AEROSPACE ENGINEERING, MS

for the degree of Master of Science in Aerospace Engineering (on campus & non-thesis online)

The Department of Aerospace Engineering offers both MS with thesis (https://aerospace.illinois.edu/academics/graduate/ms-degree-program/ms-degree-thesis/) and MS non-thesis (https://ae.illinois.edu/academics/graduate/ms-degree-program/ms-degree-non-thesis-campus/) programs. Students in the MS with thesis program are required to have a research advisor and applicants are encouraged to contact department faculty (https://aerospace.illinois.edu/directory/faculty/) in their areas of interest to inquire about possible research and funding opportunities.

Interested students may specialize in computational science and engineering via the Computational Science & Engineering (http://catalog.illinois.edu/graduate/engineering/concentration/computational-science-engineering/) optional graduate concentration.

Admission Requirements

The Department of Aerospace Engineering accepts applications for admission to the MS with thesis and MS non-thesis graduate programs per the following deadlines:

Fall Admission
For MS with thesis admission and full consideration for funding opportunities: January 1
For MS non-thesis admission: July 1

Spring Admission
For MS with thesis admission and full consideration for funding opportunities: October 1
For MS non-thesis admission: December 1

Typically, the prerequisite for graduate study is the equivalent of the BS in Aerospace Engineering (https://aerospace.illinois.edu/academics/undergraduate/); however, graduates of curricula leading to degrees in other fields of engineering, the physical sciences, or mathematics may also be admitted to advanced study. A minimum grade point average of 3.00 (A = 4.00) for the last two years of undergraduate study is required. However, having a GPA higher than the minimum is no guarantee of admission. Scores on the Graduate Record Examination (GRE) (http://ets.org/) general test are required of all applicants. There are no minimum GRE score requirements.

Applicants to the Aerospace Engineering graduate program are asked to complete a supplemental form that will capture additional information about their specific interests. Applicants receive an email after submitting the online application which contains the link to the supplemental form. Applicants may select up to three areas from the following list:

- additive manufacturing
- aerospace structures
- combustion and propulsion
- experimental fluid mechanics
- information technology
- robotics
- aeroacoustics
- aerospace systems design and simulation
- composite materials
- flow control
- laser and optical diagnostics
- space environment and space mission design
- aerodynamics
- applied aerodynamics
- computational fluid dynamics
- fracture mechanics and fatigue
- nanomechanics and micromechanics
- space systems
- aerelasticity
- astrodynamics
- computational mechanics
- computational mechanics and estimation
- nanosatellites
- structural mechanics/structural dynamics design
- aerospace materials
- astrodynamics
- controls, dynamical systems and estimation
- plasma physics
- autonomous vehicles
- hypersonics
- unmanned aerial vehicles

All applicants whose native language is not English are required to submit the results of the TOEFL (http://www.toefl.org/) or International English Language Testing System (IELTS) (http://www.ielts.org/) as evidence of meeting the English proficiency requirements for full admission status (http://grad.illinois.edu/admissions/instructions/04c/). Under certain circumstances applicants may be exempt (https://grad.illinois.edu/admissions/instructions/04c/) from the TOEFL/IELTS requirement.

Applicants who are non-native speakers of English and who wish to be considered for teaching assistantships must provide evidence (https://grad.illinois.edu/admissions/taengprof.htm) of spoken English language proficiency. Specifically, they must score 24 or higher on the SPEAK portion of the TOEFL exam and 8 or higher on the speaking sub-section of the IELTS.

For full information on admission requirements and how to apply, see the department's graduate programs Web site (https://aerospace.illinois.edu/academics/graduate/).

Information listed in this catalog is current as of 08/2022
Financial Aid

Students in the MS non-thesis program are not eligible for funding from the department. Financial aid for graduate students in thesis graduate programs is available in the form of fellowships (https://grad.illinois.edu/fellowships/about/), as well as teaching and research assistantships (https://grad.illinois.edu/assistantships/). Exceptionally qualified MS with thesis candidates will be considered for support upon application.

All applicants, regardless of US citizenship, whose native language is not English and who wish to be considered for teaching assistantships must demonstrate spoken English language proficiency (http://www.grad.illinois.edu/admissions/taengprof.htm) by achieving a minimum score of 24 on the speaking subsection of the TOEFL iBT or 8 on the speaking subsection of the IELTS. For students who are unable to take the TOEFL or IELTS, a minimum score of 4CP is required on the EPI test (http://cte.illinois.edu/testing/oral_eng/epi_overview.html), offered on campus. All new teaching assistants are required to participate in the Graduate Academy for College Teaching (https://citl.illinois.edu/citl-101/teaching-learning/grad-academy-for-college-teaching/) conducted prior to the start of the semester.

Graduate Teaching Experience

MS students are not required to hold a teaching assistantship.

Department Research

Research activities in the Department of Aerospace Engineering encompass a wide range of problem areas in aerospace engineering and related engineering disciplines as described on the department’s research area Web site (https://aerospace.illinois.edu/research/).

There are several nationally-renowned interdisciplinary centers in The Grainger College of Engineering where Aerospace Engineering faculty members engage in research along with many other campus faculty members. A list of these, along with links to full descriptions, appears at the department’s interdisciplinary centers Web site (https://aerospace.illinois.edu/research/interdisciplinary-centers/). Among these are the Beckman Institute for Advanced Science and Technology, Center for Cryogenic High-Efficiency Electrical Technologies for Advanced Science and Technology, Center for Exascale-enabled Scramjet Design (CEESD), Center for Hypersonics and Entry Systems Studies (CHESS), Center for UAS Propulsion (CUP), Coordinated Science Lab (CSL), Micro and Nanotechnology Laboratory, Information Trust Institute (ITI), and the National Center for Supercomputing Applications (NCSA).

Members of the Aerospace Engineering Department have access to a wide range of excellent research facilities. These laboratories support a wide range of activity and are described at the department's research facilities Web site (https://aerospace.illinois.edu/research/research-facilities/).

Other Graduate Programs in the Department of Aerospace Engineering

degrees:

Aerospace Engineering, PhD (http://catalog.illinois.edu/graduate/engineering/aerospace-engineering-phd/)
optional concentrations:
  Computational Science & Engineering (http://catalog.illinois.edu/graduate/engineering/concentration/computational-science-engineering/)
Aerospace Engineering, Direct PhD (https://aerospace.illinois.edu/academics/graduate/phd-program/phd-student-status-and-requirements/direct-phd/)
optional concentrations:
  Computational Science & Engineering (http://catalog.illinois.edu/graduate/engineering/concentration/computational-science-engineering/)
Aerospace Systems Engineering (http://catalog.illinois.edu/graduate/engineering/engineering-meng/aerospace-systems/)
available for:
  Engineering, MENG (http://catalog.illinois.edu/graduate/engineering/engineering-meng/)

The Department of Aerospace Engineering (AE) offers graduate programs leading to the degrees of Master of Science and Doctor of Philosophy in Aerospace Engineering and a Master of Engineering in Engineering degree with a concentration in Aerospace Systems Engineering.

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