

A wide-angle photograph of the University of Central Florida campus, featuring Millican Hall and a large fountain. The image is overlaid with a semi-transparent yellow filter. The text is centered in the upper half of the image.

University of Central Florida College of Engineering & Computer Science

Department of Mechanical & Aerospace Engineering

General Department Information

MAE hosts programs in:

- Aerospace Engineering: BS, MS, PhD
- Mechanical Engineering: BS, MS, PhD
- Biomedical Engineering: Minor, MS, PhD

Student enrollment totals ~5,800

- 5,090 undergrad: 3,316 BSME + 1,774 BSAE
- 667 grad: 460 MS + 207 PhD

MAE Department Highlights

- 56 full-time faculty members
- Industry adjuncts (Lockheed, Siemens, NASA)
- 8 academic advisors / success coaches
- #1 provider to aerospace & defense industries



Undergraduate Degree Programs

Aerospace Engineering

- Astronautics & Aeronautics
- Advanced Flight Vehicles & Technologies
- Dynamics, Thermodynamics, Solid Mechanics, Fluid Mechanics, Controls, Aerodynamics, Propulsion, Structures, Orbital Mechanics, ...



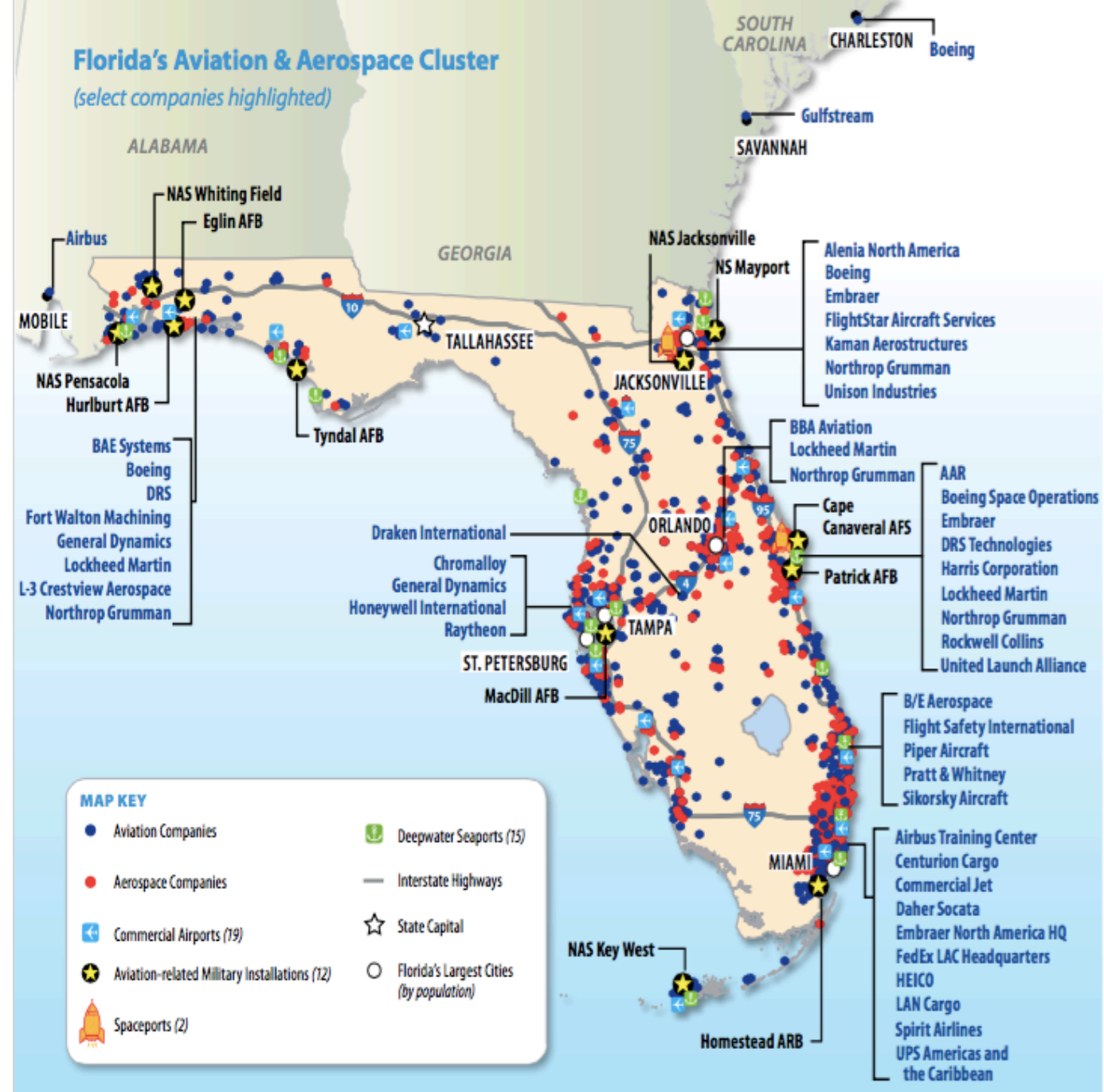
Mechanical Engineering

- Energy Systems & Mechanical Systems
- Design & Manufacturing
- Dynamics, Thermodynamics, Solid Mechanics, Fluid Mechanics, Controls, Heat Transfer, Machine Design, ...



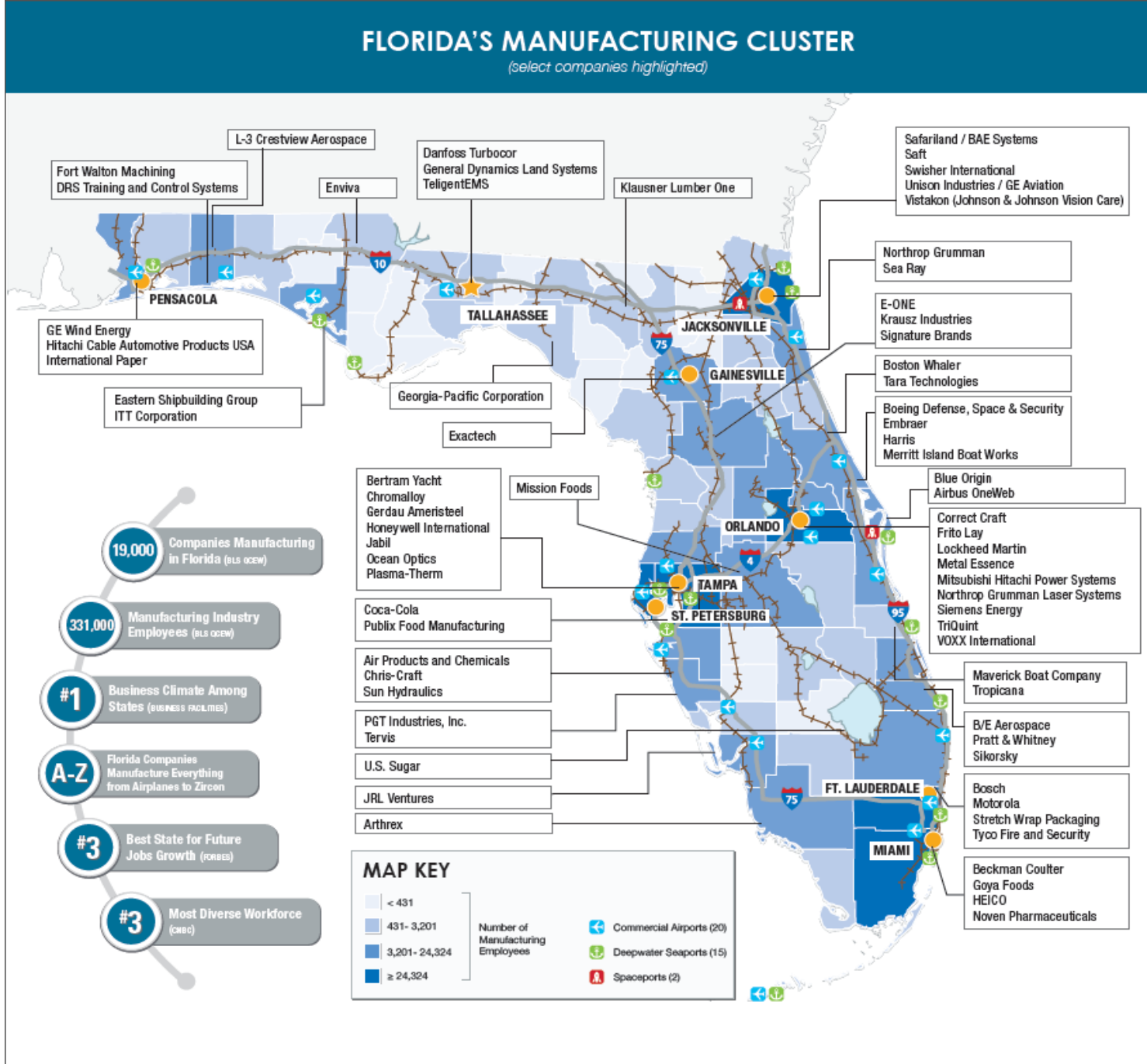
FL Aerospace Industry

- 100K+ employees
- Economic output >\$20 billion
- Industry collaboration
 - Shared expertise
 - Unique facilities
 - Internship/employment access
- Increasing state-level partnerships and initiatives



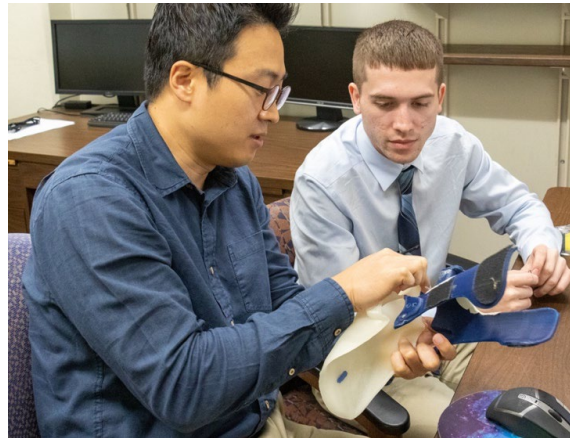
FL Manufacturing

- 300K+ employees
- 20K companies with manufacturing presence
- Opportunities throughout central FL and state



Other MAE Programs

- **Biomedical Engineering Minor** (Total Credit Hours: 38)
 - Minimum UCF GPA of 3.0
 - Required Courses (32 Credit Hours)
 - Restricted Electives (6 Credit Hours)
- **Accelerated BS-to-MS**
 - “Double-count” up to 4 courses
 - To both undergrad, grad programs
 - Save time & tuition!
 - Can begin in junior year
 - Minimum UCF GPA of 3.0
- **Internship for Credit**
- **Undergraduate Research** (both 0- and for-credit options)



Internship / Co-op Opportunities

- Airbus
- Aerojet Rocketdyne
- Apple Inc.
- Blue Origin
- Boeing
- Embraer
- Fiat Chrysler Automotive
- Ford Motor Company
- General Dynamics
- General Motors
- GE (Aviation & Power)
- Honda Performance Development
- Honeywell
- Jacobs Technology
- L3 Harris
- Leidos Engineering
- Lockheed Martin
- McMaster-Carr
- Microsoft
- Millennium Engineering and Integration
- Mitsubishi Power Generation Americas

- National Aeronautics and Space Administration (NASA)
- Naval Air Systems Command (NAVAIR)
- Naval Sea Systems Command (NAVSEA)
- Nike
- Northrop Grumman
- Pratt and Whitney
- Raytheon
- SGT | KBRwyle – Johnson Space Center
- Siemens Energy
- Sikorsky Aircraft Corporation
- SpaceX
- United Airlines
- United Launch Alliance
- United Space Alliance
- United Technologies
- U.S. Air Force
- Universal Creative
- Walt Disney World

SIEMENS

← EMBRAER

LOCKHEED
MARTIN

UNIVERSAL
Creative

AR

MH
MITSUBISHI HITACHI
POWER SYSTEMS

WALT Disney World
Where dreams come true

PRATT & WHITNEY
DEPENDABLE ENGINES
GO BEYOND

NIKE

Apple

NASA

Microsoft

FIAT
CHRYSLER

SPACEX

Honda Racing
HPD

NORTHROP GRUMMAN

L3HARRIS™
FAST. FORWARD.

SIKORSKY
A LOCKHEED MARTIN COMPANY
Five-Star Circle of Distinction

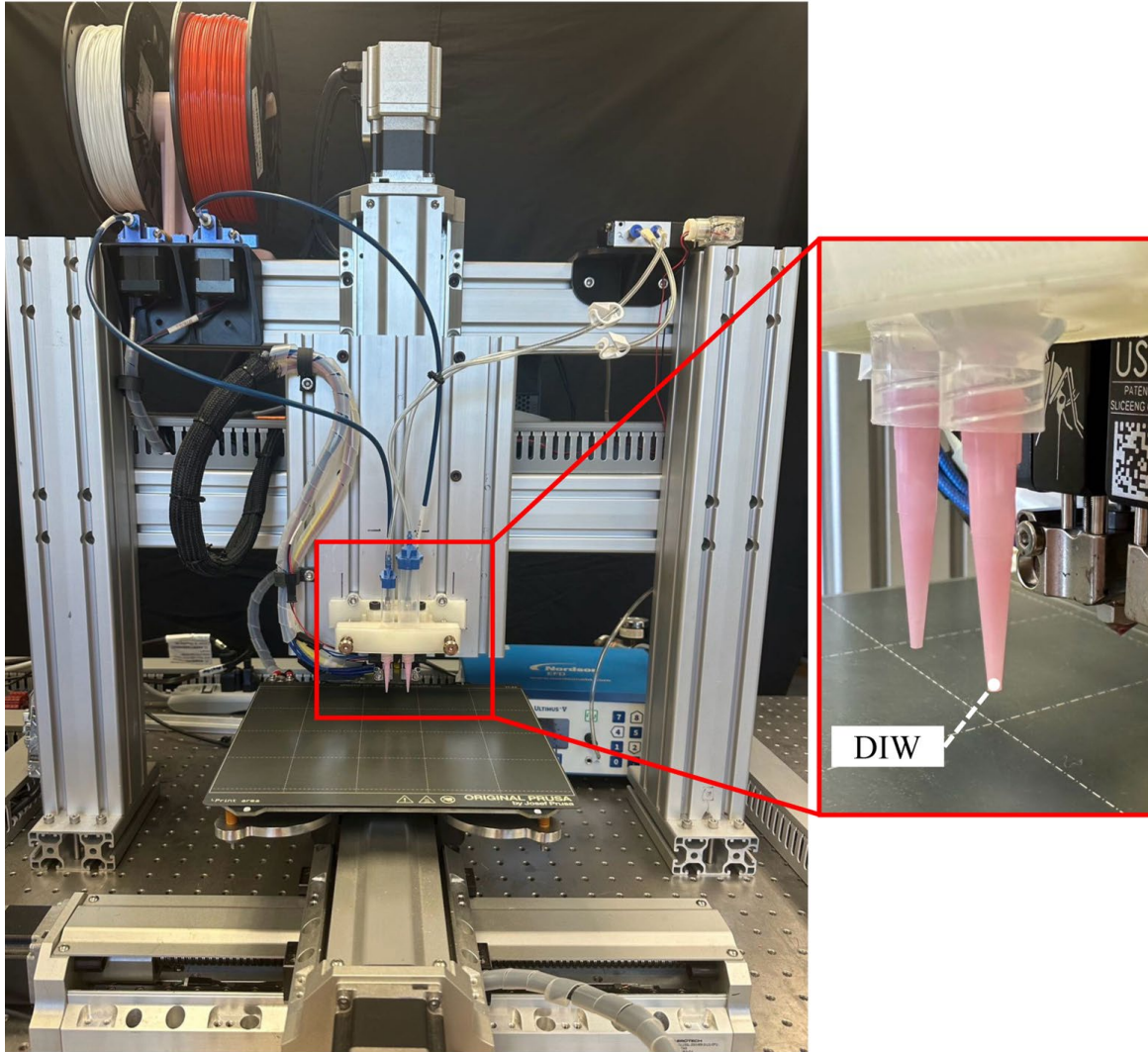
BLUE ORIGIN

BOEING

Raytheon

UCF

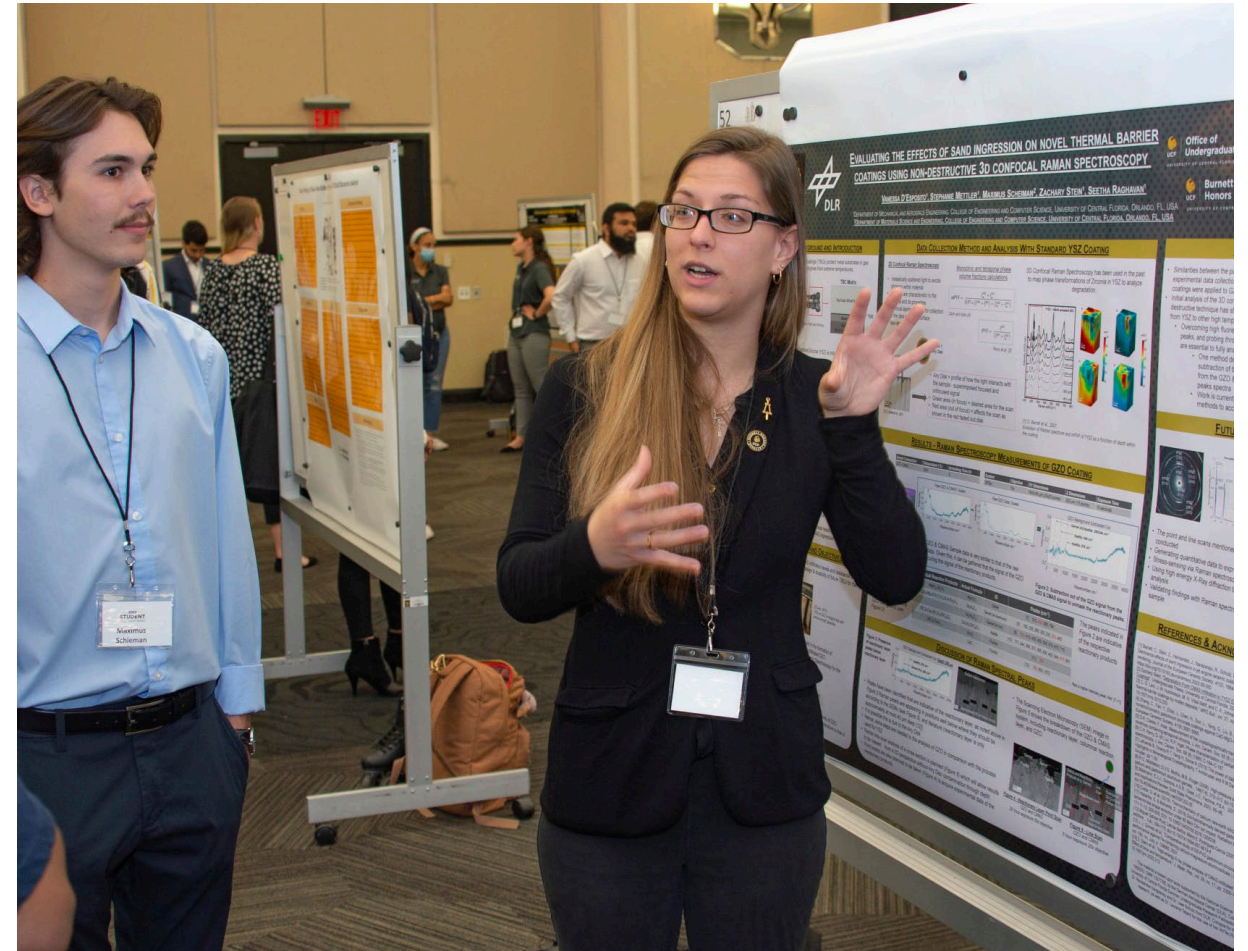
Sample Senior Design Projects



- Multi-Material 3D Printer team, which designed and built a prototype of a 3D printer that can use different materials such as ceramics or polymers. The team specifically designed the prototype for MAE Assistant Professor Dazhong Wu, whose research focuses on manufacturing. What sets the printer apart is the fact that it's designed for research applications and is much cheaper than similar printers already on the market.
- One of the Senior Design Team Members received a job with Lockheed Martin.

Undergraduate Research Opportunities

- Honors thesis
- Participate in a summer research program
 - NSF REU
 - SURF
- Present at UCF's Showcase of Undergraduate Research
- Prepare for grad school



High-Impact Practice Opportunities

- Most students complete an internship / co-op
 - Others conduct undergraduate research (20%)
 - Some explore leadership/entrepreneurial roles (15%)
- } **Some do all three!**
- Students can study abroad for a semester or a 4-week course
 - Australia, Egypt, France, Germany, India, Ireland, South Korea, Spain, Sweden, UK

UCF ROME CENTER

- In demand UCF courses
- Taught by globally-engaged UCF faculty
- Shared experiences with UCF students
- 4 weeks in the Eternal City

Additional Information: <https://members.apiabroad.com/ucf/>



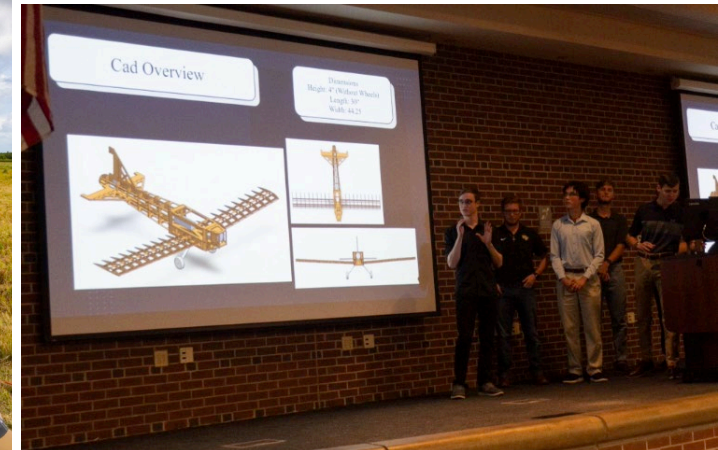
Award-Winning Students

- Office of Prestigious Awards helps students craft competitive apps
- Order of Pegasus
- Astronaut Scholarship (\$15K)
- Goldwater Fellowship
- McNair Fellowship
- Matthew Isakowitz, Brooke Owens, Patti Grace Smith Fellowships
- and more!



Student Organizations

- [American Society of Mechanical Engineers \(ASME\)](#)
- [American Institute of Aeronautics and Astronautics \(AIAA\)](#)
- [American Society of Heating, Refrigeration, and Air Conditioning \(ASHRAE\)](#)
- [Students for the Exploration and Development of Space \(SEDS\)](#)
- [Knights Experimental Rocketry \(KXR\)](#)
- [Knights Satellite Club \(KSC\)](#)
- [Society of Automotive Engineers \(SAE\)](#)
- [Biomedical Engineering Society \(BMES\)](#)
- [Themed Experience Association \(TEA\)](#)
- [Society of Themed Entertainment Engineers and Leaders \(STEEL\)](#)
- Honor Societies: Tau Beta Pi, Pi Tau Sigma, Sigma Gamma Tau



Post-Graduate Employment Prospects

While taking classes:

- 65-70% of students complete an internship, conduct research, etc.

One year after graduation:

- 75-85% working full-time, starting salary \$65-80K
- 20-30% continuing education (MS/PhD)

Five years after graduation:

- 95% working full-time, average salary \$90K

Ten years after graduation:

- 96% working full-time, average salary \$120K

Top Recruiters

Aerojet Rocketdyne

Boeing

General Motors

Jacobs Engineering

L3Harris

Leidos

Lockheed Martin

Mitsubishi Power Systems

NASA

Northrop Grumman

Siemens

United Launch Alliance

Walt Disney Company

Prerequisites for Aerospace/Mechanical Engineering

- All students must earn a grade of "C" (2.0) or better in Common Program Prerequisites.
- Earn at least 15 credits from the following:
 - [MAC2311C](#) - Calculus with Analytic Geometry I (4) (AP Calculus AB Score: 3-5)
 - [MAC2312](#) - Calculus with Analytic Geometry II (4) (AP Calculus BC Score: 5)
 - [MAC2313](#) - Calculus with Analytic Geometry III (4)
 - [MAP2302](#) - Ordinary Differential Equations I (3)
 - [PHY2048C](#) - General Physics Using Calculus I Studio (4) (AP Physics C Mechanics Score: 4-5)
 - [PHY2049C](#) - General Physics Using Calculus II Studio (4) (AP Physics C Electricity/Magnetism Score: 4-5)
 - Complete at least 1 of the following:
 - [CHS1440C](#) - Principles of Chemistry (4)
 - [CHM2045C](#) - Chemistry Fundamentals I (4) (AP Chemistry Score: 4-5; IB Chemistry: 5-7)
- **Grand Total Credits: 19**

Plans of Study & Course/Test Credit Equivalencies



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