AVIATION SCIENCE - M.S.

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 Master of Science in Aviation Science at Kent State University prepares students to advance the future of aviation and aerospace through an interdisciplinary, research-focused curriculum. Designed for emerging leaders in industry, government and academia, the program integrates aviation safety, human factors, unmanned aircraft systems, advanced air mobility, aviation operations, management, law and policy. Students benefit from specialized laboratories, advanced flight simulators, expert panels and collaborative learning opportunities that connect research with real-world aviation challenges. The program equips graduates to address complex issues in aviation science, safety, operations and emerging technologies 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*

Operations research analysts

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

Management analysts

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

Transportation, storage, and distribution managers

- 6.1% faster than the average
- 216,700 number of jobs
- $102,010 potential earnings

Financial and investment analysts

- 5.7% faster than the average
- 368,500 number of jobs
- $101,350 potential earnings

Additional careers

- Aviation operations research analysts
- Aviation management analysts
- Aviation and transportation policy analysts
- Airport operations managers
- Airline revenue management analysts
- Airline network planning and scheduling analysts

* 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[1]
- Three letters of recommendation[1]
- 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:[2]
  - Minimum 79 TOEFL iBT score
  - Minimum 6.5 IELTS score
  - Minimum 58 PTE score
  - Minimum 110 DET score

[1] Current Kent State undergraduate students who want to apply to the combined B.S./M.S. degree program should contact the College of Aeronautics and Engineering via email (caegraduatestudies@kent.edu) to discuss the process and request waivers for certain admission requirements.

[2] 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 55135	AVIATION SAFETY THEORY	3
AERN 55250	AVIATION LAW	3
AERN 55791	AVIATION SECURITY AND POLICY SEMINAR	3
AERN 65087	AVIATION FUTURES: SAFETY, SYSTEMS AND SOCIETY	2
AERN 65101	STRATEGIC OPERATIONS AND SYSTEMS MANAGEMENT IN GLOBAL AVIATION	2
AERN 65240	AVIATION SAFETY MANAGEMENT SYSTEMS	2
AERN 65355	ETHICS IN AVIATION	2
BA 64005	ANALYTICS FOR DECISION MAKING	2
POL 60003	QUANTITATIVE METHODS I	3
POL 60010	QUALITATIVE RESEARCH METHODS	3
or RMS 65516	QUALITATIVE RESEARCH DESIGN	
Culminating Requirement		
Thesis or Capstone/Specialization Option, choose from the following:		6
Thesis Option		
AERN 65199	THESIS I [1]	
Capstone/Specialization Option [2]		
AERN 65499	CAPSTONE IN AERONAUTICS	
Specialization Electives, choose from the following:		
AERN 65092	PRACTICUM IN AVIATION SCIENCE	
AERN 65151	AVIATION LAW, POLICY AND GOVERNANCE FOR EMERGING TECHNOLOGIES	
AERN 65202	AVIATION ECONOMICS, POLICY AND EMERGING MARKET MODELS	
AERN 65231	MODELING AND SIMULATION FOR AVIATION SYSTEMS	
AERN 65235	HUMAN ERROR ANALYSIS IN AVIATION	
AERN 65300	AIRLINE TRANSPORTATION OPERATIONS	
AERN 65496	INDIVIDUAL INVESTIGATION IN AVIATION SCIENCE	
Minimum Total Credit Hours:		**31**

[1] Students selecting the thesis option must continually register for AERN 65199 for maximum 6 credit hours toward the degree. Students may need to register for AERN 65299 to complete the thesis requirement; however, those credit hours will not count toward the degree.

[2] Students selecting the capstone/specialization option will complete a total of 6 credit hours, comprising 2-4 credit hours of AERN 65499 and 2-4 credit hours of specialization electives. Students should meet with their advisor to discuss the capstone project topics well before their final semester.

Graduation Requirements

Minimum Major GPA	Minimum Overall GPA
-	3.000

- No more than one-half of a graduate student's coursework may be taken in 50000-level courses.
- Grades below C are not counted toward completion of requirements for the degree.

Residency Requirement

To meet the program's residency requirement, students must complete at least one of the program's courses in person on the Kent Campus. AERN 65087 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.

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 Master of Science 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.