ALTITUDE

THE OFFICIAL MAGAZINE OF EMBRY-RIDDLE AERONAUTICAL UNIVERSITY | SPRING 2023

SOARING ABOVE AND BEYOND

A 100,000-FOOT JOURNEY TO THE UPPER ATMOSPHERE

NEW IN **ENGINEERING**

Embry-Riddle Teams Master the ABCs of Design, Build, Fly

NEW IN AVIATION

The Golden Eagles Take Home Their 14th National Title

NEW IN SECURITY & INTELLIGENCE

The Hacker Lab — Training Tomorrow's Cyber Warriors

FLORIDA | ARIZONA | ONLINE

EMBRY-RIDDLE Aeronautical University





ALTITUDE

SPRING 2023

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EDUCATIO ALTITUDE

AT EMBRY-RIDDLE, DARING TO THINK **BIG ISN'T JUST IN OUR CURRICULUM** - IT'S A WAY OF LIFE.

Since 1926, Embry-Riddle Aeronautical University has been the leader in aviation and aerospace education. Our programs are consistently ranked among the top degree programs in the nation, with several top 10 and number one rankings.

Embry-Riddle has been at the forefront of groundbreaking aeronautical milestones since the early days of flight. We are innovators in the fields of Applied Science, Aviation, Business, Computers and Technology, Safety, Security and Intelligence, Engineering and Space.

Embry-Riddle's mission is to teach our students the science, practice and business of aviation and aerospace, preparing students for productive careers and leadership roles in business, government agencies and the military.

Our students are a part of innovative research that has the power to change the world. With a focus on signature research areas, the university partners with industry and other key stakeholders to develop new insights and solutions for the challenges of today and the opportunities of tomorrow.

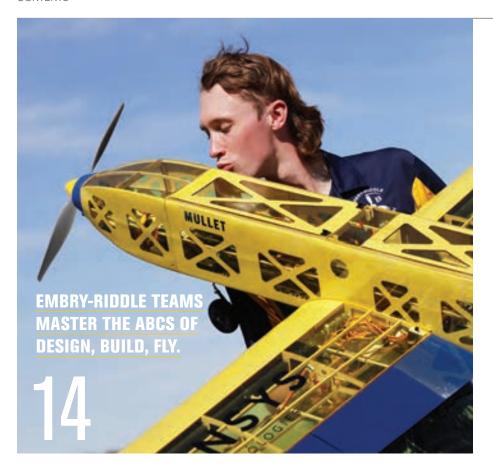
Embry-Riddle's faculty are leaders in their respective industries and share the knowledge they've gained from decades of higherlearning experience with our students to ensure graduates have a competitive edge in the workforce.

We are proud of our diverse student body representing the best young minds hailing from around the globe.

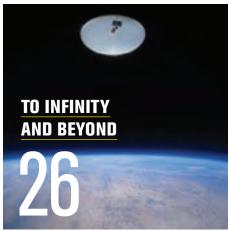
Our residential campuses located in Daytona Beach, Florida, and Prescott, Arizona, offer you the choice of a spectacular beach setting or a scenic mountain community. Our Worldwide and online options offer award-winning technology that leverages online and face-to-face instruction through a network of locations designed to support student advancement in the U.S. and abroad.

> **Put your passion** into practice.









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Air Traffic Management			
Applied Biology			
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Project Management			
Safety Management			
Simulation Science, Games & Animation			
Software Engineering			
Space Physics			
Spaceflight Operations			
Technical Management			
Unmanned Aircraft Systems			

EAGLES GET DOWN TO BUSINESS WITH BOEING

A group of business students from all three Embry-Riddle Aeronautical University campuses recently got a unique opportunity, thanks to the university's longstanding relationship with The Boeing Company.

The students took part in a six-week virtual course called Boeing Business Fundamentals, which featured representatives from different divisions within the aerospace giant discussing how Boeing does business every day.

"Each week, the class showcased key areas that ranged from procurement to contract negotiations and included projects that students needed to complete," said Dr. Jules Yimga, department chair for the School of Business at the Prescott Campus.

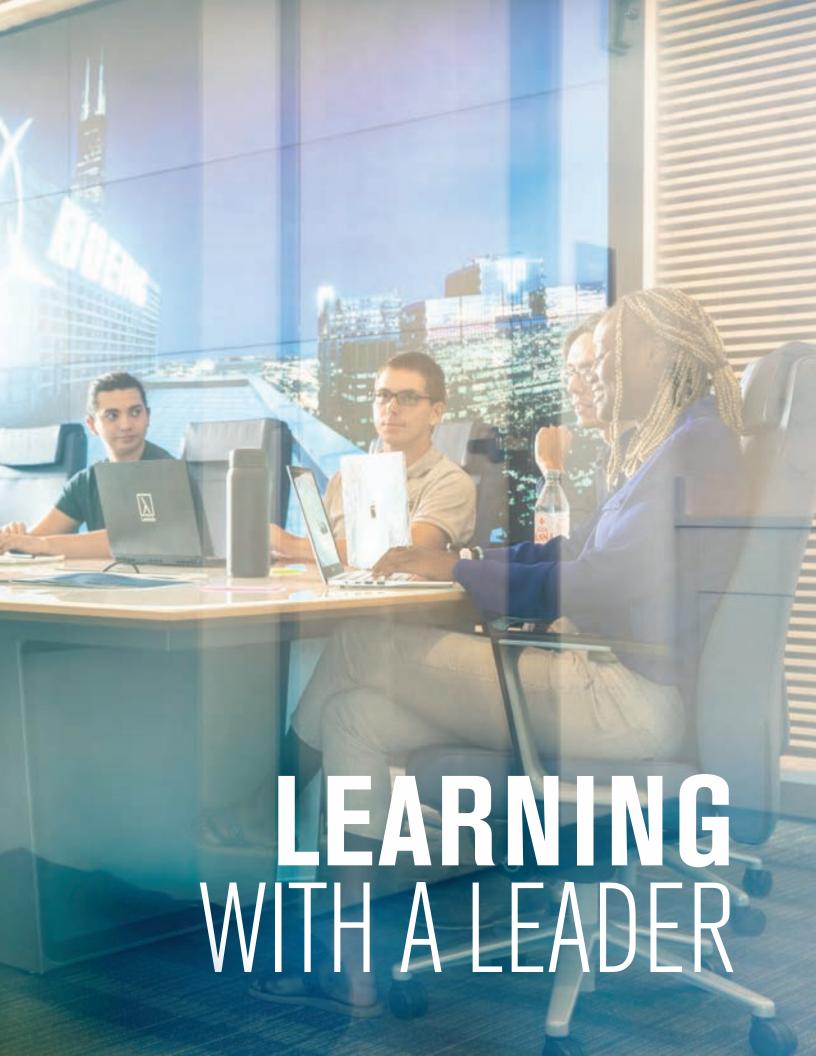
The course ended with the students, comprised of about 20 juniors and seniors from the Daytona Beach, Prescott and Worldwide campuses, making presentations on different key business topics directly to the Boeing representatives. At least two students left the course with full-time job offers.

The students who attended were selected internally by faculty members, and Yimga said that an interest in the business of aviation — an Embry-Riddle specialty — was among the criteria used when choosing class members.

"We went through a process of coming up with a short list of students that would be heading into the job market soon," Yimga said. "The class ended up being a huge success."

Boeing and Embry-Riddle are now looking to build on that success, and plans are in the works to hold the course again in the Spring 2023 term.







Going for a Spin

As an aspiring astronaut, Christopher Vanacore knows he will face mentally and physically demanding training.

He was thrilled for the chance to do a session in the National Aerospace Training and Research (NASTAR) human centrifuge. The machine simulates the Virgin Galactic suborbital spaceflight profile and reaches a G-force of over six, or the equivalent of six times the force of gravity felt on Earth.

"I thought it would be a fun, exciting ride," said Vanacore, who is majoring in Spaceflight Operations. "But as soon as I got to the facility and saw the scientists perform dry test runs of the human centrifuge, I gulped."

Although he has plenty of hurdles ahead before he reaches his goal of heading for orbit, Vanacore said the centrifuge session put at least one unknown — the G-force factor — to rest.



Detecting Emotion

Emma Rasmussen was among a group of undergraduates working on research to monitor the emotional reactions of airline passengers during their travel experience.

The project, supported by the Business Philanthropy Council as well as the Undergraduate Research Institute is being led by Dr. Stathis Kefallonitis, associate professor in the College of Business, Security and Intelligence.

It uses bio-sensory technologies like eye tracking and functional magnetic resonance imaging in order to gauge the emotions of participating passengers.

Rasmussen said the research opportunity, with its "unique research methods and goals" will help her to stand out to future employers and "make for an interesting conversation about the direction our industry is headed in a post-COVID world."



Shifting Gears

Marina Lindbergh believes there is no career more romantic than being a pilot.

"Flying because you love it and always building your skills," she said. "That's the goal."

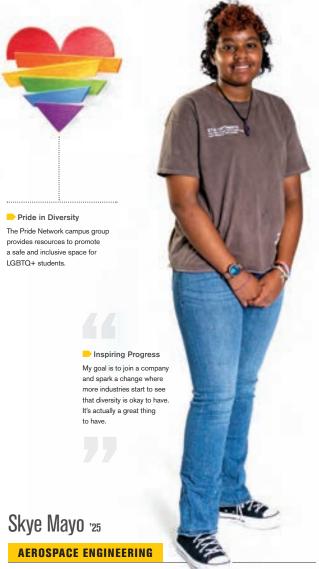
Though her great grandfather's cousin was the famous aviator Charles Lindbergh; it took her a while to follow her heart. The Aeronautical Science student initially targeted healthcare as her dream job, but after working in the field for two years, the stress took its toll.

"I started thinking about things that made me truly happy without taking the struggles of work home with me every day," she said.

The answer became obvious: "Flying."

Now, her dream job is to become a flight instructor, a passion she shares with her father, Ivan, who plans to begin working on his own pilot's license soon.

"It's a challenge," she said. "But I've never wanted anything more than I want this."



Sparking Change

Aerospace Engineering major Skye Mayo aims to inspire marginalized groups to pursue careers in STEM.

A Black woman and member of the LGBTQ+ community, Mayo knows firsthand the challenges others face.

"I carry it with me because it's a part of who I am, and I know there are a lot of people who lose interest in subjects because they're afraid of discrimination," she said.

Mayo was a recipient of the Yankees-Stonewall Scholarship Initiative, celebrating LGBTQ+ awareness and awarded to New York City students.

"I want to inspire more diversity because there's a lot of brilliant people in the world," she said.

After graduation, Mayo wants to bring her desire for more representation into the workplace.



Helping Athletes With STEM

Alex Britton is the CEO of his own LLC, CerebriTech, researching real-time concussion detection in athletes.

The student-athlete is studying Mechanical Engineering with a focus on biomedical systems. When Britton first learned of technology with the ability to detect cognitive functions in pilots, he wondered if this could be applied to concussion research to identify them when they occur.

Britton and his team were recently given the opportunity to work with StarterStudio, a nonprofit that assists tech startups and gives entrepreneurs resources to aid their development.

Britton emphasizes the importance of faculty advisors that are "really willing to work alongside you and help you." He names Dr. Ramy Rahimi, assistant professor of Entrepreneurship, and Dr. Christine Walck, assistant professor of Mechanical Engineering, as being vital in CerebriTech's growth.



Above and Beyond

Lilyanne Pepe's sights have long been set on space, and her goal got a huge boost when she was named one of the nation's first two Army ROTC cadets to be chosen for the U.S. Army's Air and Space Basic Course.

Pepe, a senior majoring in Astronomy and Astrophysics, will join Space Physics alum Michael Flynn in the exclusive course, which is the first step toward a future career as an Army Space Operations Officer.

"I strongly believe this program will help me get there because it will provide me with necessary foundational knowledge needed to understand the Army's role as a warfighting function in space," said Pepe, who also works as an undergraduate research assistant with Dr. Stephen Gillam, assistant professor of Physics and Astronomy.

TURTLE TECH POWER

The Turtle Tech program, a collaboration between Northrop Grumman and Embry-Riddle, aims to aid sea turtle conservation efforts by using technology to collect valuable data such as nest locations and frequency of the return to their nests, as well as dangers facing this endangered species. By using Unmanned Aircraft (UA), or drones, researchers can collect data without disrupting sea turtle habitats.

Senior Aerospace Engineering major Liz Bosh ('23) leads the engineering side of the project, which focuses on the computer used for data collection aboard the drones. From the building of neural networks for the computers to identify the turtles to the 3D modeling of the mount used to attach the computer and camera, it takes a team of engineers from various disciplines to ensure all the components are not only operational but airworthy as well.

As the technology used for Turtle Tech evolves, more specific information can be communicated, including the number of turtles in an area, as well as the specific species.

Senior Aerospace Engineering major Ariel Goya ('22) realized early on in his involvement with the Turtle Tech project that he would be contributing to something unique.

"Once I went to the first flight test, it made me realize that it was even cooler than how it sounded," said Goya.

Bosch recognizes the importance of Embry-Riddle's partnership with Northrop Grumman and understands the importance of her involvement.

"Northop Grumman is doing this to give back to the community, and I wanted to be a part of that."

Liz Bosch '23Aerospace Engineering

Arizona Sea Turtle

Ziva, a green sea turtle originally rescued in Florida, was deemed not releasable after being hit by a boat in 2010. Arizona's Sea Life Aquarium welcomed her, making her the first sea turtle to call the state home.

Lucky Seven

There are seven species of sea turtles: Leatherback, Green, Loggerhead, Kemp's Ridley, Olive Ridley, Hawksbill and Flatback.

Lights Ou

During turtle nesting season, artificial lighting along beaches can disorient hatchlings trying to make their way from their nests to the ocean.

Hatchlings vs. Washbacks

A baby sea turtle is called a hatchling. A washback is a baby sea turtle that has been washed back to shore due to storms, waves and wind.

Sorry, Dude

Despite how it was portrayed in "Finding Nemo," hatchlings do not stay with their parents. Once eggs hatch, hatchlings are on their own.



weather or limited visibility.

Spatial disorientation occurs when pilots cannot correctly interpret aircraft attitude, altitude or airspeed in relation to the Earth. Genetically speaking, humans are designed to maintain spatial orientation on the ground - but it's a different story in the air.

NTSB accident statistics show that spatial disorientation is a precursor to many aviation accidents, with between 5% and 10% of all general aviation crashes attributed to spatial disorientation, 90% of those being fatal.

The three-dimensional environment of flight is unfamiliar to the human body, creating sensory conflicts and illusions that make spatial orientation difficult, and sometimes impossible, to achieve.

The goal of the lab is to make students aware of these dangerous illusions and demonstrate methods to avoid spatial disorientation.

By experiencing illusions first-hand (on the ground), pilots are better prepared to recognize an illusion when it happens during flight and to take immediate action to stay safe.



The Force Dynamics 401cr Motion Simulator

This full-motion system provides a large motion range that truly simulates forces, delivers high-impact acceleration and has best-in-class frequency response that helps eliminate motion sickness.



Four-Axis Motion

The simulator offers four degrees of freedom: pitch, roll, heave and 360° of continuous yaw.



360° Immersive Experience

A high-powered computer with a Valve Index VR headset and hand controls is capable of running flight simulation software and other standalone VR applications.



Mind Games

The three-dimensional environment of flight is unfamiliar to the human body, creating sensory conflicts and illusions that make spatial orientation difficult and sometimes impossible to achieve.

TRAINING TOMORROW'S CYBER WARRIORS

The Hacker Lab

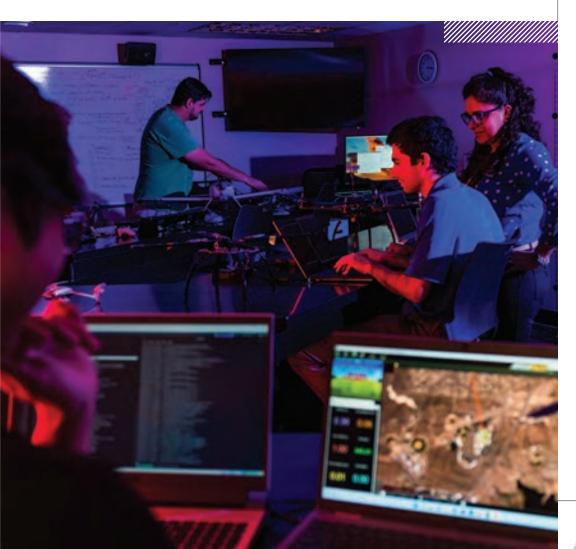
Founded in 2013, the Cyber or "Hacker Lab" enables Embry-Riddle students to meet the challenge of defending against cyberthreats that continue to evolve.

Working in a safe environment, students learn the key intelligence-driven cyber defense approach: "To know your adversary, you must become your adversary."

The Cyber Lab demonstrates how information and systems can be compromised and showcases cyber defense techniques against real-world threats. Students can perform penetrative tests on computer operating systems and applications to develop skills in mitigating real-world vulnerabilities.

Students study and reverse engineer malware to better defend against computer viruses and worms, while learning how to perform forensic examinations of computer systems and networks to capture digital evidence.

Faculty-supported and mentored cyber clubs — including the Cyber Defense Club, the Ethical Hacking Club, the CyberEye, the C-Sec and the Information Security Offensive Research Team — meet in the lab to discuss cybersecurity challenges, practice for upcoming competitions, work on projects or create their own research using various versions of Linux, open-source software tools and the same access control and security software deployed in the industry.





Click Away

Virtual Labs

Embry-Riddle's online students can access two key virtual labs, set up as part of the school's commitment to being a leader in online learning and bringing students experiences that are unlike any other university.

Worldwide Campus students, who are able to learn from wherever they choose, can log into the **Virtual Aerial Robotics Lab**, which allows them to build UAS systems, test flight capability and analyze results from their own computers.

By simulating a flight, students can assess how uncrewed systems perform and redesign the system for optimal results.

The **Virtual Crash Lab** lets students gather and submit data required for accident investigations, including survival factors, human factors, aircraft structures, aircraft systems, operations and maintenance. Through this unique virtual platform, students can examine an aircraft accident scene, document evidence and even interview survivors.



DESIGN BUILD FLY

Embry-Riddle teams master the ABCs of Design, Build, Fly.

In the elite 2022 Design, Build, Fly competition, two groups of Eagle undergrads faced off against 69 other engineering teams from around the nation in a contest to design a medical support aircraft.

The Eagles flew high, with two top-10 finishes, including a historic second-place honor.

Embry-Riddle Aeronautical University students made major impressions with their entries in the 2022 Design, Build, Fly aircraft competition hosted by the American Institute of Aeronautics and Astronautics (AIAA).

The team from the Daytona Beach Campus finished second overall — the best in school history — while the Prescott Campus team finished eighth.

The four-day competition required students to design and produce a medical support aircraft that could transport syringes and deliver vaccine vial packages.



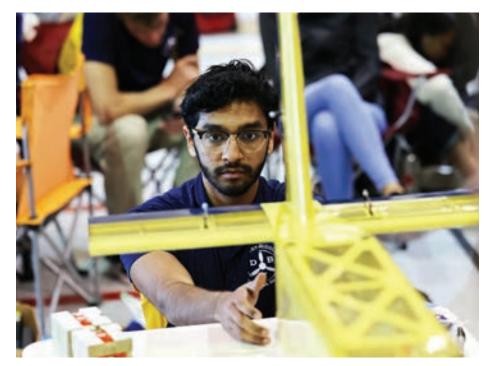


The Daytona Beach team christened its aircraft MULLET, for Medical Unmanned Low-Level Electric Transport. For good luck, several members of the 40-person team rocked mullet haircuts at the competition.

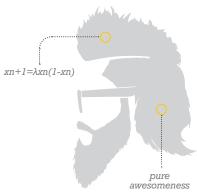
"The annual AIAA competition teaches our students about the essential engineering trade-offs in aircraft design to meet specific flight performance and mission requirements, similar to the actual design problems faced by industry," said Dr. J. Gordon Leishman, distinguished professor of Aerospace Engineering and the Daytona team's faculty advisor. "Design, Build, Fly provides a real-world competitive environment focused on education, practical problem-solving, innovation and teamwork."

"I have contributed to building 10 Embry-Riddle aircraft and was on the engineering design team for this one, so the technical knowledge has been exceptionally rich," said Joseph Ayd ('22), a senior in Aerospace Engineering who led the Daytona Beach squad. "Being the leader of a 40-person engineering team, I have learned so much."















Additionally, the team worked briskly to accelerate their schedule early in the year, flying their first prototype just nine weeks after the requirements were released in September.

"My team put in about 9,000 hours of work," Ayd said.

Another big point of pride for the Daytona Beach team is that more than 50% of its members currently have a full-time job, internship or research opportunity, said Ayd, who was hired in May 2022 by The Boeing Company as an aerodynamic test engineer in St. Louis, Missouri.

"We're really proud of that," Ayd said. "It affirms that what we are doing in this club is developing skills that are critical to working in the industry."

Controller Board The Prescott team, with its top-10 finish, also A compact integrated circuit designed set new standards for gaining the hands-on to govern a specific operation in an embedded experience so vital in today's job market. system, a typical microcontroller includes a processor, memory and input/output (I/O) "The experience the students gain from being involved in this club is invaluable: report writing, presentations, teamwork, communication, project management, hands-on engineering and a lot of applied technical engineering work," said Dr. Johann Dorfling, assistant professor of Aerospace Engineering and the Prescott team's faculty advisor. "Employers really value this type of experience."



BEYOND THE STARS AND THE CLASSROOM

For Bryce Smoldon ('20), a B.S. in Aerospace Engineering graduate, his passion for space and rocketry developed long before attending Embry-Riddle. After participating in a summer rocketry program in middle school and later completing the Washington Aerospace Scholars program, Smoldon was eager to continue his education in and outside the classroom.

Thanks to Embry-Riddle's experienced faculty and the student-led Rocket Development Lab (RDL), Smoldon successfully launched his career as an Aerospace Engineer for the Naval Air Systems Command (NAVAIR) following graduation.

In his role, Smoldon ensures the structural integrity and maintenance instruction of the Bell-Boeing V-22 Osprey, a revolutionary multi-role aircraft yielding the speed and versatility of a helicopter and the space capacity of a cargo plane. However, you can still find Smoldon shooting for the stars.

"Rocketry has been a hobby of mine for 10 years now. Currently, I fly my rockets with a North Carolina chapter of the National Association of Rocketry."



FLY LIKE AN EAGLE

See how far these Eagles have come since their undergraduate days.

"Embry-Riddle prepared me for my current role by teaching me how to think critically and to be a problem solver while working with a team." BRYCE SMOLDON '20



Giving Back to Community

When Chloeleen Mena ('20) received a letter inviting her to visit the Embry-Riddle campus, she didn't know where the university would take her. Looking back on her time in the Electrical Engineering program, Mena is confident becoming an Eagle was the right choice.

"

"I'm the professional I am today thanks to the community I found at Embry-Riddle."

Chloeleen Mena '20 **Electrical Engineering**

Today, Mena elevates her experience as an Electrical Engineer for Northrop Grumman by performing analyses and creating hardware drawings for the Launch and Missile Defense (LMD) T4 Program. During her time as an undergrad, Mena interned with NASA's Jet Propulsion Laboratory, preparing her for her current role.

However, the "community" Mena refers to was found in the Society of Hispanic Professional Engineers, one of 140 student-led organizations available.

As an Embry-Riddle alumna, Mena gives back by continuing her affiliations with engineering societies and sharing her experiences as a professional in the field.



FLY LIKE AN EAGLE

See how far these Eagles have come since their undergraduate days.



LUCK OF THE EAGLES

Embry-Riddle Eagles took to the skies for a month-long study abroad trip to Ireland.

Beginning their adventure in Cork, students also made stops in Galway, Belfast and Dublin, visiting some of Ireland's most famous attractions, such as the Cliffs of Moher, Blarney Castle, Guinness Storehouse and the Jameson distillery. Additional excursions included ghost tours, museums, a boat trip and participating in an Irish sports experience, where students learned and played uniquely Irish sports, such as hurling and Gaelic football.

"A big part of the program is the excursions we go on," said program director and Humanities and Communication associate professor John Lamothe. "That's really the big draw for the students."

Students had the option of taking one to three three-credit general education courses and were graded on a pass/fail basis.

"One of the nice things about this program is that the classes we offer are classes that everybody at the university needs to take," said Lamothe.

In addition to being taught in traditional classrooms on various local university campuses, students had an immersive experience, learning in local coffee shops and bookstores, where they explored Irish crime literature.

Lamothe added, "Half of the value, if not more, of a study abroad program like this is the actual experience of travel, of experiencing new cultures, of challenging themselves to get out on their own."

Jack Frankie with some of the students he taught in Zambia.

Student Becomes Teacher in Zambia

Aviation Business Administration major Jack Frankie's ('25) leadership-based study abroad program in Zambia, Africa, had him teaching math to school-age children, as well as exploring different businesses in the country, complementing the courses he took.

Frankie said his experience in Africa changed how he lives his daily life.

"I live thinking of how I can help people every day."

His free time was spent taking excursions, such as to a game camp where he camped among wildlife, as well as visiting one of the seven natural wonders of the world, Victoria Falls.

"

You go off with your Embry-Riddle professors and students, creating memories and bonds with them and taking them back here to tell those stories. You can't beat it.

Jack Frankie '25
Aviation Business Administration



DAYTONA BEACH

FLORIDA CAMPUS

Our East Coast campus is only minutes from the beach and adjacent to an international airport and speedway.

CAMPUS PROFILE

- > 7,000 Undergraduate Students
- ► 50 States / 91 Countries Represented
- ► 11% International Students

Student Clubs + Organizations

Our Florida campus houses hundreds of student clubs, including the Mars Society, Musicians Club, Muscle Car Association and Microgravity Club, as well as club, intramural and recreational sports.

Athletics

Women's

- Baskethall
- Cross Country
- ► Golf
- Lacrosse
- Rowing
- Soccer
- Softball
- ► Tennis
- ► Track & Field
- Volleyball

Coed

Cheerleading

- Men's
- Basehall
- Basketball
- Cross Country
- ► Golf
- Lacrosse
- Rowing
- Soccer
- ► Tennis
- Track & Field



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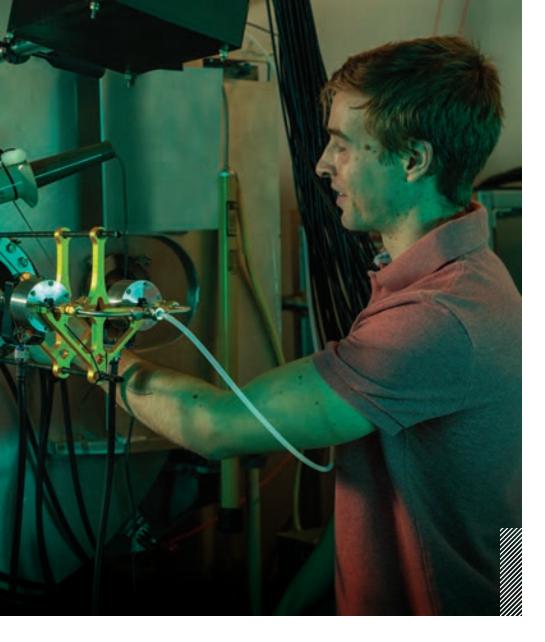


The opportunity to conduct research at the undergraduate level offers Embry-Riddle students invaluable experience that has the potential to be career changing. Involvement in research that encompasses effectively producing a safe, environmentally friendly and renewable power source using nuclear fusion has the potential to be world-changing.

Thanks to a grant from the U.S. Department of Energy (DOE), a team of faculty and students are working on technology that can help facilitate the production of fusion energy. Fusion naturally occurs in the sun and other stars. Initiating fusion on Earth involves generating plasma, or gases so hot that ions can fuse together. Over the next five years, the team will investigate the technology used to heat the ions in plasma using natural sources from plasma without relying on expensive and external heating sources.

"If successful, this method can help accelerate the commercialization of cost-effective fusion devices," said Dr. Byonghoon Seo, the project's principal investigator and professor in the department of physical sciences.

With this research, "we come closer to understanding how we can use plasma to produce nuclear fusion," said Connor Castleberry, a junior in Space Physics and Computational Mathematics who is involved in the project. "If perfected, it would be a safe, environmentally friendly and renewable power source."



The team also includes Aerospace Engineering senior Christopher Lamb ('23). Before completing their undergraduate degrees, these students are already playing critical roles in the future of further understanding fusion energy.

"[Embry-Riddle] put me in the right environment to succeed as an engineer," explained Lamb. "The reason I've pursued research is to have the most positive impact on society possible."



Scan here and see the plasma created in Space and Atmospheric Instrumentation Laboratory.

Since the Spring 2022 semester, Lamb has worked closely with Dr. Seo to assemble the plasma accelerator necessary to convert energy and to eject a plasma jet. Since then, the duo has also dedicated their time to building an instrument called the B-dot probe, which measures magnetic fields created from such transfers of energy.

Following their undergraduate degrees, both Lamb and Castleberry plan to advance their education by pursuing doctorates in Engineering Physics at the Daytona Beach Campus. Whether faculty-led, through collaborative partnerships or motivated by students, Embry-Riddle is committed to providing students with research opportunities.

Road Trip, anyone?

What are your plans for the weekend? What about a road trip with your friends to snap-worthy attractions, views or unforgettable experiences - some within an hour of campus? Take a drive around central Florida to experience nearby fun you're sure to enjoy!





'Comet" to Space Discovery Kennedy Space Center Cape Canaveral, Florida (60 min.)

Artwork: Bella Memeo '24



Awarding Excellence

Congratulations to Juan Ortiz Couder ('19, '21, '25) for being named the Sunshine State Conference's (SSC) Male Scholar-Athlete of the Year for 2021-22.

This recognition is the latest awarded to Ortiz Couder, who also earned the ITA/ NCAA II Senior Player of the Year, First Team Academic All-America Honors and closed the 2022 season ranking fifth nationally.

His success on the court is just the beginning. While achieving athletic accolades, he earned a bachelor's in Software Engineering, his master's degree in the same discipline and is currently pursuing a Ph.D. in Electrical Engineering and Computer Science. Ortiz Couder credits his success to supportive family, coaches, teammates and professors at Embry-Riddle.

"

I love competition, and I'm very proud of being an Eagle. If you enjoy competing and defending while doing something you enjoy, it's a great mix."

Juan Ortiz Couder '19,'21,'25 Software Engineering **Electrical Engineering and** Computer Science



CHANGING THE GAME

All-female maintenance tech team impresses in competition

For the first time ever, Embry-Riddle Aeronautical University sent an all-female team to the worldwide Aerospace Maintenance Competition as the university continues its quest to open additional aerospace opportunities for underrepresented populations - such as women in aviation maintenance.

"Only 2.6% of maintenance technicians in the nation are women - that's the smallest percentage of women in the entire aviation workforce," said Aviation Maintenance Science Assistant Professor Cristin Klaus, who serves as the team's faculty advisor. "Having an all-female team represent Embry-Riddle is an enormous accomplishment for the university and paves the way for changing the face of aviation maintenance through diversity."

The all-female Embry-Riddle team was sponsored by Pratt & Whitney and came home with the United Airlines Competing with Professionalism team award.

Team members also toured the facilities of major companies, such as Airbus, Bombardier and Delta Air Lines.

"A lot of students do not know what they want to do once they graduate, and so I wanted to change the club to become geared toward helping students find their passions," said team member Tea Galon ('22), who also serves as president of the Society of Aerospace Technicians, a campus group that helps students make connections within the aerospace industry.

Passion, she added, is at the heart of this team's involvement in the competition.

For those interested in aviation maintenance, there has arguably never been a better time to break into the industry, according to Klaus.

The Boeing Pilot and Technician Outlook projects a need for 132,000 new maintenance technicians by 2040 - that's greater than the projected need for pilots in the same timeframe. The rise of commercial space has also contributed to that figure, as those trained in aviation maintenance can often bridge the gap and work on rockets and spacecraft.



NEXT LEVEL FITNESS

For students who work hard, fitness and fun are key to life balance. That's why Embry-Riddle broke ground in the Spring of 2021 on an expanded fitness complex.

After opening this summer, the complex, Fraternity and Sorority Life and the Student Government Association (SGA) welcomed the 2022 Fall semester with a week full of activities, including a pool party and wellness expo for new and returning students, faculty and staff.

"Our goal was to create a modern and cross-functional environment to encourage and educate a wider audience on personal fitness and well-being," said Director of Embry-Riddle's Fitness and Wellness Center, Greta LeDoyen. "Over the next year, we plan to focus on students' needs and how they use the new facility."

The facility encourages mental wellness and community, as well. New group fitness classes motivate participants at all levels to get involved, while student clubs and organizations are already utilizing facility resources. Consider learning Brazilian Jiu-Jitsu with the Martial Arts Self-Defense Club, find your rhythm with the Embry-Riddle Dancing Eagles or achieve new gains with the Bodybuilding Club and many more.

According to LeDoyen, "It takes one day of stepping in and trying something new to start improving your well-being."

VISITORS CAN NOW ENJOY

- ► Updated cardio and strength training equipment
- ► 36-foot-tall rock-climbing tower and bouldering wall
- ► 15.5-foot-deep resort-style pool with climate-controlled temperatures
- ► Functional training turf and stairs
- ► Three group fitness studios
- Swimming laps or testing robotic and marine research projects



This club is 'chalking-up' fun and community.

There's only one major requirement to participate in the ERAU Rock Climbing Club: "Be willing to try," said the club's president, Anthony Pipitone ('25), who's double majoring in Space Physics and Astronomy & Astrophysics.

With the addition of the new rock-climbing amenities on campus, students are invited to attend the club's daily climbing sessions during the Fall and Spring semesters to expand the climbing community.

Registered members also gain access to club gear, opportunities to climb off campus at nearby rock-climbing facilities and outdoor climbing excursions as a club.

ROCK CLIMBING CLUB



Has more than 20 members from a variety of degree programs.

Began in 2017 and originally met at DynoClimb, a local climbing facility 30 minutes away from Campus in DeLand.

Looks forward to creating a collegiate rock-climbing team in the future.

"Experience isn't necessary to join," said Josh Thyn ('25), an Aviation Maintenance Science major and club treasurer.

PRESCOTT

ARIZONA CAMPUS

Nestled in the beautiful Bradshaw Mountains between Phoenix and the Grand Canyon, our Western campus is renowned for its excellent seasonal weather and outdoor activities such as skiing, hiking, mountain biking, kayaking and rock climbing, to name just a few.

CAMPUS PROFILE

- > 3,000 Undergraduate Students
- ► 50 States / 49 Countries Represented
- ► 11% International Students

Student Clubs + Organizations

Our Arizona campus is home to countless student clubs ranging from the Mountain Biking Club to the Society of Women **Engineers and from the Blue Eagles** Skydiving Team to the Brotherhood of Steel, as well as a variety of intramural and recreational sports.

Athletics

Women's

- Basketball
- Cross Country
- ► Golf
- Outdoor Track
- Soccer
- Softball
- Volleyball

Men's

- Baseball
- Basketball
- Cross Country
- ► Golf
- Outdoor Track
- Soccer
- Wrestling



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For the 14th time in campus history and for the second consecutive year, the Golden Eagles Flight Team at Embry-Riddle's Prescott Campus took home the title in the NIFA SAFECON national championship.

The 34-member Golden Eagles beat out 27 other university teams, comprised of nearly 500 students from across the country, to win first place. In total, Embry-Riddle placed in 18 events, including eight No. 1 finishes.

"Coaching the Golden Eagles Flight Team is my dream job," said Head Coach Shaun Shephard, who led the team in both of its last two national title bids. "I get to coach and teach the best of the best."

Earlier in the spring semester, the team also competed in the NIFA SAFECON regional flight competition, winning its 37th championship there. That event was part of a "sprint," Shephard said, noting that the team was away from campus competing for six of the 20 weeks leading up to nationals and had to balance those external events with ongoing training exercises and their usual coursework.

Still, the team produced plenty of standout performances:

- In his first year on the team, Rasheed Adamu won an individual national championship in Aircraft Recognition. "Unheard of," Shephard said.
- Jamie Gallagher earned a perfect score in Computer Accuracy.
- Camden Dellar won the Preflight event, marking the first time the Golden Eagles have won in that category.
- And Hayden Morse achieved one of the most difficult feats of the competition: He competed in two separate events requiring entirely different skill sets — Short Field Landings and Power-Off Landings and he won them both.

"Every day, I ask the team to be golden, be the best at what you do every day, every time and have no regrets," Shephard said. "We won this championship as a T.E.A.M.: Together Everyone Achieves More. I could not be any happier and am still speechless."

Competing in the event also helps graduates kickstart their careers, said outgoing Team Captain Doug Niemela.

"I landed my first airline job thanks in large part to my experiences with the Golden Eagles," he said. "It is a highly competitive, team-oriented organization that allows for tremendous personal growth in technical as well as leadership skills. All of our teammates will go on to find future success in the workplace because this is an organization where a smiling face and hard work ethic will take you far."

GOLDEN EAGLES / WELL RANKED

- Aircraft Preflight Inspection No. 1 - Camden Deller
- ► Aircraft Recognition
 No. 1 Rasheed Adamu
- Computer Accuracy No. 1 - Jamie Gallagher
- ► Top Pilot No. 2 - Hayden Morse
- ► Top Scoring Participant No. 2 – Hayden Morse
- Regional Top Pilot
 Region 2 Douglas Niemela
 Region 8 James Hanover
- Outstanding Team Member No. 2 - Gabriel Witt
- Certified Flight Instructor No. 2 - Anna Scott
- ► Unlimited Navigation
 No. 1 Gabriel Witt and George Fiscu

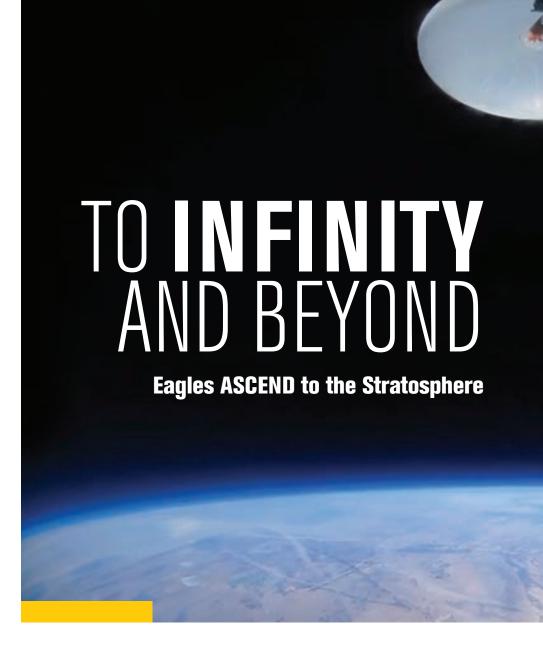
Historic Softball Season a Huge Hit

The best season in the history of Embry-Riddle softball ended when the Eagles, ranked No. 24 and the reigning Cal Pac Champions, lost an elimination game to No. 8 Southern Oregon.

During the year, the Eagles set program records for wins, conference wins and winning percentage. The team also had its share of individual standouts, including senior Danielle Jamieson, who won the Dr. Jim Davies Award as the women's recipient of the California Pacific Conference's Scholar-Athlete of the Year.

Mikaeli Davidson, a senior who was the Cal Pac Player of the Year, also earned the CoSIDA NAIA Academic-All American Team Member of the Year award, while freshman Vanessa Brink was named the Cal Pac Pitcher of the Year and became the first Eagle freshman to win All-American Honorable Mention by the NAIA.





Last November, Eagles gained access to hands-on opportunities that few university students can add to their resumes: building and launching their own payloads into space.

That's precisely what Embry-Riddle's
Aerospace STEM Challenges to Educate
New Discoverers (ASCEND) team did, aided
by funding from the NASA Space Grant and
in collaboration with Arizona Near Space
Research as well as the Arizona Space
Grant Consortium.

ASCEND is comprised of students from various majors collaborating under the guidance of an experienced faculty mentor. With the freedom to choose a different research focus each semester, students gain practical engineering experience through a project that is entirely their own.

After a successful Spring '21 semester investigating heat transfer and how temperature changes during a payload's flight, last fall's undergraduate researchers set a new goal: to stream live video of the payload as it embarked on a 100,000-foot journey to the stratosphere.

The team designed multiple printed circuit boards (PCBs) to connect equipment and a ground station to receive the streaming data — experience that electrical engineering senior Nicodemus Phaklides says he wouldn't have gotten without ASCEND.

On November 20, 2021, the team held their breath and let their balloon fly on its ascent to the edge of space.



"It was hard to contain our excitement once we finally got our payload back and watched the ethereal footage from near space," Phaklides said. "Surely, there are hundreds of these balloon videos out there, but this one was ours - the result of months of work and that made it more worthwhile."

Previous groups have used high-altitude balloon payloads to conduct research on solar panels, neutral buoyancy and even solar eclipses.

"The ideas behind the ASCEND projects are usually simple in concept," said Dr. Douglas Isenberg, associate professor of Mechanical Engineering and the team's former co-mentor. "However, it is the reality that nothing is ever built to infinite precision, and this tends to make simple things a lot more difficult."

ASCEND's future brings together new team members, new faculty mentor Dr. Yabin Liao and new research. Their goal is to build on the team's prior success and refine the ground-based system to gather more data from their payload while once again ascending to the stratosphere.

"That's true engineering," said Isenberg. "The ASCEND program has served as a fantastic platform for students to get this experience."



Scan here to take the 100,000-foot journey into the stratosphere aboard the ASCEND payload.

Explore Arizona

Arizona is rich in history, culture, nature and fun, all just a road trip away from Prescott. Whether you like to hike, bike, swim or kayak, you'll never run out of outdoor fun. Check out the most haunted town in Arizona, the beauty of Sedona and 900-year-old Sinagua-built cliffside architecture.





















Artwork: Bella Memeo '24

WORLDWIDE

ONLINE CAMPUS

Earn your degree on your terms, your schedule and from anywhere in the world through one of the nation's top online bachelor's programs.

CAMPUS PROFILE

- ► 15,000 Undergraduate Students
- ► 50 States / 150 Countries Represented
- ► 10 Start Terms Per Year for **Online Programs**

Online Classes

- Students complete assignments, join discussions, study and ask questions on their own schedule.
- Courses are divided into nine week-long modules.
- ► Classwork takes eight to 12 hours per week.
- Students manage their time and resources while earning their degrees.
- Faculty members use technology and gamification to enhance the learning experience.
- ► Completing a degree online can save money on tuition, fees, transportation and housing costs.



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REWRITING HERSTORY

Worldwide student Jamie Helander's internship with the Smithsonian's American Women's History Initiative (AWHI) helped amplify women's voices to provide a more accurate picture of American history.

Jamie Helander ('21, '23) wants to be an

advocate for change in everything she does. From creating a nonprofit to

help smaller aviation nonprofits support youth education programming to getting involved with diversity, equity and inclusion in the transportation industry, she sees the future as more representative of the world we live in.

People-focused culture is what all facets of transportation need to absorb into company and industry culture right now to attract the next generation of the workforce.

Helander was selected for the Smithsonian's AWHI's Because of Her Story internship, which focused on telling previously untold stories of American women who have yet to be heard, creating a more factual account of our nation's history.

Helander's first project was a virtual, social media-based day commemorating Dr. Sally Ride's historic spaceflight, as well as the women who were influenced by her.

"We encouraged people to share how Sally Ride inspired them, and we got these amazing stories," she said.

Helander enjoyed designated intern days where she and her colleagues would read thought-provoking articles and share their thoughts with one another. She also appreciated the panel discussions with high-ranking employees on diverse topics.

"It enriched the experience to not only understand women's history but also what we could do to help right now," she said.

Additional internship projects included gathering strategies and best practices to create a 20-page educator's guide on engaging girls in STEM education. She also did extensive research on relatively unknown women in aviation and aerospace and created Wikipedia pages for them.

"The Because of Her Story program is all about sharing the inspirational stories of women who have made an impact but have never been found out about," said Helander.

She stressed the importance of having mentors depending on the specific area of life you need help in and expressed her deep appreciation for her mentors at AWHI for reminding her of who she is.

"They completely changed my life," she praised.
"I came in not the same Jamie I came out.
I owe so much of me to them."

After graduating with her Bachelor of Science in Aeronautics, Helander began her master's in Aviation and Aerospace Sustainability and now works as a transportation industry analyst for the Federal Railroad Administration. She knows her Embry-Riddle degree and internship experience helped her land her new position.



INVESTING IN MYSELF

While in the U.S. Air Force, now-veteran Corey Goodnight ('21, '23) had heard of Embry-Riddle's reputation in the aviation world and wanted to be a part of it. In 2017, he enrolled as a Worldwide student to obtain a B.S. in Technical Management. He landed on a focus in aviation management due to the variety of applications in the workforce. He credits his counselors with helping him choose the best program to match his career goals.

"I could not have asked for a better experience as an online student," he says, noting his professors' support and willingness to help students succeed.

But his time at Embry-Riddle wasn't over yet -Goodnight chose to further his education and challenge himself academically by pursuing his Master of Science in Management. Because he completed his B.S. while serving in the Air Force, he is able to use his G.I. Bill® benefits for graduate school.

Goodnight is currently working as an operations specialist at Blue Grass Airport (LEX) in Lexington, Kentucky. He says his time working in airport operations and management has opened many doors to opportunities for professional development. The strategic decision-making and organizational development concepts that he has learned about in his classes translate into his work as he manages the flow of operations at the airport in real time.

He is proud of himself and his life achievements thus far. "I have done many things both academically and in my career that my past self would have never guessed I would have the opportunity to accomplish."

Find Your People: Worldwide Clubs

Worldwide students can link with like-minded peers via clubs, including the Fun Math Society, Peloton Users, Eagles in Service, Kenyan Club, Worldwide Pride LGBTQIA+, Astronomy Club and Revolutionary Aerospace Systems Concepts Academic Linkage (RASC-AL) Group.

In addition, students can make life-long connections via The Society for Human Resources Management, The American Society of Engineering Management (ASEM) and Alpha Sigma Lambda Honor Society.

More student groups are in the works, and any group of students can come together to form a club devoted to their favorite shared interest!

GOING **ALL IN ON AVIATION**

Being in the U.S. Air Force and attending Embry-Riddle has shaped Jon France ('22, '25) into a well-rounded aviator.

France is currently training with the Air Force to pilot unmanned aircraft. While he also enjoys manned flight, France points out the unique freedoms that come with unmanned.

"You can literally fly anywhere in the world and then go home and have dinner with friends or family," he said.

After earning his bachelor's degree this past year, he's furthering his education and skills through Embry-Riddle's M.S. in Aviation and Aerospace Sustainability program.

"I'm genuinely curious about the sustainability of fossil fuels in aviation," said France. "As far as space travel goes, we are familiar with the concept of ion thrusters, but they're not feasible for how fast we want to travel."

Juggling his studies with two jobs and his military extension program was not easy, but online classes through Embry-Riddle Worldwide made it possible, thanks to their flexibility and convenience. France shared he prefers in-person classes for the social aspect and networking purposes, which Worldwide offers as well. He's even completed coursework through in-person classes at satellite campus locations in Southern California.

To any aspiring aviators, he offers this: "The more aviation knowledge you have, the more you're going to love the world of aviation."



Engineered for Success

Embry-Riddle Worldwide's B.S. in Engineering program is now **ABET** accredited!

Engineering (Bachelor of Science) is accredited by the Engineering Accreditation Commission of ABET abet.org.

This accreditation means students can be confident that the quality of the program meets global standards. Our program is one of only a handful of ABET-accredited programs that are offered 100% online.

Graduating from an ABET-accredited program can open doors beyond graduation, as it is often a requirement for several professional licenses and certifications. We are happy to hold this accreditation and offer its benefits to our students.

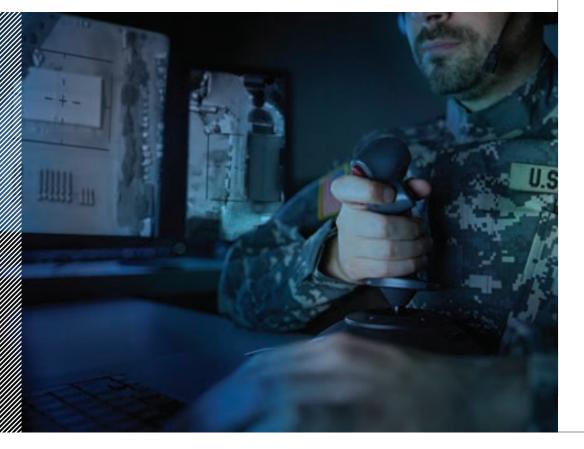


Our online engineering program is continuing its growth and compounding the value and opportunities we can offer to our students."

Ken Witcher, Ph.D. Dean, Worldwide College of Aviation



Engineering Accreditation Commission





Florida Campus Worldwide / Online Campus 1 Aerospace Boulevard | Daytona Beach, FL 32114

Arizona Campus 3700 Willow Creek Road | Prescott, AZ 86301

NEXT STEPS

HOW TO APPLY

Submit the following:

- Application: erau.edu/apply
- Official high school and/or college transcript or GED scores
- ACT and/or SAT scores (recommended)
- \$50 nonrefundable application fee

Please note: Additional documents may be required of specific audiences.

 We evaluate applications on a continuous basis. Once all documents have been received, we will notify you of your admission status.

Based on the quality of our programs and the exciting and growing industries we serve, Embry-Riddle degrees are in high demand. Some of our programs may have limited capacity, and we encourage you to check the website or contact one of our admissions counselors for updates.

■SE Apply Today!

SCHOLARSHIPS

Every student applying for admission is automatically considered for scholarships.

Scholarships:

- Are based on a student's grade point average and test scores, if submitted.
- Do not have to be repaid.
- Are sometimes need-based and require a FAFSA be submitted.

FINANCIAL AID

94% of Embry-Riddle freshmen receive some form of financial aid through scholarships, grants and loans.

To apply for need-based financial aid:

- Fill out the Free Application for Federal Student Aid (FAFSA) at fafsa.gov. It is available October 1 of the year before you intend to start college.
- Include Embry-Riddle's federal school code on the FAFSA: 001479.

The FAFSA is the first step in receiving additional aid. Notification of your complete financial aid package will arrive after you submit your FAFSA form. Federal and state financial aid programs are available to U.S. citizens or permanent residents who qualify.

COME VISIT

A visit to our residential campuses in Daytona Beach, Florida, and Prescott, Arizona, lasts about three hours and includes:

- Walking tour of campus.
- Meeting with admissions staff and getting answers to your admissions questions.

Register online, where you can customize your visit experience and view a schedule of available tour times. You may also request to sit in on a class or to meet with a professor, a financial aid advisor or an ROTC representative.

CONTACT US

Schedule your visit and learn more about Embry-Riddle.

Florida Campus | Daytona Beach daytonabeach@erau.edu 386,226,6100 / 800,862,2416

Arizona Campus | Prescott prescott@erau.edu 928,777,6600 / 800,888,3728

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