

DO PHYSICS.

BE ANYTHING.



## UNC PHYSICS

**Antonio Cortes Did.**

**Every airplane pilot likes the idea of having a safety net. Antonio Cortes is no different. His was physics.**

While he received instruction in the Air Force and from a commercial airline that prepared him for 13 years of flying, technology and training didn't give him the same security as physics.

A 1990 University of North Carolina physics graduate, Cortes said kinematics - the description of objects in motion without regard to how the motion started — helped him with flight planning and gave him a way of double checking his numbers and what the computers were telling him.

"It definitely helped me with regard to doing an energy plan, which is something every pilot has to do," Cortes said. "The computer might be telling you that your aircraft weight is 'x' but that's out of proportion to what the aircraft can carry. Are you just going to go along with that because that's what the computer says? Or are you going to raise a warning flag? I applied the kinematics I learned at age 19 in situations like that all the time."

Cortes, now a professor at Embry-Riddle University, said a crew in Australia encountered a similar problem. An incorrect number was entered into a computer and the computer recommended the wrong speed. The plane's tail scraped the runway and suffered major damage. But knowing how and why things are supposed to work can help someone avoid those pitfalls.

"When you analyze a physical system or transportation system, physics gives you more of a perspective of what it really entails and how it works," Cortes said. "A layman looks at a system on the surface and is more concerned with what it looks like. A physicist looks at it and says how does it interact with its environment? How much energy does it have? It's an interesting prism for viewing the world."

Whether you're on the ground or in the air.

If you have questions about how you take physics and apply it to a career that you might not associate with the subject, you can email Tony at [antonio.cortes@erau.edu](mailto:antonio.cortes@erau.edu).

If you want to know more about the physics of flying, check out:

[http://ffden-2.phys.uaf.edu/211\\_fall2002.web.dir/Will\\_Salzman/index.html](http://ffden-2.phys.uaf.edu/211_fall2002.web.dir/Will_Salzman/index.html)

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