AEROSPACE ENGINEERING, BS-MS

for the joint degree of Bachelor of Science in Aerospace Engineering and Master of Science in Aerospace Engineering

The joint B.S.-M.S. program in AE combines two degrees: a B.S. in AE with a M.S. in AE. Current AE students enrolled in The Grainger College of Engineering with junior standing (normally at least 90 credit hours, including those in process, and at least one year of undergraduate coursework remaining) who maintain superior academic performance are eligible to apply for this program. The B.S. degree within the B.S. - M.S. program is accredited by the Engineering Accreditation Commission of ABET (https://www.abet.org) under the same criteria as the traditional 128 hour B.S. degree. The program is designed to broaden a student's knowledge beyond that in the standard four-year curriculum. Students admitted to the program will receive both degrees once all requirements for both the B.S.-M.S. degree have been successfully completed.

Admission
For deadlines and procedures, consult the Aerospace department website (https://aerospace.illinois.edu/). Current Grainger AE students can apply after they complete their junior-level courses, but before they start their senior year. Students with an overall GPA of at least 3.00 may apply for admission to the program. Admission decisions are based on overall academic performance, letters of reference, and statement of purpose. The GRE general test is not required.

Students provisionally admitted to the program:

- are assigned a graduate academic advisor when admitted.
- must maintain an overall GPA of 3.00 through completion of the B.S. component of the program in order to remain in the program.
- must maintain a technical GPA of 3.40 through completion of the B.S. component of the program.
- may register for graduate courses and earn graduate hour credits, with approval from their graduate academic advisor, when they have less than 12 credit hours remaining in their B.S. component.
- must earn at least 121 hours of undergraduate credit and satisfy all B.S. requirements of this program to be officially admitted to the Graduate College.

Upon successful completion of the B.S. component students:

- must apply and be officially admitted into the Graduate College.
- are assigned a graduate academic advisor when B.S. courses are completed.
- will be issued letters of admission from the Graduate College and the AE Department, at which time they will be considered graduate students and assessed graduate tuition the following semester.
- must satisfy the graduate student minimum residence requirement, which is 24 graduate credit hours.
- must continue to maintain a graduate GPA of 3.00 or better in order to remain in the combined program.

Withdrawal
Students may withdraw from the program at any time by notifying the AE Undergraduate Programs Office. Students who do not complete all 5-year B.S.-M.S. degree program requirements may request by petition to have graduate hours earned converted to undergraduate hours and applied toward a traditional B.S. in AE degree. Students reverting to a traditional B.S. degree program must complete 128 hours and satisfy all degree requirements. Graduate credit not used to fulfill the B.S. degree requirements will remain on the transcript and may, at some future point, be considered for transfer to another degree program.

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Course Requirements

B.S. Component (121 hours)

- Same required courses as the traditional B.S. degree with minimum hours required reduced from 128 to 121.
- The reduction of 7 credit hours includes:
  a. 4 hours in Free Electives in both AE curricula
  b. 3 hours in other non-AE Technical Electives
- Overall GPA of 3.40 must be maintained through completion of B.S. component of the program.
- Students can apply after they complete their junior-level courses, but before they start their senior year.
- Illinois undergraduate student minimum residence requirement must be satisfied.
- If the student withdraws from the MS component they must revert to the traditional BS degree program and satisfy all degree requirements of the BS curriculum.

At the graduate level, requirements are identical for both the M.S. Non-Thesis Track (http://catalog.illinois.edu/graduate/ms-aero-engin/#degreerequirementstext) (32 additional hours of coursework) and the M.S. Thesis Track (http://catalog.illinois.edu/graduate/ms-aero-engin/#degreerequirementstext) (32 additional hours of coursework).

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Sample Sequence
This sample sequence is intended to be used only as a guide for degree completion. All students should work individually with their academic advisors to decide the actual course selection and sequence that works best for them based on their academic preparation and goals. Enrichment programming such as study abroad, minors, internships, and so on may impact the structure of this four-year plan. Course availability is not guaranteed during the semester indicated in the sample sequence.

Students must fulfill their Language Other Than English requirement by successfully completing a third level of a language other than English. Also, students must take 6 hours from the campus General Education Social and Behavioral Sciences list and 6 hours from campus General Education Humanities and the Arts list. Students must complete the campus cultural studies requirement by completing (i) one western/comparative culture(s), (ii) one non-western, and (iii) one U.S. minority culture(s) course from the General Education cultural studies lists. See the corresponding sections on the Degree and General Education Requirements *(*http://catalog.illinois.edu/general-information/degree-general-education-requirements/*).*

Technical elective credits totaling twelve hours, selected from a departmentally approved list of Technical Electives, satisfying these distribution requirements: (i) six hours of Aerospace Engineering Technical

Electives; (ii) six hours of Aerospace Engineering Technical Electives or Non-Aerospace Engineering Technical Electives.

At least 12 hours must be in 500 level courses, and at least 8 of these 12 hours must be in Aerospace Engineering (may include up to 4 hours of 599 research credit). Breadth requirement coursework may be 500 level coursework and will count toward this requirement. If a breadth requirement counts also as a 500 level course, additional elective courses may be taken.

First Year

First Semester	Hours	Second Semester	Hours
AE 100	2	MATH 231	3
ENG 100	1	PHYS 211	4
MATH 221 (May substitute with MATH 220)	4	CS 101	3
CHEM 102	3	RHET 105 or AE 140	4
CHEM 103	1	General Education elective course	3
AE 140 or RHET 105	2		
	13		**17**

Second Year

First Semester	Hours	Second Semester	Hours
MATH 241	4	MATH 285	3
PHYS 212	4	ME 200	3
TAM 210	2	AE 202	3
MSE 280	3	TAM 212	3
MATH 257	3	General Education elective course	3
	16		**15**

Third Year

First Semester	Hours	Second Semester	Hours
AE 311	3	AE 312	3
AE 321	3	AE 323	3
AE 352	3	AE 353	3
ECE 205	3	AE 370	3
General Education elective course	3	General Education elective course	3
	15		**15**

Fourth Year

First Semester	Hours	Second Semester	Hours
AE 442 (Sequence satisfies the General Education Advanced Composition requirement)	3	AE 443 (Sequence satisfies the General Education Advanced Composition requirement)	3
AE 433	3	AE 461	2
AE 460	2	Technical elective course	3
AE 483	2	Technical elective course	3
Technical elective course	3	Free elective course	2
	13		**13**

Fifth Year

First Semester	Hours	Second Semester	Hours
AE 400 or 500-level course	4	AE 400 or 500-level course	4
AE 400 or 500-level course	4	Math Requirement course	4
AE 1st Breadth requirement course	4	AE 2nd Breadth requirement course	4
AE 599 (or additional elective)	4	AE 599 (or AE 3rd Breadth requirement course)	4
	16		**16**

Total Hours 149

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Aerospace Engineering website (https://aerospace.illinois.edu/)

Aerospace Engineering faculty (https://aerospace.illinois.edu/directory/faculty/faculty-members/)

The Grainger College of Engineering (https://grainger.illinois.edu/)