

AERONAUTICAL SYSTEMS ENGINEERING TECHNOLOGY - B.S.

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

Examples of Possible Careers*

Aerospace engineering and operations technologists and technicians

- 7.0% faster than the average
- 11,900 number of jobs
- \$68,570 potential earnings

Calibration technologists and technicians and engineering technologists and technicians, except drafters, all other

- 2.1% slower than the average
- 91,600 number of jobs
- \$64,190 potential earnings

Mechanical drafters

- -8.3% decline
- 57,500 number of jobs
- \$58,270 potential earnings

Contact Information

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

Fully Offered

- Kent Campus

*Note

Source of occupation titles and labor data is 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.

Description

The Bachelor of Science degree in Aeronautical Systems Engineering Technology prepares graduates to enter careers in the design, installation, manufacturing, testing, evaluation, technical sales and maintenance of aeronautical/aerospace systems. Students gain technical expertise in engineering materials, statics, strength of materials, applied aerodynamics, applied propulsion and electronics. Graduates have strengths in the analysis, applied design, development, implementation and oversight of more advanced aeronautical/aerospace systems and processes.

Information on the program's education objectives and student enrollment and graduation data can be found on the college website.

Accreditation

The B.S. degree in Aeronautical Systems Engineering Technology is accredited by the Engineering Technology Accreditation Commission of ABET (www.abet.org) and the Aviation Accreditation Board International (www.aabi.aero).

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.

Freshman Students on the Kent Campus: The freshman admission policy on the Kent Campus is selective. Admission decisions are based upon the following: cumulative grade point average, ACT and/or SAT scores, strength of high school college preparatory curriculum and grade trends. The Admissions Office at the Kent Campus may defer the admission of students who do not meet admissions criteria but who demonstrate areas of promise for successful college study. Deferred applicants may begin their college coursework at one of seven regional campuses of Kent State University. For more information on admissions, including additional requirements for some academic programs, visit the admissions website for first-year students.

Freshman Students on the Regional Campuses: Kent State campuses at Ashtabula, East Liverpool, Geauga, Salem, Stark, Trumbull and Tuscarawas, as well as the Twinsburg Academic Center, have open enrollment admission for students who hold a high school diploma, GED or equivalent.

English Language Proficiency Requirements for 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, minimum 48 PTE score or minimum 100 DET score; or by completing the ESL level 112 Intensive Program. For more information on international admission, visit the Office of Global Education's admission website.

Transfer, Transitioning and Former Students: For more information about admission criteria for transfer, transitioning and former students, please visit the admissions website.

Transfer students must have a minimum 2.250 overall GPA in all college-level coursework for admission to the Aeronautical Systems Engineering Technology major.

Program Learning Outcomes

Graduates of this program will be able to:

1. Apply knowledge, techniques, skills and modern tools of mathematics, science, engineering, and technology to solve broadly defined engineering problems appropriate to the discipline.
2. Design systems, components, or processes meeting specified needs for broadly defined engineering problems appropriate to the discipline.
3. Apply written, oral, and graphical communication in broadly defined technical and non-technical environments; and an ability to identify and use appropriate technical literature.

- Conduct standard tests, measurements, and experiments and to analyze and interpret the results to improve processes.
- Function effectively as a member as well as a leader on technical teams.

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.

Destination Kent State: First Year Experience	1
Course is not required for students with 25 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
Writing-Intensive Course (WIC)	1 course
Students must earn a minimum C grade in the course.	
Upper-Division Requirement	39 (or 42)
Students must successfully complete 39 upper-division (numbered 30000 to 49999) credit hours to graduate. Students in a B.A. and/or B.S. degree in the College of Arts and Sciences must complete 42 upper-division credit hours.	
Total Credit Hour Requirement	120
Some bachelor's degrees require students to complete more than 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 Requirements

Major Requirements

Code	Title	Credit Hours
Major Requirements (courses count in major GPA)		
AERN 30000	PROFESSIONAL DEVELOPMENT IN AERONAUTICS	1
AERN 35040	AIRCRAFT SYSTEMS I	3
AERN 35150	AIRCRAFT STRUCTURES	3
AERN 45030	AIRCRAFT SYSTEMS II	3
AERN 45150	APPLIED FLIGHT DYNAMICS I	3
AERN 45360	PROFESSIONAL DEVELOPMENT IN AERONAUTICS III	1
ENGR 13585	COMPUTER AIDED ENGINEERING GRAPHICS	3

ENGR 15300	INTRODUCTION TO ENGINEERING ANALYSIS USING MATLAB®	2
ENGR 15301	INTRODUCTION TO ENGINEERING ANALYSIS USING MATLAB® LAB	1
ENGR 15500	INTRODUCTION TO AEROSPACE ENGINEERING	3
ENGR 20002	MATERIALS AND PROCESSES	3
ENGR 20000	PROFESSIONAL DEVELOPMENT IN ENGINEERING	1
ENGR 21020	SURVEY OF ELECTRICITY AND ELECTRONICS	3
ENGR 21022	SURVEY OF ELECTRICITY AND ELECTRONICS LABORATORY	1
ENGR 25200	STATICS	3
ENGR 26200	PROGRAMMING FOR ENGINEERS I	3
ENGR 33031	PROGRAMMABLE LOGIC CONTROLLERS	3
ENGR 33040	CONTROL SYSTEMS	3
ENGR 33111	STATICS AND STRENGTH OF MATERIALS	3
ENGR 43030	MECHATRONICS	3
ENGR 45121	AEROSPACE PROPULSION FOR ENGINEERING AND ENGINEERING TECHNOLOGY	3
ENGR 45151	APPLIED FLIGHT DYNAMICS II	3
ENGR 45799	AIRCRAFT DESIGN I (ELR)	3
ENGR 45899	AIRCRAFT DESIGN II (ELR) (WIC)	3
ENGR 47200	SYSTEMS ENGINEERING	3
Aeronautics (AERN) or Engineering (ENGR) Electives		5
Additional Requirements (courses do not count in major GPA)		
COMM 15000	INTRODUCTION TO HUMAN COMMUNICATION (KADL)	3
ECON 22060	PRINCIPLES OF MICROECONOMICS (KSS)	3
MATH 12002	ANALYTIC GEOMETRY AND CALCULUS I (KMCR)	5
MATH 12003	ANALYTIC GEOMETRY AND CALCULUS II (min C grade)	5
MATH 22005	ANALYTIC GEOMETRY AND CALCULUS III (min C grade)	4
PHY 23101	GENERAL UNIVERSITY PHYSICS I (KBS) (KLAB)	5
PHY 23102	GENERAL UNIVERSITY PHYSICS II (KBS) (KLAB)	5
UC 10097	DESTINATION KENT STATE: FIRST YEAR EXPERIENCE	1
Kent Core Composition		6
Kent Core Humanities and Fine Arts (minimum one course from each)		9
Kent Core Social Sciences (cannot be ECON)		3
Kent Core Additional		3
Minimum Total Credit Hours:		121

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

Graduation Requirements

Minimum Major GPA	Minimum Overall GPA
2.500	2.500

- A minimum C grade may be required in some courses.

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
COMM 15000	INTRODUCTION TO HUMAN COMMUNICATION (KADL)	3
ENGR 13585	COMPUTER AIDED ENGINEERING GRAPHICS	3
ENGR 15300	INTRODUCTION TO ENGINEERING ANALYSIS USING MATLAB®	2
ENGR 15301	INTRODUCTION TO ENGINEERING ANALYSIS USING MATLAB® LAB	1
UC 10097	DESTINATION KENT STATE: FIRST YEAR EXPERIENCE	1
Kent Core Requirement		3
Kent Core Requirement		3
Credit Hours		16
Semester Two		
ENGR 15500	INTRODUCTION TO AEROSPACE ENGINEERING	3
ENGR 20002	MATERIALS AND PROCESSES	3
MATH 12002	ANALYTIC GEOMETRY AND CALCULUS I (KMCR)	5
PHY 23101	GENERAL UNIVERSITY PHYSICS I (KBS) (KLAB)	5
Credit Hours		16
Semester Three		
ENGR 20000	PROFESSIONAL DEVELOPMENT IN ENGINEERING	1
ENGR 25200	STATICS	3
MATH 12003	ANALYTIC GEOMETRY AND CALCULUS II	5
PHY 23102	GENERAL UNIVERSITY PHYSICS II (KBS) (KLAB)	5
Kent Core Requirement		3
Credit Hours		17
Semester Four		
AERN 35040	AIRCRAFT SYSTEMS I	3
ECON 22060	PRINCIPLES OF MICROECONOMICS (KSS)	3
ENGR 21020	SURVEY OF ELECTRICITY AND ELECTRONICS	3
ENGR 21022	SURVEY OF ELECTRICITY AND ELECTRONICS LABORATORY	1
MATH 22005	ANALYTIC GEOMETRY AND CALCULUS III	4
Credit Hours		14
Semester Five		
AERN 45030	AIRCRAFT SYSTEMS II	3
AERN 45150	APPLIED FLIGHT DYNAMICS I	3
ENGR 33031	PROGRAMMABLE LOGIC CONTROLLERS	3
ENGR 33111	STATICS AND STRENGTH OF MATERIALS	3
Kent Core Requirement		3
Credit Hours		15
Semester Six		
AERN 30000	PROFESSIONAL DEVELOPMENT IN AERONAUTICS	1
AERN 35150	AIRCRAFT STRUCTURES	3
ENGR 26200	PROGRAMMING FOR ENGINEERS I	3
ENGR 33040	CONTROL SYSTEMS	3
ENGR 45121	AEROSPACE PROPULSION FOR ENGINEERING AND ENGINEERING TECHNOLOGY	3
Kent Core Requirement		3
Credit Hours		16

Semester Seven		
AERN 45360	PROFESSIONAL DEVELOPMENT IN AERONAUTICS III	1
ENGR 43030	MECHATRONICS	3
ENGR 45151	APPLIED FLIGHT DYNAMICS II	3
ENGR 45799	AIRCRAFT DESIGN I (ELR)	3
Kent Core Requirement		3
Credit Hours		13
Semester Eight		
ENGR 45899	AIRCRAFT DESIGN II (ELR) (WIC)	3
ENGR 47200	SYSTEMS ENGINEERING	3
Aeronautics (AERN) or Engineering (ENGR) Electives		5
Kent Core Requirement		3
Credit Hours		14
Minimum Total Credit Hours:		121