The University Advantage

As an Aerospace student at the University of North Dakota, you not only receive the finest education available, you’re attending a highly respected university. That means your degree program will prepare you for your life – and your career.
Situated on a beautifully wooded 550-acre campus, the University of North Dakota offers students a variety of academic, social, and extra-curricular opportunities. A University Village adjacent to campus includes shopping, restaurants, a student wellness center, and athletic facilities second to none. With a population of 98,000, the surrounding Greater Grand Forks area is a thriving cultural and retail center. Theatres, parks, art galleries, museums, nightlife, sporting events and concerts provide students with plenty of entertainment both on and off campus.
Among the most comprehensive collegiate programs, the John D. Odegard School of Aerospace Sciences is recognized around the world for academic excellence. Since 1968, our mission has been to shape the future of the aerospace industry by providing the best possible education and training available. Our students go on to chart their own successful career paths on the way to becoming tomorrow’s industry leaders. Our faculty’s firsthand knowledge in each and every field in the aerospace industry, coupled with a professional, innovative and caring approach to teaching, sets them apart. Undergraduate and graduate programs leading to a variety of rewarding careers in aerospace are offered through five different academic departments:

**Atmospheric Sciences / Aviation / Computer Science / Earth System Science and Policy / Space Studies**
UND’s Department of Atmospheric Sciences has unique research and teaching facilities that offer students rare opportunities to gain hands-on training. Specializing in the study and research of our planet’s delicate environment, the department partners with the National Weather Service in Grand Forks to provide students with real world experiences that will better prepare them for future careers. The department has a dual-polarization Doppler weather radar, a ground research facility for atmospheric and hydrologic research, and an instrumented research jet aircraft. The department is also affiliated with the campus television studio, which provides students with experience in broadcast meteorology. Atmospheric Science graduates are employed in weather forecasting, broadcast meteorology, private sector meteorology, academia and atmospheric research.

**DEGREES**

**B.S. in Atmospheric Sciences** / prepares students for careers in government, industry and broadcasting. This rigorous program provides a strong foundation in the basic physical sciences, advanced study in atmospheric processes and research opportunities.

**M.S. in Atmospheric Sciences** / serves students who are interested in continuing graduate studies at the doctoral level as well as those seeking advanced knowledge from professional work in the atmospheric sciences in general.

**Ph.D. in Atmospheric Sciences** / prepares students for leadership roles in academia, government, and private industry in the field of atmospheric sciences by enabling graduates to fill critical roles in leading research efforts, guiding science policy, educating future scientists, and creating opportunities in private industry.
AVIATION

From the most technologically advanced simulators to the world's largest collegiate aircraft training fleet, UND aviation students receive a rigorous educational experience. Students engage in majors of Aviation/ Airport/Technology Management, Professional Flight, Unmanned Aircraft System Operations, and Air Traffic Control all supported by a well-rounded liberal arts education at their core. An aggressive placement program includes thousands of alumni who serve as a valuable networking resource. UND graduates fly for every major U.S. airline, manage airports around the country, fly and manage unmanned aircraft systems, work as air traffic control specialists, and work for corporate flight departments, aircraft manufacturers, NASA and the FAA. The Department of Aviation is highly respected by the aviation industry and attributes much of its success to the quality of the program and the program's graduates.

Flight
All flight course requirements can be fulfilled by utilizing either fixed-wing or helicopter aircraft.

Research
The research being conducted by the Department of Aviation involves both undergraduate and graduate students as research assistants. In addition, many undergraduate students are utilized in the gathering of data for this research. The research being conducted includes various areas within unmanned aircraft systems (UAS), aviation safety applications in general aviation and various technology applications within aviation.

DEGREES /

B.B.A. in Airport Management / places more emphasis on the management and operation of ground activities crucial to the industry.

B.B.A. in Aviation Management / prepares students for a career in airline operation and management as well as other airside activities within the industry.

B.S. in Aeronautics: Commercial Aviation / prepares students for a professional pilot career with broad-based aviation courses and the comprehensive pilot training curriculum.

B.S. in Aeronautics: Air Traffic Control / designed to place students directly into ATC careers in the FAA. The air traffic control simulation labs include a 32-position, voice recognition ATCoach radar system, a 225° MaxSim tower system, a 360° MaxSim tower radar simulator, and 32 additional radar simulators.

B.S. in Aeronautics: Aviation Technology Management / allows students with technical education in aviation maintenance, avionics, electronics, dispatch or other support services to complete a bachelor's degree with an emphasis on management.

B.S. in Aeronautics: Flight Education / prepares students who wish to pursue a career as an aviation educator or professional pilot.

B.S. in Aeronautics: Unmanned Aircraft System Operations / prepares students for a career in the rapidly growing field of unmanned aircraft systems. This sector of the aviation industry utilizes both large and small aircraft flown remotely for military, law enforcement and commercial uses.

M.S. in Aviation / provides the necessary educational background for aviation industry professionals to solve problems within the aviation field, including airlines, corporate aviation, general aviation, and airport management.
COMPUTER SCIENCE

Students in computer science prepare for a variety of careers in this rapidly evolving technological environment—from theoretical problem solving to practical applications for science and business. The computer science facilities include PCs, a high-performance computing cluster, and distinguished faculty who are experts in everything from computer graphics to artificial intelligence.

The Department of Computer Science emphasizes the practical application of computer science and engages undergraduate and graduate students in research and development projects. Graduates choose from careers in system programming, software development, hardware design, and application programming among others. National companies such as IBM, Rockwell/Collins, Microsoft, and Digi-Key frequently recruit UND students.

DEGREES /

B.A. in Computer Science / recommended for students seeking a broader-based liberal arts education. The flexible curriculum includes humanities courses in place of some of the science and mathematics requirements.

B.S. in Computer Science / designed for students who intend to pursue graduate studies or a career involving the technical and scientific applications of computing. The curriculum emphasizes the mathematical and scientific aspects of this dynamic science.

M.S. in Computer Science / prepares students for leadership roles in the high-technology industry. Research areas include artificial intelligence, software engineering, computer graphics, internet technology, networks and operating systems, and simulation.

Ph.D. in Scientific Computing / prepares students for research roles in any branch (bioinformatics, computational science, software design, etc.) of computational science.
Humanity is changing the world faster than it understands the consequences. Most of the changes have occurred in the last century – we have transformed the land, modified the chemical composition of the atmosphere, and have used more than half of the available fresh water. Understanding, protecting, and restoring our environment to meet the immense challenges that lie ahead requires a new way of thinking and a new kind of education. The Department of Earth System Science and Policy provides an integrated and creative learning environment that fosters intellectual growth, critical thinking, and practical engagement in research and management of the Earth system and resources. The heart of the program is built around the new field of science and sustainability, defined as meeting human values and needs while preserving our planet’s life-support systems.

*Earth Image Credit: NASA
The all-encompassing nature of space exploration requires people who possess broad backgrounds that link science, engineering, policy, business and law. The Department of Space Studies seeks to train these vital segments of the space community by integrating, rather than separating, traditional disciplines related to space through its programs. Faculty expertise is drawn from disciplines such as planetary science, astronomy, remote sensing, public policy law, business, history, management, engineering, life support, and human factors.

The next generation of space program decision-makers will need the expertise provided by our programs to oversee future space achievements. National space agencies and commercial, military and educational segments of the space enterprise employ Space Studies graduates who are well prepared to participate, lead and guide space exploration and the development of space activities.

**DEGREES**

**M.S. in Space Studies** / available on campus or via the Internet, this degree program combines studies in space physical science, space life science, space engineering, space policy and law, space business and economics, and space history. Space Studies facilities include lab space for the investigation of terrestrial rocks and meteorites, reduction and analysis of terrestrial remote sensing and planetary reflectance spectral data, research into life support technologies and human factors in space, and an astronomical observatory. Space Studies is also home to an Internet controlled observatory, the Human Spaceflight Lab and the Spacecraft Simulator Facility. Students enjoy hands-on experiences, preparing them for exciting opportunities in the space industry.

**Ph.D. in Aerospace Sciences** / in conjunction with the Department of Aviation, the mission of the Aerospace Sciences PhD program is to provide interdisciplinary teaching and research at the highest academic level. The program’s goal is to provide highly educated scholars and leaders with the skills necessary to mix technology and science with an understanding of the politics and economics of the aerospace fields.
UND Aerospace Foundation / Through the UND Aerospace Foundation, UND has contracted with airlines and government agencies from Europe, Asia, and the Middle East, providing ab initio training for air traffic controllers, fixed-wing and helicopter pilots. Alliances with business and corporations bring additional resources and give our students unique opportunities for internships, job placement and networking. The foundation also operates flight training centers in conjunction with Chandler-Gilbert Community College in Mesa, Arizona and with the University of Minnesota Crookston in Crookston, Minnesota.

Alumni Relations / The John D. Odegard School of Aerospace Sciences recognizes the importance of its alumni throughout the industry and the value their experience can provide to current students, faculty, and staff. The Odegard School hosts events throughout the year and across the country to facilitate alumni engagement with the School and networking opportunities. For more details regarding alumni relations or how you can support the Odegard School, please contact the Office of Student and Alumni Services at 1.800.258.1525.

Certified Flight Instructor / Earn credits as you learn the responsibilities and teaching requirements of being a Certified Flight Instructor (CFI). This program can lead to a full-time position at UND flight operations as a flight instructor.

Physiology Training – Altitude Chamber Operations / Physiology training courses integrate classroom instruction with altitude chamber flights and spatial disorientation simulations. Particular attention is paid to such hazards as lack of oxygen, the effects of trapped gases, decompression sickness and the effects of loss of cabin pressurization. Participants experience altitude chamber hypoxia demonstrations at 25,000 and 18,000 feet followed by a rapid decompression flight. Representatives from more than 130 corporations worldwide have attended our physiology training.

Safety Program / Aviation safety is a core value at UND. The Odegard School’s incredible safety record over the decades is not by chance. The program has instituted over ten specific safety initiatives which are directly responsible for the enviable safety record. The new fixed-wing, single-engine primary training aircraft all have state of the art glass cockpits with ADS-B avionics, AMSAFE airbag/seatbelts, and special ordered skylight windows for added visibility. The program also includes an active 19-member safety council, a Flight Data Monitoring (FDM) program, a Flight Operations Quality Assurance program, an online Safety Reporting System, and one of the few FAA Safety Management System Pilot Programs in the United States.