Curriculum for B.S. Degree in Aerospace Engineering Sciences
Applies to students who enter program in Fall 2025
C- is the minimum grade for all course prerequisites

First Year – Fall Semester			Prerequisites (PR) & Corequisites (CR)
APPM 1350 or MATH 1300	Calculus I for Engineers	4	
	Engineering Projects	3	
PHYS 1110	General Physics I	4	(PR or CR) APPM 1350
COEN 1500	Special Topics (Engineering First-Year Seminar[2]	1	
	Humanities/Social Science[1]	3	
	CREDIT HOURS	**15**	

Engineering Projects Courses: ASEN 1400 or ASTR 2500, ASEN 1403, GEEN 1400, ECEN 1400

Humanities & Social Sciences (H&SS) include: 9 credit hours of lower division or upper division, 6 hours of upper division, & 3 hours of writing. **Total: 18 hours**

First Year – Spring Semester			Prerequisites (PR) & Corequisites (CR)
APPM 1360 or MATH 2300	Calculus II for Engineers	4	(PR) APPM 1350
ASEN 1030	Aerospace Computing & Eng. Applications	3	(PR or CR) APPM 1350 or APPM 1340 or APPM 1345
MCEN 1024	Chemistry for Energy and Materials Science	3	
	Humanities & Social Science[1]	3	
	Humanities & Social Science[1]	3	
	CREDIT HOURS	**16**	

ASEN 1030, PHYS 1110, and Engineering Projects can be taken in either Fall or Spring Semester.

Sophomore Year – Fall Semester			Prerequisites (PR) & Corequisites (CR)
APPM 2360 or MATH 3430 & MATH 2130	Intro Diff Equations w/ Linear Algebra	4	(PR) APPM 1360
ASEN 2401	Statics	3	(PR) APPM 1360; PHYS 1110
ASEN 2402	Thermodynamics	3	(PR) APPM 1360; PHYS 1110 Recommended (PR or CR) MCEN 1024 or CHEN 1201 or CHEN 1211 or CHEM 1113 or CHEM 1400
ASEN 2501	Introduction to Astronautics	3	(PR) APPM 1360; PHYS 1110; ASEN 1030
	Free Elective	3	
	CREDIT HOURS	**16**	

Sophomore Year – Spring Semester			Prerequisites (PR) & Corequisites (CR)
APPM 2350 or MATH 2400	Calculus III for Engineers	4	(PR) APPM 1360
ASEN 2403	Dynamics	3	(PR) ASEN 2401 or MCEN 2023 or CVEN 2121 or GEEN 2851; ASEN 1030 (PR or CR) APPM 2360
ASEN 2502	Introduction to Aeronautics	3	(PR) APPM 1360; ASEN 1030; PHYS 1110
PHYS 1120	General Physics II	4	(PR) PHYS 1110; (PR or CR) APPM 1360
	Free Elective	3	
	CREDIT HOURS	**17**	

1. Courses from approved Humanities, Social Sciences and Writing Requirements (https://www.colorado.edu/engineering-advising/get-your-degree/degree-requirements/humanities-social-sciences-and-writing-requirements/).

2. Students may elect to apply this course towards free elective or Humanities and Social Sciences credits.

Junior Year – Fall Semester			Prerequisites (PR) & Corequisites (CR)
ASEN 3401	Aerospace Structures	3	(PR) ASEN 2401 or MCEN 2023 or CVEN 2121 or GEEN 2851 (Recommended PR) APPM 2350; APPM 2360
ASEN 3402	Aerospace Heat Transfer	3	(PR) ASEN 2402 or MCEN 3012 or GEEN 3852 or AREN 2110 or EVEN 3012; APPM 2360 (PR or CR) APPM 2350
ASEN 3404	Aerospace Dynamics & Control	3	(PR) ASEN 2403 or MCEN 2043 or CVEN 3111; APPM 2350, APPM 2360 or MATH 2130 & MATH 3430
ASEN 3501	Aerospace Experimental Methods	3	(PR) ASEN 2402 or MCEN 3012 or GEEN 3852 or AREN 2110 or EVEN 3012; ASEN 2403 or MCEN 2043 or CVEN 3111; APPM 2350, APPM 2360 or MATH 2130 & MATH 3430
	Math and Science Elective[3]	3	
	Humanities & Social Science[1]	2	
	CREDIT HOURS	**17**	

Junior Year – Spring Semester			Prerequisites (PR) & Corequisites (CR)
ASEN 3403	Aerodynamics	3	(PR) ASEN 2402 or MCEN 3012 or AREN 2110 or EVEN 3012 or GEEN; APPM 2350, APPM 2360 or MATH 2130 & MATH 3430
ASEN 3405 or ASEN 3406	Astrodynamics or Aircraft Dynamics[6]	3	(PR) ASEN 2501; (PR or CR) ASEN 3404 (PR) ASEN 2502, ASEN 3404
ASEN 3502	Aerospace Computational Methods	3	(PR) ASEN 2402 or MCEN 3012 or GEEN 3852 or AREN 2110 or EVEN 3012; ASEN 2403 or MCEN 2043 or CVEN 3111; APPM 2350, APPM 2360 (Recommended PR) ASEN 2501, ASEN 2502
ASEN 3503	Aerospace Electronics	3	(PR) ASEN 2403 or MCEN 2043 or CVEN 3111; APPM 2360 or MATH 2130 &MATH 3430; PHYS 1120
	Technical Elective[5]	3	
	CREDIT HOURS	**15**	

Senior Year – Fall Semester			Prerequisites (PR) & Corequisites (CR)
ASEN 4013	Foundations of Propulsion	3	(PR) ASEN 3403; MCEN 1024
ASEN 4018	Senior Projects I: Design Synthesis	4	(PR) All 2000 level ASEN courses; ASEN 3501 or ASEN 3502; Three of (ASEN 3401 or ASEN 3402 or ASEN 3403 or ASEN 3404 or ASEN 3503)
	Aerospace Engineering Elective[4]	3	
	College-Approved Writing Course[1]	3	
	Technical Elective[5]	3	
	CREDIT HOURS	**16**	

Senior Projects I & II must be completed in the same academic year, starting in the fall.

Senior Year – Spring Semester			Prerequisites (PR) & Corequisites (CR)
ASEN 4028	Senior Projects II: Design Practicum	4	(PR) ASEN 4018
ASEN 4401 or ASEN 4402	Aerospace Communication Systems or Aerospace Materials and Structural Analysis[6]	3	(PR) ASEN 2501, ASEN 3503 (PR) ASEN 3401; MCEN 1024
	Humanities & Social Science[1]	3	
	Technical Elective[5]	3	
	Technical Elective[5]	3	
	CREDIT HOURS	**16**	

3. A full listing of approved math and science elective courses can be found in the degree audit.

4. Any ASEN course at the 4000-level or above that is not a required course can be used to satisfy the Aerospace Engineering Elective requirement. Additionally, for Astronautics Focus students, either ASEN 3406 or ASEN 4402 can be used to satisfy the Aerospace Engineering Elective requirement, while for Aeronautics Focus students, either ASEN 3405 or ASEN 4401 can be used to satisfy the Aerospace Engineering Elective requirement.

5. A technical elective is generally a course in math, engineering, or science at the 3000 level or above. Any ASEN course at the4000 level or above that is not a required course can be used as a technical elective. Upper-division independent study courses from technical areas (math, science and engineering) are acceptable for up to 6 credit hours of technical elective credit. A full listing of approved technical elective courses can be found in the degree audit.

6. Students select from either the Aeronautics Focus Area or the Astronautics Focus Area and complete 6 credit hours of required coursework in that area. Astronautics Focus: ASEN 3405 & ASEN 4401. Aeronautics Focus: ASEN 3406 & ASEN 4402