Master of Science in Aerospace Engineering

Aerospace Engineering

The aerospace engineering discipline involves the design, production, operation, and support of aircraft and spacecraft. Aerospace engineers solve problems, design aircraft and spacecraft, conduct research, and improve processes for the aerospace industry.

Mission

KU Aerospace Engineering is an international leader in aerospace education and is committed to developing a global community for students, educators, and researchers by strategically aligning teaching, research, and service missions. A world-class graduate and undergraduate education focused on designing, simulating, building, testing, and flying aerospace vehicles is provided. The department invests in research infrastructure and chooses outstanding students who will work with faculty, and staff to conduct basic and applied research of relevance to aerospace vehicles and systems. The department supports the aerospace profession by educating the public, by maintaining the KU aerospace short-course program, and by advising policy-makers in government, industry, and disciplinary professional organizations.

Educational Objectives

Aerospace engineering prepares graduates for professional practice in the aerospace industry and graduate study in aerospace engineering. Achievement is measured through assessment of the performance of graduates three to six years after graduation. Graduates must demonstrate the following measurable learning outcomes:

1. Competence in the analysis, test, and design of aerospace systems and components using contemporary techniques, equipment, and software.
2. An understanding of the professional responsibilities associated with the special public safety and economic aspects of the aerospace industry.
3. The ability to communicate analysis, test, and design results to engineers and nonengineers.
4. The ability to work effectively in interdisciplinary teams.
5. An understanding of the need for lifelong learning.

Graduate Admission to the Department of Aerospace Engineering

Application Requirements

In order for applications to be considered complete, the following materials must be submitted online with the application by the posted deadline:

1. Transcripts from all degree granting institutions (If admitted, official transcripts must be submitted by all applicants - including KU undergraduate students). Transcripts are considered official when sent directly from the institution either by mail or e-mailed directly to the University of Kansas. KU does not consider transcripts that come from applicants or that have been in the applicant's possession as official. You may be admitted by the department with the transcript uploaded to your application; however, University Graduate Admissions must receive the official transcripts - sent directly from your institution – before you will be officially admitted to the university. Degree conferral transcripts must be received by the end of your first semester of graduate enrollment to be eligible to continue enrollment. The official transcripts must show that your undergraduate degree has been conferred.
2. Three letters of recommendation. Recommenders will receive instructions on submission at the time the application is submitted.
3. Resume or CV
4. Official GRE score report
5. Statement of Objectives form (included in the application)
6. Official TOEFL, IELTS, or PTE score report (International students only)
7. Statement of Financial Resources (International students only)

* Please note: All application materials must be received before any kind of decision is made. Documentation sent in addition to that requested above is not required and may be destroyed. Do not send paper documents unless requested.

Admissions Deadline

Our department priority deadlines for admission are:

Fall Admission: December 1 (all applicants)
Spring & Summer Admission: September 15 (all applicants)

For full consideration for fellowships, scholarships and research/teaching assistantships, applications should be received by December 1 (for fall admissions). Application materials should indicate the interest in financial assistance or research/teaching assistantships.

Application Fees

Domestic: $65
International: $85

Document Specifications

Letters of Recommendation

The letter of recommendation form should be completed and sent with a signed document from your chosen references. Recommenders will receive instructions on submission at the time the application is submitted.

Statement of Objectives

To complete the Statement of Objectives Form, the essay should be no longer than the space provided. The Statement of Objectives form is included in the online application.

Statement of Financial Resources

As a part of the application process, all international students must submit credible evidence of financial support for the first year of study (http://iss.ku.edu/cost-sheets). Financial documents must be less than 6 months old, indicating the type and amount of currency in US dollars. If the bank account is not in the applicant's name, please attach a statement signed by the account holder indicating the relationship to the student for whom the support will be provided. There is no form for the Statement of Financial Resources, please send only the form(s) of documentation listed below.

Acceptable evidence includes:
Admissions Standards

Students who wish to apply for admission to the Aerospace Engineering graduate program must have, as a minimum, a BSAE degree or a BS degree in a closely-related field from a university or college with a program equivalent to the KU BSAE program. Students applying with either a BS degree from an engineering program that is not equivalent to the KU BSAE program, or a BS degree from a non-aerospace engineering program may have to make-up certain undergraduate AE courses at the discretion of the department graduate advisor. Such students will be admitted provisionally until a plan of study for make-up courses is completed.

Regular Admission

Master’s program regular admission requires an undergraduate GPA of at least a 3.0.

Doctoral program regular admission requires an undergraduate GPA of at least 3.0 and a GPA of at least 3.5 for courses taken as part of a master’s program.

Provisional Admission

International students are not eligible for provisional admission due to Department of Homeland Security requirements.

In exceptional cases, applicants with a GPA between 2.75-2.99 may be granted provisional admission. Students with educational backgrounds other than aerospace engineering may be admitted provisionally.

Provisional students must achieve a 3.0 GPA by the end of their first semester. Failure to achieve the minimum GPA can result in dismissal. In extenuating circumstances, a student may be allowed to continue provisionally for one additional semester.

Students admitted provisionally are not eligible to hold GTA or GRA appointments.

Transfer Credit for Graduate Courses

Up to six hours of approved graduate work may be transferred to KU from other universities. Students with a B.S. degree from KU may transfer up to eight hours of approved graduate work from other universities.

GRE Requirements

Applicants must have a minimum of 50% on the Verbal and Analytical sections of the GRE and 85% on the Quantitative section. Applicants with lower scores, but otherwise exceptional record, will be considered for provisional admission.

English Proficiency Requirement

International students and students who indicated English as a second language, are required to show proof of English proficiency for admission purposes and must check-in at the Applied English Center (http://www.aec.ku.edu) (AEC) upon arrival on campus for orientation. This process serves to confirm each student's level of English proficiency and determine whether English courses will be included as a requirement of the student’s academic program. Note: Students who demonstrate English proficiency at the waiver level or who have earned a degree from one of the specified English-speaking countries listed in the policy (http://policy.ku.edu/graduate-studies/english-proficiency-international-students) are not required to check in at the AEC (see eligibility requirements on the Graduate Studies website (https://graduate.ku.edu/english-proficiency-requirements)).

Refer to link (http://policy.ku.edu/graduate-studies/english-proficiency-international-students) for university policy.

Funding

Scholarships/Fellowships - The Aerospace Engineering department nominates applicants for University and School of Engineering scholarships and fellowships based on academic merit and other selection criteria.

Graduate Teaching Assistantships (GTAs) - Teaching Assistantships are available and are awarded competitively based on academic qualifications through the department or school.

Graduate Research Assistantships (GRAs) - Students work with their potential academic advisor/mentor to obtain a funded position on a research project.

*Important note: acceptance into the graduate program DOES NOT guarantee financial aid. To be considered for financial aid, applications must be received by the priority deadline.

A variety of scholarships, fellowships, and assistantships are available to graduate students through the School of Engineering and KU. Learn more at https://engr.ku.edu/graduate-scholarships

Visit Us

The graduate program staff is happy to work with all prospective students in determining the fit between the student and the program. In order to determine this, we feel that visiting our campus in Lawrence is a very important step. In order to facilitate your visit to KU, there are two main options:

The first, and most preferred, option entails simply applying for admission to the program. All prospective students are welcome to attend our Open House in mid-October and mid-March. Eligible admitted students are invited to participate in Campus Visit Days in late February (prior to the fall semester of your intended matriculation). These organized campus visit opportunities will allow you to gather a great deal of first-hand information which we hope will help you in making a final decision about whether to attend KU.

The second option is making arrangements to visit us on your own, outside of organized events. With early notification, we will do our best to work with you to provide information and schedule appointments with faculty when possible. Please contact us if you feel that this is the best option for you.

Contact Information

Please contact the AE Graduate Program Coordinator at aerohawk@ku.edu or (785) 864-2960, to schedule a visit or with questions about the application process.
M.S. Degree Requirements

The Master of Science (M.S.) program in Aerospace Engineering (AE) has 2 options.

- The **Thesis Option** requires a minimum of 30 credit hours of graduate work including 3 hours of math, and 6 hours earned in the satisfactory completion of a thesis.

- The **Project Option** requires a minimum of 33 hours of graduate work, including 3 hours of math, with an emphasis on an independent investigation that must include 3 hours of project, but a thesis is not required.

Graduate mathematics courses are considered those taken at the 600 level and higher. Master’s students may choose any one mathematics course (up to 3 hours) at the level 500 and higher. AE 712, Techniques of Engineering Evaluation, is the only mathematics-intensive engineering course that will help fulfill the graduate mathematics requirement.

Students must take at least one semester of AE 690, Professional Development for Graduate Students.

The candidate must pass a final oral examination in which the thesis or research project (results of the independent investigation) is defended and the candidate demonstrates a working knowledge in aerospace engineering.

Thesis or Project Committee

As part of the Plan of Study (https://gradplan.engr.ku.edu/accounts/login/?next=) a student is required to form a thesis or project committee with a minimum of three Graduate Faculty, a minimum of two must be AE faculty members. Additional committee members may be selected by the student from either AE or other School of Engineering faculty members. The chairman of the committee must be an AE faculty member.

Plan of Study

Before the end of the first semester of graduate study the student must complete an online Plan of Study (https://gradplan.engr.ku.edu/accounts/login/?next=) which includes the following information:

1. Three committee members. As a general rule these committee members will be drawn from the AE faculty but exceptions may be approved.

2. Proposed area of research

3. Proposed sequence of courses through the semester of graduation.

4. Proposed semester of graduation.

The Plan of Study shall indicate for each course which requirement is being satisfied. Unique situations can be accommodated with the combined approval of the AE department graduate advisor and the students major advisor.