STEM through the lens of Aviation
Bachelor’s in Mechanical Engineering

20-year Master Instructor

Project Leader 4-H STEM Programs

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TRANSFORM AVIATION
NASA AERONAUTICS: AVIATION AT THE LEADING EDGE

SPACE GRANT UNIVERSITY STUDENTS AND FACULTY:

Get to know the people, the ideas and the technology that are driving the revolutionary work done by the first "A" in NASA – NASA Aeronautics.

NASA has made decades of contributions to aviation. Every U.S. commercial aircraft and control tower have NASA-developed technology on board.

The next great aviation transformations are being designed and engineered right now, from the return of supersonic flight to the emergence of flying cars and electrified aircraft.

WHERE ARE YOU IN THIS FUTURE?

Each one-hour webinar will feature conversations with NASA Aeronautics researchers who will talk about the technology and also about their educational and career paths. Students can submit questions for the presenters.

REGISTRATION REQUIRED

Online registration for this series will open on August 30, 2019.

Learn more and register at:

nasa.edu/aeronautics

ABOUT

This series is offered as a partnership between NASA's Aeronautics Research Mission Directorate and the National Space Grant Program and is produced by Old Dominion University.

Quiet Supersonic Flight Over Land - Lowering the Boom

Wednesday, October 2, 2019
7:30 p.m. EDT

Safe Flight for Drones - Designing a System for Urban Air Mobility

Thursday, October 24, 2019
7:30 p.m. EDT

Electrified Aircraft - Tackling the Challenges of Alternative Propulsion

Wednesday, November 6, 2019
7:30 p.m. EST
Public Libraries: 9,100
Public-Use Airports: 4,800
2,200 Public-Use Airports

20+ STEM Ecosystems
Collaborate
Connect
Glider Trajectory Problem

\[ a = \text{Glide Angle} \]
\[ d = \text{Distance Flown} \]
\[ h = \text{Change in Height} \]

From Trigonometry:
\[ \tan(a) = \frac{h}{d} \]
\[ D = \text{Drag} \]
\[ L = \text{Lift} \]

From Balance of Forces:
\[ L \cos(a) + D \sin(a) = W \]
\[ W = \text{Weight} \]
\[ L \sin(a) = D \cos(a) \]

Measure: height \( (h) \), distance \( (d) \), and weight \( (W) \).
Education
Research
Public Education