cd, AR)
- Study configurations: tail vs flying wing, CG, stability
- Get introduced to OpenVSP and XFLR5 design tools

## WEEK 2: CONCEPTUAL DESIGN

- Define mission goals and basic requirements
- Select configuration and size main components
- Design wing using airfoil data and tools
- Estimate tail size and control surface layout
- Create basic design sketches and views
- Create top/side view sketches using simple CAD tools

## WEEK 3: VIRTUAL 3D MODELING

- Get started with aircraft modeling in OpenVSP
- Build fuselage and wings in 3D
- Add tail and complete the full assembly
- Export model for aerodynamic analysis
- Share and review designs with peers and mentors

## WEEK 4: SIMULATION & ANALYSIS

- Analyze lift and drag using XFLR5 or FoilSim
- Estimate CG, stability, and control behavior
- Evaluate endurance, glide ratio, and range
- Refine the design based on simulation results
- Document final plots and key findings



## WEEK 5: FINAL REPORT & PRESENTATION

- Start writing report with mission, design, and sketches
- Add simulation results, plots, and design insights
- Create final poster or slides for presentation
- Deliver a short online presentation
- Reflect, share feedback, and receive certificate

## CERTIFICATION & RECOGNITION

- Certificate of Completion issued by ZenoSky
- Hands-on experience with OpenVSP, XFLR5, and FoilSim
- Aircraft design and simulation portfolio to showcase in your professional portfolio
- Eligible for recommendation letters based on performance
- Valuable addition to resumes, LinkedIn profiles, and graduate applications





## Who Can Join the Course?

Open to anyone interested in flight, aeronautics, or aircraft design—no prior experience required.

## How to Join ?

Submit your details through the Google Form below, and we'll get back to you with further instructions.

GET STARTED →

## Other Course Details

- Mode: Online
- Requirements:
  - A laptop or desktop with basic processing power
  - Stable internet connection
  - Interest and commitment to complete weekly assignments and the capstone project

# ENGINEERING TOMORROW'S SKIES



## Contact Us

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