

# AEROSPACE ENGINEERING - PH.D.

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

## Examples of Possible Careers\*

### 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

## Contact Information

- Program Coordinator: **D. Blake Stringer | Stephanie Fussell**  
| caegraduatestudies@kent.edu  
330-672-2892
- Speak with an Admissions Counselor ( gradadmissions@kent.edu)

## Fully Offered

- Kent Campus

## Admission Terms

- Fall

**\*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 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.

## Admission Requirements

- Bachelor's degree in aerospace engineering or a closely related area from an accredited college or university, for unconditional admissions.
- Minimum 3.000 undergraduate or graduate GPA (on a 4.000 point scale) for unconditional admissions.
- 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 (paper-based version)
  - Minimum 79 TOEFL IBT score (internet-based version)
  - Minimum 77 MELAB score
  - Minimum 6.5 IELTS score
  - Minimum 58 PTE score
  - Minimum 100 Duolingo test score

For more information about graduate admissions, please visit the Graduate Studies website. For more information on international admission, visit the Office of Global Education website.

## 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.

## Program Requirements

### Major Requirements

Code	Title	Credit Hours
<b>Major Requirements</b>		
ENGR 81091	GRADUATE SEMINAR (taken three times)	3
Advisor-approved courses <sup>1</sup>		0-30
Engineering-Focus Electives, choose from the following:		18
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 78200	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 78100	INTELLIGENT SENSING AND PLANNING OF UNMANNED AERIAL SYSTEMS	
Additional courses as approved by advisor		
<b>Culminating Requirements</b>		
ENGR 85098	RESEARCH (repeated for 9 credit hours total)	9
ENGR 85199	DISSERTATION I <sup>2</sup>	30
<b>Minimum Total Credit Hours for Post-Baccalaureate Students:</b>		<b>90</b>
<b>Minimum Total Credit Hours for Post-Master's Students:</b>		<b>60</b>

- <sup>1</sup> 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).
- <sup>2</sup> 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.