

Department of Mechanical and Aerospace Engineering
B.S. Degree in Aerospace Engineering

AE Curricula

Aero Vehicle Design
Air Breathing Propulsion
Rocket Propulsion
Aero Vehicle Performance
Compressible Aerodynamics
Aero Structures
Stability and Control
Wing Theory
Engineering Materials
Engineering Dynamics
Thermodynamics
Computing Environment

Are You Taking The Right High School Courses?
You may receive placement in advanced courses
and accelerate your studies in AE at NCSU.
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Aerospace Engineering (036)

Freshman Year

Fall Semester

Course #	Course Name	Hrs
CH 101	Chemistry, A Molecular Science	3
CH 102	General Chemistry Lab	1
E 101	Introduction to Engr & Prob Solv	1
E 115	Intro to Computing Environ	1
ENG 101	Academic Writing and Research	4
MA 141	Calculus I	4
*** **	Human/Social Science Elect ¹	3
PE 10*	Fitness & Wellness Elective	1

Semester Total 18

Spring Semester

Course #	Course Name	Hrs
CH 201	Chemistry, A Quant. Science	3
MA 241	Calculus II	4
PY 205	Physics for Engr & Sc I	4
PE ***	Physical Education	1
*** **	Human/Social Science Elect ¹	3

Semester Total 15

Sophomore Year

Fall Semester

Course #	Course Name	Hrs
CSC 112	Intro to Comp - FORTRAN	3
MA 242	Calculus III	4
MAE 206	Engineering Statics	3
PY 208	Physics for Engr & Sc II	4

Semester Total 14

Spring Semester

Course #	Course Name	Hrs
GC 211	Intro Eng Graphics MAE	3
MA 341	Applied Differential Eq	3
MAE 208	Engineering Dynamics	3
MAE 261	Aero Vehicle Perf	3
MAE 314	Solid Mechanics	3
MSE 201	Struc Prop of Engr Mat	3

Semester Total 18

Junior Year

Fall Semester

Course #	Course Name	Hrs
ENG 331	Comm. Engr. & Tech.	3
MAE 301	Engr Thermodynamics I	3
MAE 355	Aerodynamics I	3
MAE 357	Expt Aero I	1
MAE 371	Aero Struc I	3
MAE 461	Dynamics & Controls	3
MAE 469	Controls Lab	1

Semester Total 17

Spring Semester

Course #	Course Name	Hrs
MAE 356	Aerodynamics II	3
MAE 358	Expt Aero II	1
MAE 453	Intro to Space Flight	3
MAE 462	Fli Veh Sta & Control	3
MAE 472	Aero Vehicle Struc II	3
MAE 473	Aero Vehicle Struc II Lab	1
*** **	Human/Social Science Elect ¹	3

Semester Total 17

Senior Year

Fall Semester

Course #	Course Name	Hrs
MAE 455	Boundary Layer Theory	3
MAE 475 ²	Propulsion I	3
MAE 466	Expt Aero III	1
MAE 478	Aero Vehicle Design I	3
MAE ***	Departmental Elective	3
*** **	Human/Social Science Elect ¹	3

Semester Total 16

Spring Semester

Course #	Course Name	Hrs
MAE 479	Aero Vehicle Design II	4
*** **	Human/ Social Science Elect ¹	3
*** **	Human/ Social Science Elect ¹	3
*** **	Human/ Social Science Elect ¹	3

Semester Total 13

Total Hours Required for Graduation = 128

All students who graduate from this curriculum must demonstrate competency in a foreign language at the 102 level (second semester).

All Human/ Social Science Electives must be selected from the approved College of Engineering lists.

¹ One of the H/SS courses must be an Ethics elective chosen from the following: MDS302, MDS304H, MDS320, PHI275, or PHI314.

² Students may take MAE476 (Rocket Propulsion) instead of MAE475.