

Aerospace Engineering (14AEBS Req Term Summer 2017)

Freshman Year				
<i>Fall Semester</i>		<i>Credits</i>	<i>Spring Semester</i>	<i>Credits</i>
CH	101 Chemistry, A Molecular Science ¹	3	CSC 113 Intro Comp MATLAB	3
CH	102 General Chemistry Lab ¹	1	GC 120 Foundations of Graphics	3
E	101 Introduction to Engr & Prob Solv ^{1,2}	1	MA 241 Calculus II ¹	4
E	115 Intro to Computing Environ ^{1,2}	1	PY 205 Physics for Engr & Sc I ¹	3
ENG	101 Academic Writing and Research ^{1,2}	4	PY 206 Physics for Engr & Sc I ¹ Lab	1
MA	141 Calculus I ¹	4	HES *** Health & Exercise Studies	1
EC	205 Economics (or EC 201 or ARE 201)*	3	E 102 Engineering in the 21st Cent	2
HESF	10* Fitness & Wellness	1		
		Semester Total		Semester Total
		18		17

Sophomore Year				
<i>Fall Semester</i>		<i>Credits</i>	<i>Spring Semester</i>	<i>Credits</i>
MA	242 Calculus III	4	MA 341 Applied Differential Eq	3
MAE	206 Engineering Statics ²	3	MAE 208 Engineering Dynamics ²	3
MAE	250 Introduction to Aerospace Engineering	1	MAE 214 Solid Mechanics ²	3
MAE	251 Aero Vehicle Perf ³	3	MAE 252 Aerodynamics I	3
PY	208 Physics for Engr & Sc II	3	MAE 253 Experimental Aerodynamics I	1
PY	209 Physics for Engr & Sc II Lab	1	*** ** GEP Requirement*	3
		Semester Total		Semester Total
		15		16

Junior Year				
<i>Fall Semester</i>		<i>Credits</i>	<i>Spring Semester</i>	<i>Credits</i>
MAE	201 Engr Thermodynamics F	3	MAE 351 Aerodynamics II	3
MAE	361 Dynamics & Controls	3	MAE 352 Experimental Aerodynamics II	1
MAE	371 Aero Struc I	3	*** ** Math Elective ⁷	3
MAE	372 Aero Vehicle Struc Lab	1	*** ** GEP Requirement*	3
	English Elective ⁴	3	MAE *** Flight/Space Elective ⁶	3
*** **	Ethics (GEP Requirement*) ⁵	3	MAE *** Structures Elective ⁶	3
		Semester Total		Semester Total
		16		16

Senior Year				
<i>Fall Semester</i>		<i>Credits</i>	<i>Spring Semester</i>	<i>Credits</i>
MAE	405 Controls Lab	1	MAE 481 Aero Vehicle Design II	3
MAE	435 Princ of Automatic Controls	3	*** ** GEP Requirement*	3
MAE	451 Experimental Aerodynamics III	1	*** ** GEP Requirement*	3
MAE	480 Aero Vehicle Design I	3	MAE *** Flight/Space Elective ⁶	3
MAE	*** Propulsion Elective ⁶	3	MAE *** Technical Elective ⁶	3
MAE	*** Technical Elective ⁶	3		
		Semester Total		Semester Total
		14		15

Minimum Total Credit Hours Required for Graduation 127

Major/Program requirements and footnotes:

¹Courses required for Change of Degree Audit (CODA): CH 101, 102; MA 141, 241; PY 205, 206 must be completed with C or higher.

²Minimum grade of C-, E 115 requires satisfactory completion (S).

³ Students must have a 2.0 GPA to enroll in this course.

⁴ENG 331 Comm Engr & Technology or other approved course.

⁵ Select from IDS 201, STS 302, STS 304, STS 320, PHI 214, PHI/STS 325 or PHI 375

⁶ **Flight/Space** (3 credit hours) Select either MAE 457 Flight Stability & Control or MAE 467 Intro to Space Flight; **Structures** (3 credit hours) Select either MAE 472 Aero Structures II or MAE 430 Applied Finite Element; **Propulsion** (3 credit hours) Select MAE 458 Propulsion or MAE 459 Rocket Propulsion; **Open** (6 credit hours) Select from approved lists: <https://www.mae.ncsu.edu/academics/undergraduate-programs/electives/>

⁷Math Elective (3 credit hours) Select either MA 305, MA 405, ST 305, ST 312, ST 370, ST 371, ST 372 or other approved course.

***General Education Program (GEP) requirements and GEP Footnotes:**

To complete the requirements for graduation and the General Education Program, the following category credit hours and co-requisites must be satisfied.

University approved GEP course lists for each of the following categories can be found at <http://oucc.ncsu.edu/gep-courses>.

Humanities (6 credit hours selected from two different disciplines/course prefixes)
Choose from the University approved GEP Humanities course list .

Social Sciences (6 credit hours selected from two different disciplines/course prefixes)
Choose 3 credits from the University approved GEP Social Sciences course list in a discipline other than Economics.
Economics 205 (or EC 201 or ARE 201), taken as part of the Major requirements, satisfies 3 credit hours needed to fulfill the GEP Social Sciences requirement.

Health and Exercise Studies (2 credit hours – must include one HESF 100-level course and one additional HES course)
Choose from the University approved GEP Health and Exercise Studies course list.

Additional Breadth - (3 credit hours to be selected from the following University approved GEP course lists)
Choose from the Humanities/Social Sciences/Visual and Performing Arts

Interdisciplinary Perspectives (5-6 credit hours)
Choose from the University approved GEP Interdisciplinary Perspectives course list.

The following **Co-Requisites** must be satisfied to complete the General Education Program requirements:

- I. **U.S. Diversity (USD)**
Choose from the University approved GEP U.S. Diversity course list or choose a course identified on the approved GEP course lists as meeting the U.S. Diversity (USD) co-requisite.
- J. **Global Knowledge (GK)**
Choose from the University approved GEP Global Knowledge course list or choose a course identified on the approved GEP course lists as meeting the Global Knowledge (GK) co-requisite.
- K. **Foreign Language proficiency** - Proficiency at the FL_102 level is required for graduation.