

AEROSPACE ENGINEERING, BACHELOR OF SCIENCE IN AEROSPACE ENGINEERING/ MASTER OF SCIENCE

B.S. Portion of the Program Accredited by the Engineering Accreditation Commission of ABET, <http://www.abet.org>

In order to progress in your curriculum in the Gallogly College of Engineering, and as a specific graduation requirement, a grade of C or better is required in each course in the curriculum, including all prerequisite courses. AME courses are sequential and usually offered only in the semester shown; note prerequisites.

In order to progress into 2nd year courses in AME, students must successfully complete (grade C or better) MATH 1914; MATH 2924; PHYS 2514 and CHEM 1315 with 3.0 Combined Retention GPA, and possess a minimum 3.0 Combined Retention GPA in 24 or more credit hours. AP credit is acceptable for any of these required courses.

Approval for admission to the accelerated BS/MS program must be initiated at the beginning of the second semester of the junior year. Students may enter the accelerated program based on the undergraduate degree pattern offered in the year they first enrolled in the Oklahoma State System of Higher Education or later. Students are eligible for graduate status upon graduation with the Bachelor of Science in Aerospace Engineering.

Two college-level courses in a single foreign language are required; this may be satisfied by successful completion of 2 years in a single foreign language in high school. Students who must take foreign language at the University will have an additional 6-10 hours of coursework.

| Course | Title | Credit Hours |
|---------------------------|--|--------------|
| Freshman | | |
| First Semester | | |
| ENGL 1113 | Principles of English Composition (Core I) | 3 |
| CHEM 1315 | General Chemistry (Core II) ¹ | 5 |
| MATH 1914 | Differential and Integral Calculus I (Core I) ² | 4 |
| HIST 1483 or HIST 1493 | United States, 1492 to 1865 (Core IV) or United States, 1865 to the Present | 3 |
| ENGR 1411 | Freshman Engineering Experience ³ | 1 |
| Credit Hours | | 16 |
| Second Semester | | |
| ENGL 1213 or EXPO 1213 | Principles of English Composition (Core I) or Expository Writing | 3 |
| MATH 2924 | Differential and Integral Calculus II ² | 4 |
| PHYS 2514 | General Physics for Engineering and Science Majors (Core II) | 4 |
| P SC 1113 | American Federal Government (Core III) | 3 |
| C S 1313 | Programming for Non-Majors with C | 3 |
| Credit Hours | | 17 |
| Sophomore | | |
| First Semester | | |
| MATH 2934 | Differential and Integral Calculus III ² | 4 |

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| PHYS 2524 | General Physics for Engineering and Science Majors | 4 |
| AME 2113 | Statics | 3 |
| AME 2213 | Thermodynamics | 3 |
| AME 2223 | Introduction to Aerospace Engineering | 3 |
| Credit Hours | | 17 |
| Second Semester | | |
| MATH 3413 | Physical Mathematics I | 3 |
| MATH 3401 | Numerical Methods With Matlab | 1 |
| AME 2303 | Materials, Design and Manufacturing Processes | 3 |
| AME 2533 | Dynamics | 3 |
| AME 2623 | Circuits and Sensors | 3 |
| Approved Elective: Artistic Forms (Core IV) ⁴ | | 3 |
| Credit Hours | | 16 |
| Junior | | |
| First Semester | | |
| AME 3112 | Solid Mechanics Lab | 2 |
| AME 3143 | Solid Mechanics | 3 |
| AME 3253 | Aerodynamics | 3 |
| AME 3272 | Windtunnel Laboratory | 2 |
| AME 4383 | Control Systems | 3 |
| ENGR 2002 | Professional Development | 2 |
| Credit Hours | | 15 |
| Second Semester | | |
| AME 3103 | Interactive Engineering Design Simulation | 3 |
| AME 3333 | Flight Mechanics | 3 |
| AME 3523 | Aerospace Structural Analysis | 3 |
| AME 3623 | Embedded Real-Time Systems | 3 |
| ENGL 3153 | Technical Writing | 3 |
| Approved Experimental Elective ⁵ | | 2 |
| Credit Hours | | 17 |
| Senior | | |
| First Semester | | |
| AME 4243 | Aerospace Propulsion Systems | 3 |
| AME 4273 | Aerospace Systems Design I | 3 |
| AME 5493 | Space Sciences and Astrodynamics | 3 |
| AME 4513 | Flight Controls | 3 |
| AME Graduate Elective ⁶ | | 3 |
| Credit Hours | | 15 |
| Second Semester | | |
| AME 4373 | Aerospace Systems Design II (Capstone) | 3 |
| COMM 3513 | Intercultural Communication (or an advisor-approved substitution) (Western Civ. & Culture - Core IV) ⁴ | 3 |
| ANTH 4623 | Approaches to Cross-Cultural Human Problems (or an advisor-approved substitution) (Non-Western Culture - Core IV) ⁴ | 3 |
| Approved Elective: Social Science (Core III) ⁴ | | 3 |
| AME Graduate Elective ⁶ | | 3 |
| Credit Hours | | 15 |

Fourth Year**Summer**

| | | |
|----------|---|-----|
| AME 5990 | Special Projects (Non-thesis students only) ⁷ | 0-3 |
| | Credit Hours | 0-3 |

Fifth Year**First Semester**

| | | |
|--|--|-------|
| AME 5573 | Advanced Engineering Analysis I (or MATH Elective) | 3 |
| Choose one of the following: ⁷ | | 2-3 |
| AME 5980 | Research for Master's Thesis (Thesis Option) | |
| Graduate-level Elective (Non-Thesis Option) ⁶ | | |
| AME Graduate Elective ⁶ | | 3 |
| AME Graduate Elective ⁶ | | 3 |
| | Credit Hours | 11-12 |

Second Semester

| | | |
|--|--|---------|
| Choose one of the following: ⁷ | | 3-4 |
| AME 5980 | Research for Master's Thesis (Thesis Option) | |
| Graduate-level Elective (Non-Thesis Option) ⁶ | | |
| AME Graduate Elective ^{6,7} | | 3 |
| AME Graduate Elective ⁶ | | 3 |
| AME Graduate Elective ⁶ | | 3 |
| | Credit Hours | 12-13 |
| | Total Credit Hours | 152-156 |

¹CHEM 1315 can be substituted with CHEM 1335 (Fall only).

²MATH 1823, MATH 2423, MATH 2433, and MATH 2443 sequence can be substituted for MATH 1914, MATH 2924, and MATH 2934.

³Engineering transfer students may take ENGR 3511 in place of ENGR 1411.

⁴To be chosen from the University-Wide General Education Approved Course List. Three of these 12 hours must be upper-division (3000-4000). See list online.

⁵It is recommended that a student take AME 4802 for the experimental elective.

⁶Fourth and fifth year graduate electives must satisfy MS in aerospace engineering requirements.

⁷Dependent upon whether a student chooses the thesis or non-thesis option. Non-thesis option additionally requires: AME 5990 (3 hrs.) to be taken in the Summer between the Senior and the Fifth Year, and **Comprehensive Exam** to be taken in the last semester of study.

Courses designated as Core I, II, III, IV or Capstone are part of the General Education curriculum. Students must complete a minimum of 40 hours of General Education courses, chosen from the approved list.