Fall 2019
College of Engineering
Undergraduate Major/Minor
Information Session

Aerospace Engineering
& Ocean Engineering

VIRGINIA TECH
Kevin T. Crofton Department of Aerospace and Ocean Engineering
GREETINGS AND WELCOME

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## Agenda

- Where to get Information
- What do Aerospace and Ocean Engineers do?
- Facilities & Rankings

### Professional Societies & Design Teams

- AIAA
- SNAME
- Ambassadors: Jayme Goode
- DBF (David Shane)
- HPS (Matt Cris)
- Rocketry (Johnny Jaffee)
- RockSat-X (Nicholas Jones)

- Q&A
What is AEROSPACE ENGINEERING?

Aerospace = AERONAUTICS + ASTRONAUTICS

**Aeronautics** is the science and engineering involved with the analysis, design, and manufacturing of air-flight capable machines that operate within the atmosphere for exploration, recreation, transport, and defense.

**Astronautics** is the science and engineering involved with the design, and manufacturing of machines which operate beyond Earth's atmosphere for exploration, recreation (!?), transport, and defense.
What do Aerospace and Ocean engineers do?

Design vehicles, including piloted aircraft and crewed vehicles,…
...spacecraft and space launch vehicles,...
...remotely piloted (or autonomous) vehicles, ...
Aerospace and Ocean engineers don’t do cars…
…unless the car is really fast.

(This one is designed for 1000 mph.)
Facilities

Sub- and supersonic wind tunnels

Water tunnel and towing tank

Spacecraft Simulator

Autonomous ground, air, and underwater vehicles

Machine Shop
3D Printing and Additive Manufacturing

Wind Tunnel Models

Static Models and Prototypes
Kentland Experimental Aerial Systems (KEAS) Airfield

Asphalt runway at the Kentland Airfield located at the center of the Kentland Farm.
AOE Undergrad Enrollment and Degrees Awarded

Undergraduate Enrollment

Undergraduate Enrollment 2008-2017

Bachelor Degrees Awarded

Bachelor Degrees Awarded 2012-2017
Where do our alumni end up?

Employers range from large, multinational corporations to small consulting firms.

Some of our alumni choose to go into related fields such as automotive engineering, structural engineering, environmental engineering, or into professions such as law or medicine.
In 2017-18, AOE graduates median salary was $65,000 in Aerospace Engineering, and of those 88% had jobs related to their major.

RECENT SURVEYS* OF AOE GRADUATES INDICATE:

- **57%** expected full-time employment
- **29%** furthered studies in graduate school
- **10%** went into the military or volunteer service

*conducted by the Virginia Tech Provost Assessment Office and the Office of Career and Professional Development*
Virginia Tech AOE Global Ranking

- CENTER FOR WORLD UNIVERSITY 2017 RANKINGS
  - #5 AEROSPACE ENGINEERING

- 2017 SHANGHAI GLOBAL RANKINGS
  - #10 AEROSPACE ENGINEERING

AOE Anechoic Wall-Jet Tunnel
Virginia Tech AOE – USA Ranking

VT Drone Cage

- 2016 Best Value Schools
- #2 Best Value for AEROSPACE ENGINEERING
- #13 AEROSPACE ENGINEERING Undergraduate Program
- #11 AEROSPACE ENGINEERING Graduate Program
- 2018 U.S. News and World Report
Virginia Tech listed as a “preferred supplier” of talent to the Aerospace & Defense industry, along with Georgia Tech, Purdue, Univ. Colorado-Boulder, & Cornell.
Design teams – extracurricular (a few examples)
Aerospace and Ocean Engineering
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Now we are here to answer your questions