AEROSPACE ENGINEERING - PH.D.

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

About This Program

The Ph.D. 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.

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 or graduate GPA on a 4.000-point scale *(starting with fall 2025 admission term, a minimum 3.000 GPA will be required)*
- 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 to waive) by earning one of the following:[1]
  - Minimum 79 TOEFL iBT score
  - Minimum 6.5 IELTS score
  - Minimum 58 PTE score
  - Minimum 110 DET score

[1] International applicants who do not meet the above test scores may be considered for conditional admission.

Application Deadlines

- **Fall Semester**
  - Application deadline: March 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 81091	GRADUATE SEMINAR (taken three times)	3
Advisor-approved courses [1]		0-30
Engineering-Focus Electives, choose from the following:		18
ENGR 72410	ENGINEERING OPTIMIZATION	
Astronautics		
ENGR 78001	ORBITAL MECHANICS	
ENGR 78002	SPACECRAFT ATTITUDE DYNAMICS, DETERMINATION AND CONTROL	
ENGR 78004	OPTIMAL CONTROL THEORY	
Dynamics and Control		
ENGR 78005	LINEAR SYSTEM ANALYSIS AND CONTROL	
ENGR 78006	NONLINEAR SYSTEMS AND CONTROL	
ENGR 78007	DIGITAL CONTROL SYSTEMS	
ENGR 78008	INTRODUCTION TO ROBUST CONTROL	
ENGR 78101	AUTONOMOUS UNMANNED AERIAL SYSTEMS	
Structure and Materials		
ENGR 72111	STRENGTH OF MATERIALS FOR ENGINEERS	
ENGR 72363	MATERIALS SELECTION IN DESIGN AND APPLICATIONS	
ENGR 75901	INTRODUCTION TO FINITE ELEMENT METHOD AND APPLICATIONS	

Systems and Design		
ENGR 78003	SPACECRAFT DESIGN	
ENGR 78102	INTELLIGENT SENSING AND PLANNING OF UNMANNED AERIAL SYSTEMS	
Additional courses as approved by advisor		
Culminating Requirements		
ENGR 85098	RESEARCH (repeated for 9 credit hours total)	9
ENGR 85199	DISSERTATION I [2]	30
Minimum Total Credit Hours for Post-Baccalaureate Students:		**90**
Minimum Total Credit Hours for Post-Master's Students:		**60**

1 Post-baccalaureate students may apply toward the 30 credit hours a maximum 15 credit hours of coursework outside the College of Aeronautics and Engineering and 9 credit hours of research (maximum 18 credit hours total of research toward the degree).

2 Doctoral candidates, upon admission to candidacy, must register for ENGR 85199 for a total of 30 hours. It is expected that doctoral candidates will continuously register for ENGR 85199—and, thereafter, ENGR 85299—each semester until all requirements for the degree have been met. The doctoral candidate must successfully propose and defend their research dissertation in a public setting before the dissertation committee.

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 clearly problems and solutions in aerospace engineering, both verbally and in writing.