



*INCREASING THE PILOT POPULATION BY  
IMPROVING AVIATION STEM EDUCATION IN HIGH  
SCHOOLS*

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# SCIENCE TECHNOLOGY ENGINEERING MATH (STEM)



## Big Push for STEM Education

Driven by problem-solving, discovery, exploratory learning, and require students to actively engage



## STEM education through aviation activities



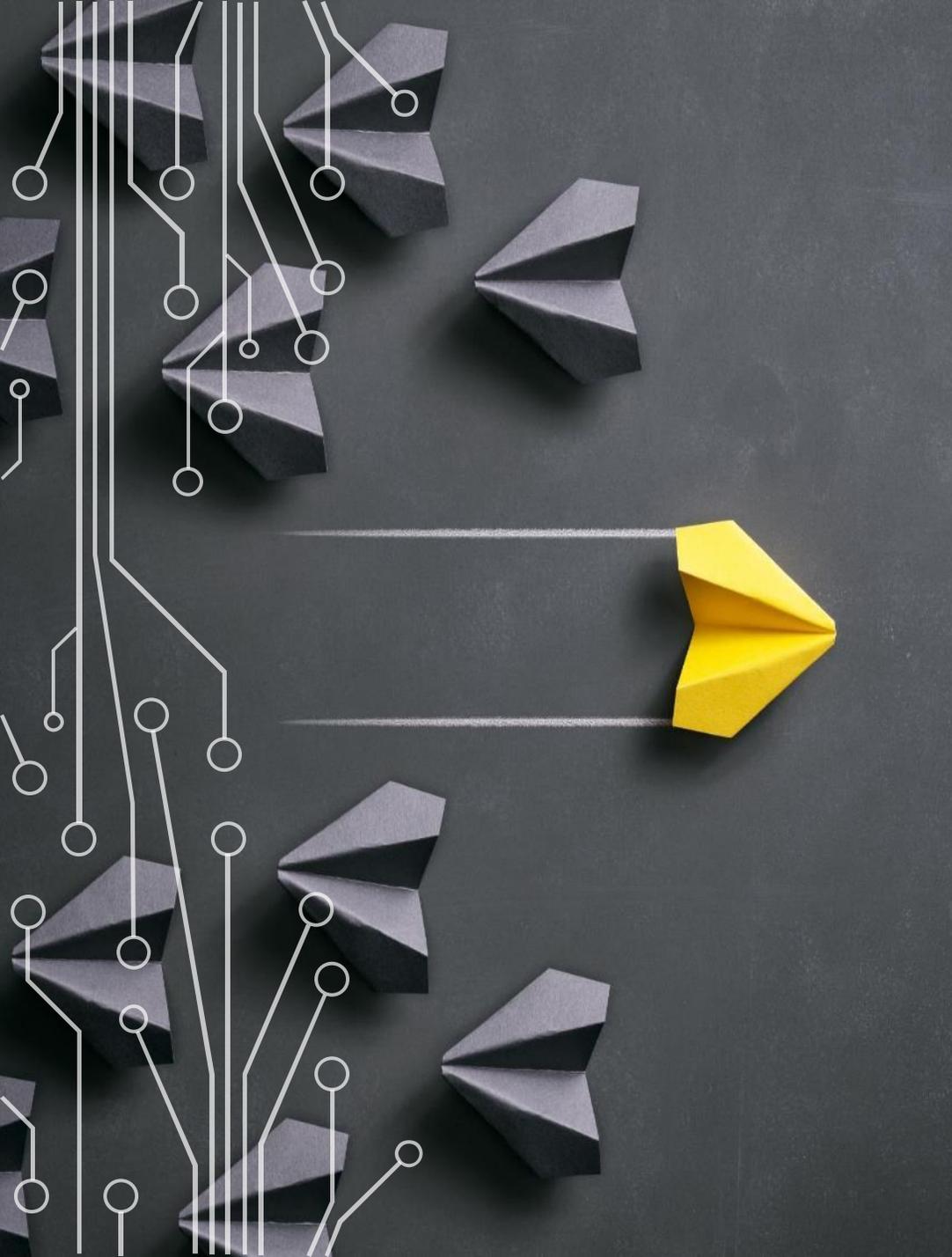
## Why Aviation?

Aviation favorite & interesting subject for kids of all ages



# AVIATION INDUSTRY SHORTAGE

- FAA Workforce Development Grant Goals:
  - “Generate and increase interest and prepare students to become aircraft pilot, aerospace engineers, or unmanned aircraft systems operators”
- The grant is a result of the FAA Reauthorization Act of 2018
  - Congress addressed the projected shortages



## OUR GOAL IN APPLYING FOR THE GRANT

- Reach students and teachers from a diverse collection of public and private schools in rural, urban, and suburban areas to help provide access to aviation education and meet the industry's growing labor needs.
- Create opportunities for the improvement of communities that have been historically underserved.



# OUT INVOLVEMENT IN THE GRANT

- Develop and launch 2 virtual self-contained courses aimed at high school students:
  1. Private Pilot Ground School
  2. Part 107 Remote Ground Operator Ground School

*Both are designed to prepare students to take the corresponding FAA Written Knowledge Exam*



# LAUNCH THE COURSES

## Collaboration with Gatez Aerospace Institute

- Started ERAU program at 10 new schools nationwide, outside of FL
- Targets schools with a higher proportion of underreached communities

## Provide Scaling Opportunities

- Specific topics to help in classroom modules or lessons.

## Professional development for educators

- Federal Aviation Administration (FAA)
- Aviation Career Education (ACE) Academies
- Experimental Aircraft Association (EAA)
- Aircraft Owners and Pilots Association (AOPA)
- Civil Air Patrol (CAP)
- Women in Aviation International (WAI)

# 14 CFR 1.1 Definitions

Select each button to learn more and scroll the panel when needed

**Administrator**

**Aircraft**

**Aircraft engine**

**Airplane**

**Airport**

**Air traffic control**

**Ceiling**

**Flight time**

**Medical certificate**

**Airframe** - the fuselage, booms, nacelles, cowlings, fairings, airfoil surfaces (including rotors but excluding propellers and rotating airfoils of engines), and

- Home
- Assignments
- Grades
- Badges
- Modules
- Pages
- Open Badges

By the end of this course, you will have gained comprehensive knowledge and confidence to successfully pass the FAA Private Pilot knowledge exam. ERAU Private Pilot 101 is your gateway to realizing your dream of taking to the skies and embarking on a fulfilling career in aviation. Get ready to soar high and start on an exciting journey into the world of aviation!

Click on the lesson topics below to get started.

Lesson Number	Lesson Topic
<b>Section 01</b>	
Lesson 01	<a href="#">Course Instructions</a>
Lesson 02	<a href="#">Introduction to Flying</a>
Lesson 03	<a href="#">Flight Controls, Aircraft Components, and Systems</a>
Lesson 04	<a href="#">Aerodynamics of Flight</a>
Lesson 05	<a href="#">Principles of Flight</a>
Lesson 06	<a href="#">Flight Instruments</a>
Lesson 07	<a href="#">Section 1 Review &amp; Exam</a>
<b>Section 02</b>	
Lesson 08	<a href="#">Airport Operations and Traffic Patterns</a>
Lesson 09	<a href="#">Altitudes</a>
Lesson 10	
Lesson 11	

**0% COMPLETE**

- Navigation Log
- Airspace Procedures
- Weather Assessment
- Weight & Balance
- Performance

- Follow along with the demonstration below to understand how to properly fill out both the ERAU Navigation Log and the ICAO Flight Plan for the cross-country scenario.
- Understand how to calculate time, airspeed, and distance.
- Use the scenario to determine initial cruising altitude.
- Use the matching activity to understand the obstacles that could disrupt your flight plan.

# A QUICK GLANCE!

loading an aircraft can create a variety of problems:

**Have you checked all sections?**

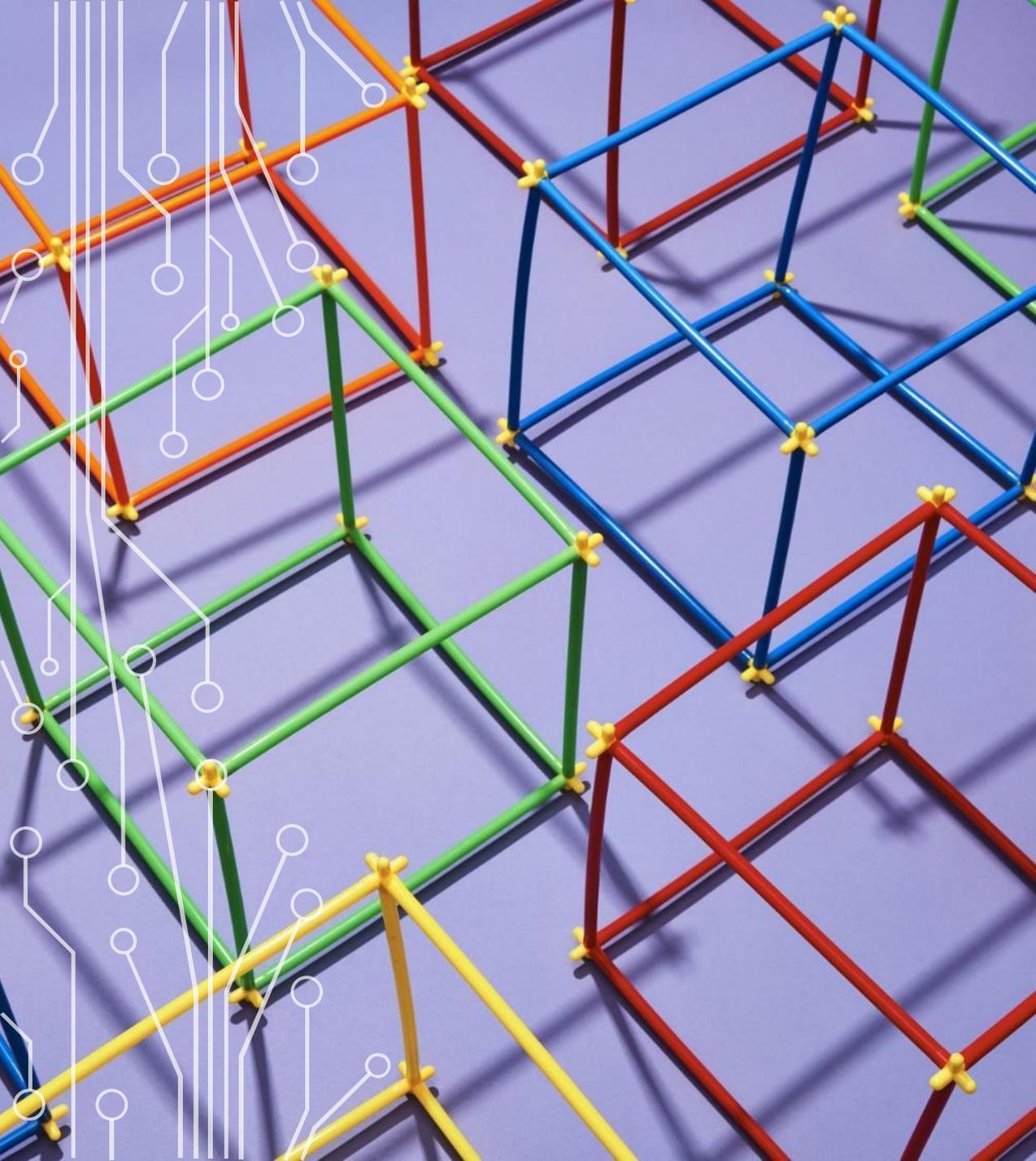
**NO** **YES**

- 1 Takeoff speed & run
- 2 Climb
- 3 Cruise
- 4
- 5
- 6 Maneuverability
- 7 Landing roll & speed
- 8 Excessive load

**ERAU Remote Pilot 101**

**Lock #1: Photo Hunt**

You've gone looking for keys and your drone is over an intersection. The first key is lost somewhere in this area. Use the drone to find it! Your drone can make great top-view photos. Explore the area inch by inch to find the key.



## WHAT CAN YOU DO WITH THIS INFORMATION?

- Connect with local communities or schools and bring this resource or similar resources to those programs.
- Collaborate with us and other organizations offering aviation STEM resources
- Volunteer for an organization that is offering aviation STEM education
  - Talk to youth about your career
  - Donate tools and supplies
  - Supervise a project

## OTHER ORGANIZATIONS OFFERING AVIATION STEM RESOURCES FOR HIGH SCHOOL STUDENTS

- AOPA
- EAA
- CAP
- FAA
- SSA
- GAMA



## **PRIVATE PILOT COURSE**

<https://erau.edu/private-pilot-101>



## **REMOTE PILOT COURSE**

<https://erau.edu/remote-pilot-101>



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