AVIATION SCIENCE - PH.D.

College of Aeronautics and Engineering
School of Aeronautics
www.kent.edu/aeronautics

PROGRAM IS PENDING APPROVAL FROM the ohio department of higher education. AFTER THAT FINAL APPROVAL, PROSPECTIVE STUDENTS MAY APPLY FOR ADMISSION.

About This Program

The Ph.D. in Aviation Science at Kent State University prepares students to become scholars, researchers and leaders who advance knowledge across the aviation and aerospace fields. This interdisciplinary, research-intensive program integrates aviation safety, human performance, unmanned aircraft systems, advanced air mobility, aviation operations, management, law and policy. Students engage in advanced coursework, research methods, scholarly seminars and original dissertation research supported by Kent State's UAS laboratories, advanced flight simulators and AAM infrastructure planning tools. Graduates are prepared to lead interdisciplinary research; inform aviation policy and practice; and contribute to innovation in academia, industry and government at regional, national and global levels. Read more...

Contact Information

- CAEgraduatestudies@kent.edu | 330-672-2892
- Connect with an Admissions Counselor

Program Delivery

- **Delivery:**
  - Mostly online
- **Location:**
  - Kent Campus

Examples of Possible Careers and Salaries*

Postsecondary teachers, all other

- 1.8% slower than the average
- 183,400 number of jobs
- $78,490 potential earnings

Education administrators, postsecondary

- 1.7% slower than the average
- 226,600 number of jobs
- $103,960 potential earnings

Management analysts

- 8.8% much faster than the average
- 1,075,100 number of jobs
- $101,190 potential earnings

Operations research analysts

- 21.5% much faster than the average
- 112,100 number of jobs
- $91,290 potential earnings

Occupational health and safety specialists

- 12.5% much faster than the average
- 131,900 number of jobs
- $83,910 potential earnings

Aerospace engineers

- 6.1% faster than the average
- 71,600 number of jobs
- $134,830 potential earnings

Health and safety engineers, except mining safety engineers and inspectors

- 4.4% about as fast as the average
- 23,800 number of jobs
- $109,660 potential earnings

Additional careers

- Aviation science or aeronautics faculty members
- Aviation program directors
- UAS policy and systems analysts
- Aerospace systems analysts
- Aviation and transportation policy analysts
- Aviation operations research analysts
- Aviation human factors researchers
- Aviation safety researchers
- Advanced air mobility researchers

* Source of occupation titles and labor data comes from the U.S. Bureau of Labor Statistics' Occupational Outlook Handbook. Data comprises projected percent change in employment over the next 10 years; nation-wide employment numbers; and the yearly median wage at which half of the workers in the occupation earned more than that amount and half earned less.

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For more information about graduate admissions, visit the graduate admission website. For more information on international admissions, visit the international admission website.

Admission Requirements

- Bachelor's degree in aviation, engineering or a related discipline from an accredited college or university
- Minimum 2.750 undergraduate GPA on a 4.000-point scale
- Official transcript(s)
- Goal statement
- Three letters of recommendation
- English language proficiency - all international students must provide proof of English language proficiency (unless they meet specific exceptions to waive) by earning one of the following:[1]

- Minimum 79 TOEFL iBT score
- Minimum 6.5 IELTS score
- Minimum 58 PTE score
- Minimum 110 DET score

[1] International applicants who do not meet the above test scores may be considered for conditional admission.

Application Deadlines

- **Fall Semester**
  - Application deadline: March 1
    All application materials (including applicable fee, transcripts, recommendation letters, etc.) submitted after this deadline will be considered on a space-available basis.
- **Spring Semester**
  - Rolling admissions

Program Requirements

Major Requirements

Code	Title	Credit Hours
Major Requirements		
AERN 75135	AVIATION SAFETY THEORY	3
AERN 75250	AVIATION LAW	3
AERN 75791	AVIATION SECURITY AND POLICY SEMINAR	3
AERN 85087	AVIATION FUTURES: SAFETY, SYSTEMS AND SOCIETY	2
BA 74037	ADVANCED DATA MINING AND PREDICTIVE ANALYTICS	3
POL 70003	QUANTITATIVE METHODS I	3
POL 70004	QUANTITATIVE METHODS II	3
POL 70010	QUALITATIVE RESEARCH METHODS	3
or RMS 85516	QUALITATIVE RESEARCH DESIGN	
RMS 85518	ADVANCED QUALITATIVE RESEARCH	3
Major Electives, choose from the following: [1]		4-34
ENGR 71095	SPECIAL TOPICS IN ENGINEERING	
ENGR 81095	SPECIAL TOPICS IN ENGINEERING	
ENGR 81096	INDIVIDUAL INVESTIGATION IN ENGINEERING	
Any Aeronautics (AERN) Doctoral course (70000 level or higher)		
Culminating Requirement		
ENGR 85199	DISSERTATION I [2]	30
Minimum Total Credit Hours for Post-Baccalaureate Students:		**90**
Minimum Total Credit Hours for Post-Master's Students:		**60**

[1] Post-baccalaureate students in the Ph.D. degree may apply maximum 30 credit hours of master's courses (50000 or 60000 level) toward the 90-credit hour requirement. Post-master's students must complete 60 credit hours of doctoral courses (70000 or 80000 level).

[2] Upon admission to candidacy, students must register for ENGR 85199 for a total of 30 credit hours. It is expected that doctoral candidates will continuously register for ENGR 85199, and thereafter ENGR 85299, each semester until all requirements for the degree have been met. Credit hours for ENGR 85299 do not count toward the degree.

Graduation Requirements

Minimum Major GPA	Minimum Overall GPA
-	3.000

Residency Requirement

Ph.D. degree students must meet two residency requirements. For the first requirement, students complete at least one of the program's courses in person on the Kent Campus. AERN 85087 is offered as a six-day, on-campus seminar. The course introduces graduate students to the major forces shaping the future of aviation, including safety management, human-machine systems, advanced air mobility, sustainable and electric aviation, regulatory change and emerging technologies. Activities include expert panels, hands-on labs, scenario modeling and a futures analysis portfolio. Students complete this seminar within their first nine months in the program.

For the second residency requirement (Aviation Research Colloquium: Systems, Methods and Scholarship), students complete a six-day, on-campus event that is focused on advanced research methods, scholarly inquiry, theoretical framing and dissertation concept development. Students engage in research design workshops, systems-level analysis, faculty-led colloquia and academic presentations. These sessions prepares doctoral students for qualifying examinations and dissertation proposal development.

Qualifying Examination

Doctoral students must pass a two-day qualifying examination covering core and specialization subject matter before advancing to dissertation research.

Program Learning Outcomes

Graduates of this program will be able to:

1. Apply advanced research methodologies to collect, analyze and interpret quantitative and qualitative data in aviation and aerospace contexts.
2. Design and evaluate systems, operations or policies that enhance safety, efficiency and human performance in aviation, aerospace, unmanned aircraft systems and advanced air mobility.
3. Integrate legal, regulatory and policy frameworks into decision-making processes for aviation operations, management and emerging technologies.
4. Produce and defend original scholarly research that contributes new knowledge to the field of aeronautics through publication and professional dissemination.
5. Lead interdisciplinary projects and collaborations that address complex challenges in aviation and aerospace at regional, national and global levels.

Full Description

The Ph.D. degree in Aviation Science prepares students to advance knowledge and practice across the aviation and aerospace domains. This interdisciplinary, research-intensive program emphasizes aviation safety, human performance, unmanned aircraft systems (UAS), advanced air mobility (AAM), aviation management and aviation law and policy.

Students engage in a curriculum that integrates core coursework, research tools, seminars and residencies, with specializations in aviation human factors, aviation operations management and aviation law and safety. Hybrid delivery combines online learning with on-

campus residencies that foster scholarly community, collaboration and professional networking. The residencies foster scholarly community, provide access to specialized laboratories and simulators and support interdisciplinary collaboration and professional networking.

Research opportunities are supported by access to Kent State's UAS laboratories, advanced flight simulators and AAM infrastructure planning tools.

Graduates of the program are prepared for leadership roles in academia, industry and government, contributing to the advancement of aviation science, safety, operations and policy at regional, national and global levels.