UNMANNED AIRCRAFT SYSTEMS FLIGHT OPERATIONS - B.S.

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

About This Program

The Unmanned Aircraft Systems Flight Operations program provides you with the knowledge and skills to become a successful drone pilot and work in industries such as agriculture, public safety and more. With hands-on training, cutting-edge technology and experienced faculty, you'll be equipped to navigate the skies with confidence. Enroll now and soar towards a promising career in unmanned aircraft systems. 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

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. 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.

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 Coursework tab.

Transfer students must have a minimum 2.250 overall GPA in all college-level coursework for admission to the Unmanned Aircraft Systems Flight Operations major.

Program Requirements

Major Requirements

Code	Title	Credit Hours
Major Requirements (courses count in major GPA)		
AERN 15000	INTRODUCTION TO AERONAUTICS	3
AERN 15745	NON-PILOT ELEMENTS OF FLIGHT THEORY	3
AERN 25100	INTRODUCTION TO AVIATION MANAGEMENT	3
AERN 25250	ELEMENTS OF AVIATION WEATHER	3
AERN 25350	FUNDAMENTALS OF AIR TRAFFIC CONTROL	2
AERN 25351	FUNDAMENTALS OF AIR TRAFFIC CONTROL LABORATORY	1
AERN 25800	INTRODUCTION TO UNMANNED AIRCRAFT SYSTEMS	3
AERN 30000	PROFESSIONAL DEVELOPMENT IN AERONAUTICS	1
AERN 35020	AIRCRAFT PROPULSION SYSTEMS	3
AERN 35040	AIRCRAFT SYSTEMS I	3
AERN 35250	UNMANNED AIRCRAFT SYSTEMS LAW AND REGULATIONS	2
AERN 35650	NON-PILOT INSTRUMENT FLIGHT THEORY	3
AERN 35810	UNMANNED AIRCRAFT SYSTEMS	3
AERN 35830	UNMANNED AIRCRAFT SYSTEMS SENSING AND SENSOR SYSTEMS	3
AERN 35840	UNMANNED AIRCRAFT SYSTEMS COMMAND, CONTROL AND COMMUNICATIONS	3
AERN 35892	SMALL UNMANNED AIRCRAFT SYSTEMS FLIGHT PRACTICUM (ELR)	2
AERN 45030	AIRCRAFT SYSTEMS II	3
AERN 45130	PHYSIOLOGY AND HUMAN FACTORS OF FLIGHT	3
AERN 45135	AVIATION SAFETY THEORY	3
AERN 45150	APPLIED FLIGHT DYNAMICS I	3
AERN 45250	AVIATION LAW	3
AERN 45791	AVIATION SECURITY AND POLICY SEMINAR (WIC) [1]	3
AERN 45800	UNMANNED AIRCRAFT SYSTEMS FLIGHT OPERATIONS THEORY	4
AERN 45892	UNMANNED AIRCRAFT SYSTEMS FLIGHT PRACTICUM (ELR)	2
ENGR 45151	APPLIED FLIGHT DYNAMICS II	3
Aeronautics (AERN) Electives		6
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
PHY 13001	GENERAL COLLEGE PHYSICS I (KBS)	4
PHY 13012	COLLEGE PHYSICS II (KBS)	2
PHY 13021	GENERAL COLLEGE PHYSICS LABORATORY I (KBS) (KLAB)	1
PHY 13022	GENERAL COLLEGE PHYSICS LABORATORY II (KBS) (KLAB)	1
UC 10001	FLASHES 101	1
Kent Core Composition		6
Kent Core Humanities and Fine Arts (minimum one course from each)		9
Kent Core Social Sciences (must be from two disciplines)		6
General Electives (total credit hours depends on earning 120 credits hour, including 39 upper-division credit hours)		7
Minimum Total Credit Hours:		**120**

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

Graduation Requirements

Minimum Major GPA	Minimum Overall GPA
2.500	2.000

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		Credits
AERN 15000	INTRODUCTION TO AERONAUTICS	3
AERN 25800	INTRODUCTION TO UNMANNED AIRCRAFT SYSTEMS	3
MATH 11010	ALGEBRA FOR CALCULUS (KMCR)	3
UC 10001	FLASHES 101	1
Kent Core Requirement		3
Kent Core Requirement		3
	Credit Hours	**16**
Semester Two		
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 11022	TRIGONOMETRY (KMCR)	3
Aeronautics (AERN) Elective		3
Kent Core Requirement		3
	Credit Hours	**15**
Semester Three		
AERN 25100	INTRODUCTION TO AVIATION MANAGEMENT	3
AERN 25250	ELEMENTS OF AVIATION WEATHER	3
AERN 35810	UNMANNED AIRCRAFT SYSTEMS	3
Kent Core Requirement		3
Kent Core Requirement		3
	Credit Hours	**15**
Semester Four		
AERN 35830	UNMANNED AIRCRAFT SYSTEMS SENSING AND SENSOR SYSTEMS	3

COMM 15000	INTRODUCTION TO HUMAN COMMUNICATION (KADL)	3
PHY 13001	GENERAL COLLEGE PHYSICS I (KBS)	4
PHY 13021	GENERAL COLLEGE PHYSICS LABORATORY I (KBS) (KLAB)	1
General Elective		3
	Credit Hours	**14**
Semester Five		
AERN 30000	PROFESSIONAL DEVELOPMENT IN AERONAUTICS	1
AERN 35020	AIRCRAFT PROPULSION SYSTEMS	3
AERN 35892	SMALL UNMANNED AIRCRAFT SYSTEMS FLIGHT PRACTICUM (ELR)	2
PHY 13012	COLLEGE PHYSICS II (KBS)	2
PHY 13022	GENERAL COLLEGE PHYSICS LABORATORY II (KBS) (KLAB)	1
Aeronautics (AERN) Elective		3
Kent Core Requirement		3
	Credit Hours	**15**
Semester Six		
AERN 35040	AIRCRAFT SYSTEMS I	3
AERN 35650	NON-PILOT INSTRUMENT FLIGHT THEORY	3
AERN 45150	APPLIED FLIGHT DYNAMICS I	3
AERN 45250	AVIATION LAW	3
Kent Core Requirement		3
	Credit Hours	**15**
Semester Seven		
AERN 35840	UNMANNED AIRCRAFT SYSTEMS COMMAND, CONTROL AND COMMUNICATIONS	3
AERN 45030	AIRCRAFT SYSTEMS II	3
AERN 45130	PHYSIOLOGY AND HUMAN FACTORS OF FLIGHT	3
ENGR 45151	APPLIED FLIGHT DYNAMICS II	3
General Electives		4
	Credit Hours	**16**
Semester Eight		
AERN 35250	UNMANNED AIRCRAFT SYSTEMS LAW AND REGULATIONS	2
AERN 45135	AVIATION SAFETY THEORY	3
AERN 45791	AVIATION SECURITY AND POLICY SEMINAR (WIC)	3
AERN 45800	UNMANNED AIRCRAFT SYSTEMS FLIGHT OPERATIONS THEORY	4
AERN 45892	UNMANNED AIRCRAFT SYSTEMS FLIGHT PRACTICUM (ELR)	2
	Credit Hours	**14**
	Minimum Total Credit Hours:	**120**

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.

Flashes 101 (UC 10001)	1 credit hour
Course is not required for students with 30+ transfer credits (excluding College Credit Plus) or age 21+ at time of admission.	
Diversity Domestic/Global (DIVD/DIVG)	2 courses

Students must successfully complete one domestic and one global course, of which one must be from the Kent Core.	
Experiential Learning Requirement (ELR)	varies
Students must successfully complete one course or approved experience.	
Kent Core (see table below)	36-37 credit hours
Writing-Intensive Course (WIC)	1 course
Students must earn a minimum C grade in the course.	
Upper-Division Requirement	39 credit hours
Students must successfully complete 39 upper-division (numbered 30000 to 49999) credit hours to graduate.	
Total Credit Hour Requirement	120 credit hours

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. Apply knowledge of math, science and the applied sciences to aviation-related disciplines.
2. Analyze and interpret data.
3. Understand and master the fundamental concepts and skills of airplane flight.
4. Communicate effectively through written and oral means.
5. Recognize the need and develop the cognitive abilities to engage in life-long learning by successfully contending with changing technologies, regulatory policies and procedures, market forces and the highly dynamic operational environment of commercial flight and professional aviation.
6. Understand contemporary issues that affect aviation.
7. Use the techniques, skills and modern technology necessary for professional practice.
8. Understand the national and international aviation environment.
9. Apply pertinent knowledge in identifying and solving problems.
10. Know and understand the technical details involved in the effective management of employees and operational systems in professional aviation.

Full Description

The Bachelor of Science degree in Unmanned Aircraft Systems Flight Operations program is for students who aspire to become professional unmanned aircraft pilots (drone pilot). This program is focused on the safe operations of unmanned aircraft systems, regulations, the technology of autonomous systems and policies regarding the operations of unmanned aerial elements.

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.