

# Aerospace Engineering (BS) (14AEBS)

## Freshman Year

Fall Semester	Credit	Spring Semester	Credit
CH 101 Chemistry, A Molecular Science <sup>1</sup>	3	CSC 113 Intro Comp MATLAB	3
CH 102 General Chemistry Lab <sup>1</sup>	1	GC 120 Found of Graphics	3
E 101 Introduction to Engr & Prob Solv <sup>1,2</sup>	1	MA 241 Calculus II <sup>1</sup>	4
E 115 Intro to Computing Environ <sup>1,2</sup>	1	PY 205 Physics for Engineer & Scientists I <sup>1</sup>	3
ENG 101 Academic Writing and Research <sup>1,2</sup>	4	PY 206 Physics for Engineer & Scientists I <sup>1</sup> Lab	1
MA 141 Calculus I <sup>1</sup>	4	HES_***Health & Exercise Studies	1
EC 205 Economics (or EC 201 or ARE 201)*	3	E 102 New Eng GEP course	2
HESF 10* Fitness and Wellness	1		
	18		17

## Sophomore Year

Fall Semester	Credit	Spring Semester	Credit
MA 242 Calculus III	4	MA 341 Appl Differential Eq	3
MAE 206 Engr Statics <sup>2,3</sup>	3	MAE 208 Engr Dynamics <sup>2,3</sup>	3
MAE 250 Intro Aerospace Engineering	1	MAE 214 Solid Mechanics <sup>2,3</sup>	3
MAE 251 Aero Vehicle Perf <sup>2</sup>	3	MAE 252 Aerodynamics I <sup>2</sup>	3
PY 208 Physics for Engineers & Scientists II	3	MAE 253 Expt Aero I	1
PY 209 Physics for Engr & Sc II Lab	1	GEP Requirement*	3
	15		16

## Junior Year

Fall Semester	Credit	Spring Semester	Credit
MAE 201 Engr Thermodynamics I <sup>2</sup>	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 <sup>7</sup>	3
MAE 372 Aero Vehicle Struc II Lab	1	GEP Requirement*	3
English Elective <sup>4</sup>	3	MAE ***Flight/Space Elective <sup>6</sup>	3
Ethics (GEP Requirement*) <sup>5</sup>	3	MAE *** Structures Elective <sup>6</sup>	3
	16		16

## Senior Year

Fall Semester	Credit	Spring Semester	Credit
MAE 405 Controls Lab	1	MAE 481 Aero Vehicle Design II	3
MAE 435 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 <sup>6</sup>	3
MAE *** Propulsion Elective <sup>6</sup>	3	MAE *** Technical Elective <sup>6</sup>	3
MAE *** Technical Elective <sup>6</sup>	3		
	14		15

**Minimum Credit Hours Required for Graduation: 127**

## Major/Program requirements and footnotes

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

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

<sup>3</sup> Students must have a 2.5 GPA is required to enroll.

<sup>4</sup> ENG 331 Comm Engr & Technology or other approved course.

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

<sup>6</sup> **Flight/Space** (3 hours) Select either MAE 457 Flight Stability & Control or MAE 467 Intro to Space Flight;

**Structures**(3 hours) Select either MAE 472 Aero Struc II or MAE 430 Applied Finite Element;

**Propulsion** (3 hours) Select either MAE 458 Propulsion or MAE 459 Rocket Propulsion;

**Open** (6 hours) Select from approved lists.

<sup>7</sup> **Math Elective** (3 credit hours) Select either MA 405, ST 305, ST 312, ST 370, ST 371, ST 372 or other approved courses.

### \* **General Education Program (GEP) requirements**

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

University approved GEP course lists for each category can be found at <https://oucc.dasa.ncsu.edu/general-education-program/>.

**Humanities** – (6 credit hours selected from two different disciplines/course prefixes)

*Choose from the University approved GEP Humanities list.*

**Social Sciences**–(3 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 & Exercise Studies**– (2 credit hours – must include one HESF 1000 level course and one additional HES course)

*Choose from the University approved GEP Health & Exercise Studies list.*

**Additional Breadth** – (3 credits to be selected from the University approved GEP course lists)

*Choose from the Humanities/ Social Sciences/ Visual and Performing Arts lists.*

**Interdisciplinary Perspectives** – (5-6 credits)

*Choose from the University approved GEP Interdisciplinary Perspectives list. STS 302, STS 304 or STS 320 taken as part of the Major requirements satisfies 3 credit hours of the 5 credit hours needed to fulfill the GEP Interdisciplinary Perspectives requirement.*

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