AIR TRAFFIC AND AIRSPACE MANAGEMENT - B.S.

College of Aeronautics and Engineering
www.kent.edu/cae

About This Program
Air Traffic and Airspace Management is a forward-looking program that prepares students for an airspace that will be busier than ever. This program readies students for careers in air traffic control, aircraft dispatch, advanced air mobility and urban air mobility planning. Our curriculum provides you with the knowledge and hands-on experience to navigate the skies and ensure the safety of air travel. With a mix of classroom instruction and simulations, you will learn the critical thinking and decision-making skills required for success. Read more...

Contact Information
• cae@kent.edu | 330-672-2892
• Speak with an Advisor
• Chat with an Admissions Counselor

Program Delivery
• Delivery:
  • In person
• Location:
  • Kent Campus

Accreditation
The B.S. degree in Air Traffic and Airspace Management is accredited by the Aviation Accreditation Board International, Federal Aviation Administration.

Admission Requirements
The university affirmatively strives to provide educational opportunities and access to students with varied backgrounds, those with special talents and adult students who graduated from high school three or more years ago.

First-Year Students on the Kent Campus: First-year admission policy on the Kent Campus is selective. Admission decisions are based upon cumulative grade point average, strength of high school college preparatory curriculum and grade trends. Students not admissible to the Kent Campus may be administratively referred to one of the seven regional campuses to begin their college coursework. For more information, visit the admissions website for first-year students.

First-Year Students on the Regional Campuses: First-year admission to Kent State’s campuses at Ashtabula, East Liverpool, Geauga, Salem, Stark, Trumbull and Tuscarawas, as well as the Twinsburg Academic Center, is open to anyone with a high school diploma or its equivalent. For more information on admissions, contact the Regional Campuses admissions offices.

International Students: All international students must provide proof of English language proficiency (unless they meet specific exceptions) by earning a minimum 525 TOEFL score (71 on the Internet-based version), minimum 75 MELAB score, minimum 6.0 IELTS score or minimum 48 PTE Academic score, or by completing the ELS level 112 Intensive Program. For more information, visit the admissions website for international students.

Transfer Students: Students who have attended any other educational institution after graduating from high school must apply as undergraduate transfer students. For more information, visit the admissions website for transfer students.

Former Students: Former Kent State students or graduates who have not attended another college or university since Kent State may complete the reenrollment or reinstatement form on the University Registrar’s website.

Admission policies for undergraduate students may be found in the University Catalog’s Academic Policies.

Some programs may require that students meet certain requirements before progressing through the program. For programs with progression requirements, the information is shown on the program’s Coursework tab.

Transfer students must have a minimum 2.250 overall GPA in all college-level coursework for admission to the Air Traffic and Airspace Management major.

Program Requirements

Major Requirements

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<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
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<tr>
<td>AERN 15000</td>
<td>INTRODUCTION TO AERONAUTICS</td>
<td>3</td>
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<tr>
<td>AERN 15745</td>
<td>NON-PILOT ELEMENTS OF FLIGHT THEORY</td>
<td>3</td>
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<td>INTRODUCTION TO AVIATION MANAGEMENT</td>
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<td>ELEMENTS OF AVIATION WEATHER</td>
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<td>THUNDERSTORMS AND SEVERE WEATHER</td>
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<td>AERN 35250</td>
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<td>TERMINAL OPERATIONS</td>
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<td>AERN 35650</td>
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<td>AERN 35850</td>
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<td>AIRCRAFT DISPATCH II</td>
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<td>PHYSIOLOGY AND HUMAN FACTORS OF FLIGHT</td>
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<td>AVIATION SAFETY THEORY</td>
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<td>AERN 45150</td>
<td>APPLIED FLIGHT DYNAMICS I</td>
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<tr>
<td>AERN 45345</td>
<td>EN ROUTE OPERATIONS</td>
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AERN 45346  EN ROUTE OPERATIONS LABORATORY  1
AERN 45399  AIR TRAFFIC CONTROL CAPSTONE (ELR)  1
AERN 45499  AIR TRAFFIC CONTROL CAPSTONE LABORATORY (ELR)  2
AERN 45720  CREW RESOURCE MANAGEMENT  2
AERN 45791  AVIATION SECURITY AND POLICY SEMINAR (WIC)  3
AERN 45820  AIRSPACE MANAGEMENT  3
ENGR 10005  INTRODUCTION TO CYBERSECURITY  3

Additional Requirements (courses do not count in major GPA)
COMM 15000  INTRODUCTION TO HUMAN COMMUNICATION (KADL)  3
MATH 11010  ALGEBRA FOR CALCULUS (KMCR)  3
MATH 11022  TRIGONOMETRY (KMCR)  3
MGMT 24163  PRINCIPLES OF MANAGEMENT  3
PHY 13001  GENERAL COLLEGE PHYSICS I (KBS)  4
PHY 13021  GENERAL COLLEGE PHYSICS LABORATORY I (KBS) (KLAB)  1
PHY 13012  COLLEGE PHYSICS II (KBS)  2
PHY 13022  GENERAL COLLEGE PHYSICS LABORATORY II (KBS) (KLAB)  1
UC 10001  FLASHES 101  1
Kent Core Requirement  3
Credit Hours  16

Semester Three
AERN 25250  ELEMENTS OF AVIATION WEATHER  3
MGMT 24163  PRINCIPLES OF MANAGEMENT  3
PHY 13001  GENERAL COLLEGE PHYSICS I (KBS)  4
PHY 13021  GENERAL COLLEGE PHYSICS LABORATORY I (KBS) (KLAB)  1
Kent Core Requirement  3
Credit Hours  14

Semester Four
AERN 25252  THUNDERSTORMS AND SEVERE WEATHER  3
AERN 35250  UNMANNED AIRCRAFT SYSTEMS LAW AND REGULATIONS  2
AERN 35350  TERMINAL OPERATIONS  3
AERN 35351  TERMINAL OPERATIONS LABORATORY  2
PHY 13012  COLLEGE PHYSICS II (KBS)  2
PHY 13022  GENERAL COLLEGE PHYSICS LABORATORY II (KBS) (KLAB)  1
Kent Core Requirement  3
Credit Hours  16

Graduation Requirements

Minimum Major GPA  2.500
Minimum Overall GPA  2.500

Roadmap

This roadmap is a recommended semester-by-semester plan of study for this major. However, courses designated as critical (!) must be completed in the semester listed to ensure a timely graduation.

Semester One
! AERN 15000  INTRODUCTION TO AERONAUTICS  3
! AERN 15745  NON-PILOT ELEMENTS OF FLIGHT THEORY  3
AERN 25350  FUNDAMENTALS OF AIR TRAFFIC CONTROL  2
AERN 25351  FUNDAMENTALS OF AIR TRAFFIC CONTROL LABORATORY  1
MATH 11010  ALGEBRA FOR CALCULUS (KMCR)  3
UC 10001  FLASHES 101  1
Kent Core Requirement  3
Credit Hours  16

Semester Two
AERN 25800  INTRODUCTION TO UNMANNED AIRCRAFT SYSTEMS  3
COMM 15000  INTRODUCTION TO HUMAN COMMUNICATION (KADL)  3
ENGR 10005  INTRODUCTION TO CYBERSECURITY (KADL)  3
MATH 11022  TRIGONOMETRY (KMCR)  3
Credit Hours  16

Semester Three
AERN 25250  ELEMENTS OF AVIATION WEATHER  3
MGMT 24163  PRINCIPLES OF MANAGEMENT  3
PHY 13001  GENERAL COLLEGE PHYSICS I (KBS)  4
PHY 13021  GENERAL COLLEGE PHYSICS LABORATORY I (KBS) (KLAB)  1
Kent Core Requirement  3
Credit Hours  14

Semester Four
AERN 25252  THUNDERSTORMS AND SEVERE WEATHER  3
AERN 35250  UNMANNED AIRCRAFT SYSTEMS LAW AND REGULATIONS  2
AERN 35350  TERMINAL OPERATIONS  3
AERN 35351  TERMINAL OPERATIONS LABORATORY  2
PHY 13012  COLLEGE PHYSICS II (KBS)  2
PHY 13022  GENERAL COLLEGE PHYSICS LABORATORY II (KBS) (KLAB)  1
Kent Core Requirement  3
Credit Hours  16

Semester Five
AERN 25100  INTRODUCTION TO AVIATION MANAGEMENT  3
! AERN 35040  AIRCRAFT SYSTEMS I  3
AERN 35650  NON-PILOT INSTRUMENT FLIGHT THEORY  3
AERN 35850  EMERGENT AIR VEHICLES AND INFRASTRUCTURE  3
AERN 35851  EMERGENT AIR VEHICLES AND INFRASTRUCTURE LABORATORY  1
Kent Core Requirement  3
Credit Hours  16

Semester Six
AERN 30000  PROFESSIONAL DEVELOPMENT IN AERONAUTICS  1
AERN 45130  PHYSIOLOGY AND HUMAN FACTORS OF FLIGHT  3
AERN 45150  APPLIED FLIGHT DYNAMICS I  3
AERN 45250  AVIATION LAW  3
Kent Core Requirement  3
Credit Hours  13

Semester Seven
AERN 45135  AVIATION SAFETY THEORY  3
AERN 45345  EN ROUTE OPERATIONS  3
AERN 45346  EN ROUTE OPERATIONS LABORATORY  1
AERN 45720  CREW RESOURCE MANAGEMENT  2
AERN 45791  AVIATION SECURITY AND POLICY SEMINAR (WIC)  3
AERN 45820  AIRSPACE MANAGEMENT  3
Credit Hours  15

Semester Eight
AERN 45010  AIRCRAFT DISPATCH I  3
AERN 45020  AIRCRAFT DISPATCH II  3
AERN 45030  AIRCRAFT SYSTEMS II  3
AERN 45399  AIR TRAFFIC CONTROL CAPSTONE (ELR)  1
AERN 45499  AIR TRAFFIC CONTROL CAPSTONE LABORATORY (ELR)  2
Credit Hours  15

1 A minimum C grade must be earned to fulfill the writing-intensive requirement.
University Requirements

All students in a bachelor’s degree program at Kent State University must complete the following university requirements for graduation.

**NOTE:** University requirements may be fulfilled in this program by specific course requirements. Please see Program Requirements for details.

<table>
<thead>
<tr>
<th>Kent Core Requirement</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flashes 101 (UC 10001)</td>
<td>1 credit hour</td>
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<tr>
<td>Diversity Domestic/Global (DIVD/DIVG)</td>
<td>2 courses</td>
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<tr>
<td>Experiential Learning Requirement (ELR)</td>
<td>varies</td>
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<tr>
<td>Kent Core (see table below)</td>
<td>36-37 credit hours</td>
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<tr>
<td>Writing-Intensive Course (WIC)</td>
<td>1 course</td>
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<tr>
<td>Upper-Division Requirement</td>
<td>39 credit hours</td>
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<tr>
<td>Total Credit Hour Requirement</td>
<td>120 credit hours</td>
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</tbody>
</table>

**Kent Core Requirements**

- Kent Core Composition (KCMP) 6
- Kent Core Mathematics and Critical Reasoning (KMCR) 3
- Kent Core Humanities and Fine Arts (KHUM/KFA) (min one course each) 9
- Kent Core Social Sciences (KSS) (must be from two disciplines) 6
- Kent Core Basic Sciences (KBS/KLAB) (must include one laboratory) 6-7
- Kent Core Additional (KADL) 6

**Total Credit Hours:** 36-37

**Program Learning Outcomes**

Graduates of this program will be able to:

1. Demonstrate the knowledge and skills of air traffic and airspace management, as set forth by the AT-CTI program requirements, by applying rules and procedures needed to safely control traffic in the National Airspace System (NAS).
2. Demonstrate the necessary knowledge of the rules and procedures needed to test for the Federal Aviation Administration’s 14 CFR Part 65 Aircraft Dispatcher Certification.
3. Demonstrate knowledge of and ability to adapt to the changing air traffic and airspace management technology and rules as the global aviation industry grows.

The educational goals of the program are the following:

1. Exhibit the qualities of excellence, integrity, leadership, management and professionalism within their area of professional specialization in aviation.
2. Demonstrate a professional commitment to safety and contribute to the safety culture within their area of professional specialization in aviation.
3. Demonstrate the ability to improve aerospace for generations to come through experiential learning, creativity and innovation within their area of professional specialization in aviation.
4. Manifest the college’s core values in the areas of collaboration, compassion, inclusiveness, innovation, integrity, respect and perseverance within their area of professional specialization in aviation.

**Full Description**

The Bachelor of Science degree in Air Traffic and Airspace Management is part of the Federal Aviation Administration’s (FAA) Air Traffic-Collegiate Training Initiative (AT-CTI) to provide a broad education in several areas of aviation to operate the National Airspace System in the 21st century. The Air Traffic and Airspace Management major offers practical simulation-based training to prepare students for professional work in air traffic control (ATC) and management. Graduates have the knowledge and skills to work as air traffic controllers, managers or numerous other types of professionals operating in the National Airspace System.

The mission of the Bachelor of Science degree in Air Traffic and Airspace Management is to help prepare students for success in numerous aviation-related fields, including those that are emerging such as advanced air mobility (AAM), space traffic management (upper class E traffic management) and remote and automated operations. As an FAA AT-CTI program, students receive specialized education and training to help them earn employment and advancement in ATC. Additionally, this program focuses on disciplines such as aircraft dispatch (14 CFR Part 65), AAM and many more.

Students may apply early to the M.S. degree in Aviation Management and Logistics and double count 9 credit hours of graduate courses toward both degree programs. See the Combined Bachelor’s/Master’s Degree Program policy in the University Catalog for more information.