AEROSPACE ENGINEERING - M.S.

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

About This Program

Experience the forefront of aerospace engineering through an advanced master's program, designed to equip you with the skills and knowledge needed to excel in the dynamic aerospace industry. Read more...

Contact Information

- Program Coordinator: **Ali Abdul-Aziz, Ph.D., P.E.** | CAEgraduatestudies@kent.edu | 330-672-1032
- Connect with an Admissions Counselor: U.S. Student | International Student

Program Delivery

- **Delivery:**
  - In person
- **Location:**
  - Kent Campus

Examples of Possible Careers and Salaries*

Aerospace engineers

- 2.8% slower than the average
- 66,400 number of jobs
- $118,610 potential earnings

Architectural and engineering managers

- 2.6% slower than the average
- 198,100 number of jobs
- $149,530 potential earnings

Avionics technicians

- 4.4% about as fast as the average
- 22,800 number of jobs
- $67,840 potential earnings

Engineering teachers, postsecondary

- 8.6% much faster than the average
- 44,600 number of jobs
- $103,600 potential earnings

* 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.

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 aerospace engineering or a closely related area 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) by earning one of the following:
  - Minimum 550 TOEFL PBT score
  - Minimum 79 TOEFL IBT score
  - Minimum 77 MELAB score
  - Minimum 6.5 IELTS score
  - Minimum 58 PTE score
  - Minimum 100 Duolingo English score

Application Deadlines

- **Fall Semester**
  - Application deadline: November 1

Applications submitted after this deadline will be considered on a space-available basis.

Program Requirements

Major Requirements

Code	Title	Credit Hours
Major Requirements		
ENGR 61091	GRADUATE SEMINAR	1
ENGR 65098	RESEARCH	3
Mathematics Elective, choose from the following:		3
MATH 50015	APPLIED STATISTICS	
MATH 52011	MATHEMATICAL OPTIMIZATION	
MATH 52031	MATHEMATICAL MODELS AND DYNAMICAL SYSTEMS	
MATH 52045	PARTIAL DIFFERENTIAL EQUATIONS	
MATH 52201	NUMERICAL COMPUTING I	
MATH 52202	NUMERICAL COMPUTING II	
Engineering-Focus Electives, choose one course from three focus areas:		9
Astronautics		
ENGR 58001	ORBITAL MECHANICS	
ENGR 58002	SPACECRAFT ATTITUDE DYNAMICS, DETERMINATION AND CONTROL	
ENGR 58004	OPTIMAL CONTROL THEORY	
Dynamics and Control		
ENGR 58005	LINEAR SYSTEM ANALYSIS AND CONTROL	
ENGR 58006	NONLINEAR SYSTEMS AND CONTROL	
ENGR 58007	DIGITAL CONTROL SYSTEMS	
ENGR 58008	INTRODUCTION TO ROBUST CONTROL	
ENGR 58101	AUTONOMOUS UNMANNED AERIAL SYSTEMS	
Structure and Materials		

ENGR 52111	STRENGTH OF MATERIALS FOR ENGINEERS	
ENGR 52363	MATERIALS SELECTION IN DESIGN AND APPLICATIONS	
ENGR 55901	INTRODUCTION TO FINITE ELEMENT METHOD AND APPLICATIONS	
Systems and Design		
ENGR 55799	AIRCRAFT DESIGN I	
ENGR 58003	SPACECRAFT DESIGN	
ENGR 58102	INTELLIGENT SENSING AND PLANNING OF UNMANNED AERIAL SYSTEMS	
Additional courses as approved by advisor		
Engineering Electives, choose from the following:		9
ENGR 52111	STRENGTH OF MATERIALS FOR ENGINEERS	
ENGR 52363	MATERIALS SELECTION IN DESIGN AND APPLICATIONS	
ENGR 52410	ENGINEERING OPTIMIZATION	
ENGR 55799	AIRCRAFT DESIGN I	
ENGR 55901	INTRODUCTION TO FINITE ELEMENT METHOD AND APPLICATIONS	
ENGR 57200	SYSTEMS ENGINEERING	
ENGR 58001	ORBITAL MECHANICS	
ENGR 58002	SPACECRAFT ATTITUDE DYNAMICS, DETERMINATION AND CONTROL	
ENGR 58003	SPACECRAFT DESIGN	
ENGR 58004	OPTIMAL CONTROL THEORY	
ENGR 58005	LINEAR SYSTEM ANALYSIS AND CONTROL	
ENGR 58006	NONLINEAR SYSTEMS AND CONTROL	
ENGR 58007	DIGITAL CONTROL SYSTEMS	
ENGR 58008	INTRODUCTION TO ROBUST CONTROL	
ENGR 58101	AUTONOMOUS UNMANNED AERIAL SYSTEMS	
ENGR 58102	INTELLIGENT SENSING AND PLANNING OF UNMANNED AERIAL SYSTEMS	
ENGR 61096	INDIVIDUAL INVESTIGATION IN ENGINEERING	
Additional courses as approved by advisor		
Culminating Requirement		
Choose from the following:		6
ENGR 65199	THESIS I [1]	
Courses from Major Electives		
Minimum Total Credit Hours:		**31**

[1] Students selecting the thesis option must successfully defend their research thesis in a public setting before the thesis committee. Upon approval of the thesis topic, the student is required to register continuously for ENGR 65199 each semester for a total of 6 credit hours. A student who has completed the required 6 credit hours of ENGR 65199 but has not finished the thesis is expected, thereafter, to register continuously for ENGR 65299 each semester until all degree requirements are met. No more than 6 credit hours of ENGR 65199 may be counted toward completion of degree requirements. Credit hours earned in ENGR 65299 do not, under any circumstances, count toward the degree.

Program Learning Outcomes

Graduates of this program will be able to:

1. Conduct literature searches, comprehend advanced research materials and uncover connections between related work.
2. Perform research, discovery and integration by applying advanced knowledge of aerospace engineering.
3. Communicate problems and solutions in aerospace engineering clearly, both verbally and in writing.

Full Description

The Master of Science degree in Aerospace Engineering provides an advanced theoretical and/or research-oriented curriculum with significant depth in aerospace-specific disciplines, beyond the general fundamentals of the engineering bachelor's degree.