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

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director of graduate studies: Daniel J Bodony (bodony@illinois.edu)
overview of admissions & requirements: https://aerospace.illinois.edu/admissions/graduate (https://aerospace.illinois.edu/admissions/graduate/)
overview of grad college admissions & requirements: https://grad.illinois.edu/admissions/apply (https://grad.illinois.edu/admissions/apply/)
department website: https://aerospace.illinois.edu/
program website: https://aerospace.illinois.edu/academics/graduate/ms-degree-program (https://aerospace.illinois.edu/academics/graduate/ms-degree-program/)
department faculty: https://aerospace.illinois.edu/directory/faculty (https://ae.illinois.edu/directory/faculty/)
college website: https://grainger.illinois.edu/
contact: Staci McDannel (tank@illinois.edu)
address: 306 Talbot Laboratory, 104 S Wright St, Urbana, IL 61801
phone: (217) 333-3674
email: ae-grad@illinois.edu

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 structure
- applied aerodynamics
- autonomous materials
- combustion systems design and simulation
- computational aerodynamics
- computational controls, fluid dynamics
- experimental fluid mechanics
- fracture mechanics and fatigue
- GPS hypersonics
- information technology laser and optical diagnostics
- nanomechanics
- and micromechanics
- robotics space environment and space mission design
- structural mechanics
- space systems structural dynamics
- dynamic systems and estimation
- unmanned aerial vehicles
- additive manufacturing
- aerospace structure
- applied aerodynamics
- autonomous materials
- combustion systems design and simulation
- computational aerodynamics
- computational controls, fluid dynamics
- experimental fluid mechanics
- fracture mechanics and fatigue
- GPS hypersonics
- information technology laser and optical diagnostics
- nanomechanics
- and micromechanics
- robotics space environment and space mission design
- structural mechanics
- space systems structural dynamics
- dynamic systems and estimation
- 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/).

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.
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.

Opportunity also exists for specializing in energy and sustainability engineering via the Energy and Sustainability Engineering (EaSE) Graduate Certificate Option (http://ease.illinois.edu/)

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

The MS in Aerospace Engineering is also offered online. The degree requirements are the same as for the on-campus MS non-thesis program and the degree awarded to online students is the same degree awarded to resident students. Online students have five years to complete the program.

Online students should develop a course program plan in consultation with their advisor. Suggested program tracks (https://aerospace.illinois.edu/academics/graduate/suggested-program-tracks/) are provided for each of the three main technical divisions in the department:

1. Aerodynamics, Fluid Mechanics, Combustion and Propulsion (AFMCP);
2. Astrodynamics, Controls and Dynamical Systems (ACDS); and

For additional details and requirements, refer to the department’s Website (http://aerospace.illinois.edu/) and the Graduate College Handbook (https://grad.illinois.edu/gradhandbook/).

**Thesis Option**

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<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>AE 599</td>
<td>Thesis Research (min-max applied toward the degree)</td>
<td>8</td>
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<tr>
<td>AE 590</td>
<td>Seminar (registration of 0 hours every term while in residence)</td>
<td>0</td>
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</tbody>
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Information listed in this catalog is current as of 11/2021
Aerospace Engineering breadth requirement (https://aerospace.illinois.edu/academics/graduate/breadth-and-mathematics-requirements/) 6-8

One mathematics course from an approved list (https://aerospace.illinois.edu/academics/graduate/breadth-and-mathematics-requirements/) 3-4

Elective courses chosen in consultation with an advisor (subject to Other Requirements and Conditions below) 12-15

Total Hours 32

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<tr>
<th>Requirement</th>
<th>Description</th>
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<tr>
<td>Other Requirements and Conditions</td>
<td>A minimum of 16 hours of AE course work at the 400-level and above.</td>
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<td></td>
<td>A minimum of 12 500-level credit hours overall applied toward the degree, with 8 hours being AE courses.</td>
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<td>A maximum of 4 hours of AE 597 (or other independent study) may be applied toward the elective course work requirement.</td>
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<td></td>
<td>Attendance at all Aerospace Engineering AE 590 seminars each semester while on campus.</td>
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<td>Minimum GPA:</td>
<td>3.0</td>
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<td></td>
<td>Generally, students holding a research assistantship will not be allowed in the non-thesis option.</td>
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<td></td>
<td>A departmental petition is required to change from the thesis to the non-thesis option and vice-versa.</td>
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1 For additional details and requirements refer to the department’s Website (https://aerospace.illinois.edu/) and the Graduate College Handbook (http://grad.illinois.edu/gradhandbook/).

Non-Thesis Option

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<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>AE 590</td>
<td>Seminar (registration for 0 hours every term while in residence)</td>
<td>9-12</td>
</tr>
</tbody>
</table>

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