

APPROVED CURRICULUM FOR B.S. DEGREE IN AEROSPACE ENGINEERING SCIENCES (128 total credit hrs)
Fall 2017 – TRACK 1

ASEN courses are offered and must be taken in this specific sequence

		Credit Hours	Prerequisite ("C" or better)/ Co-req. (CR)
FRESHMAN YEAR	Fall Semester	15	
	APPM 1350 Calculus 1 for Engineers	4	2 years high school algebra, 1 year geometry, 1/2 year trigonometry
	GEEN 1400 Engineering Projects/ASEN 1400 Gateway to Space	3	Freshman standing in Engineering
	CSCI 1320 MATLAB and C++ Programming	4	CR or Pre-Requisite of Calculus 1
	Lower-division Humanities/Social Science Elective	3	Variable
	Free Elective (ex: COEN 1350 or COEN 2500)	1	
	Spring Semester	17	
	APPM 1360 Calculus 2 for Engineers	4	"C" or better in APPM 1350
	ASEN 1022 Material Science for Aerospace Engineers	3	"C" or better in APPM 1350 & 1 yr h.s. chemistry, CR of Programming (CSCI 1320, ECEN 1310, or CSCI 1300)
	PHYS 1110 General Physics 1	4	CR or Pre-Requisite of APPM 1350
Lower-division Humanities/Social Science Elective	6	Variable	
SOPHOMORE YEAR	Fall Semester	16	
	APPM 2350 Calculus 3 for Engineers	4	"C" or better in APPM 1360
	ASEN 2001 Aerospace 1: Intro Statics, Structures, Materials	4	"C" or better in: APPM 1350, 1360, PHYS 1110, ECEN 1310, CSCI 1320, or CSCI 1300, CR APPM 2350
	ASEN 2002 Aerospace 2: Intro Thermodynamics, Aerodynamics	4	"C" or better in: APPM 1350, 1360, PHYS 1110, ECEN 1310, CSCI 1320, or CSCI 1300, CR APPM 2350
	ASEN 2012 Experimental & Computational Methods in AES	2	"C" or better in ECEN 1310, CSCI 1320, or CSCI 1300, CR with ASEN 2001 & 2002
	Free Electives (ex: COEN 2350 and APPM 2450)	2	Variable
	Spring Semester	17	
	APPM 2360 Intro Diff Equations w/Linear Alg	4	"C" or better in APPM 1360
	ASEN 2003 Aerospace 3: Intro Dynamics & Systems	5	"C" or better in APPM 2350, ASEN 2001, 2012; CR APPM 2360
	ASEN 2004 Aerospace 4: Vehicle Design & Performance	5	"C" or better in APPM 2350, ASEN 2001, 2002, 2012; CR APPM 2360
Upper-division Humanities/Social Science Elective	3	Variable	
JUNIOR YEAR	Fall Semester	16	
	ASEN 3111 Aerodynamics	4	"C" or better in APPM 2350, ASEN 2002, 2004
	ASEN 3112 Structures	4	"C" or better in APPM 2360, ASEN 1022, 2001, 2003, 2004
	ASEN 3113 Thermo & Heat Transfer	4	"C" or better in APPM 2350, ASEN 2002
	PHYS 1120 General Physics 2	4	"C" or better in PHYS 1110, CR APPM 1360
	Spring Semester	16	
	ASEN 3128 Aircraft Dynamics	4	"C" or better in APPM 2360, ASEN 2002, 2003, 2004
	ASEN 3200 Orbit Mech/Att Det & Control	4	"C" or better in APPM 2360, ASEN 2003, 2004
	ASEN 3300 Electronics & Communications	4	"C" or better in APPM 2360, ASEN 2003, PHYS 1120
	Professional Area Electives	3	Variable
Free Elective	1	Variable	

	Credit Hours	Prerequisite (C or better); Co-req. (CR)
SENIOR YEAR		
Fall Semester	16	
ASEN 4013 Foundations of Propulsion	3	"C" or better in APPM 2360, ASEN 3113
ASEN 4018 Senior Projects 1: Design Synthesis (Note 1)	4	"C" or better in all 3000-level ASEN courses (1022, 3111, 3112, 3113, 3128, 3200, 3300)
Professional Area Electives	6	Variable
Upper-division Writing (WRTG 3030, 3035, HUEN 3100, HUEN 1010)	3	pre-reqs variable
Spring Semester	16	
ASEN 4028 Senior Projects 2: Design Practicum	4	"C" or better in ASEN 4018
Professional Area Electives	6	Variable
Upper-division Humanities/Social Science Elective	3	Variable
Free Electives	3	Variable

(*) **Programming is a prerequisite for all ASEN courses =>2000-level. Recommend CSCI 1320-4 Computer Science 1. All AES students must be proficient in MATLAB.**

MATLAB Student Version: <https://oit.colorado.edu/software-hardware/software-downloads-and-licensing/matlab>

Note 1: Senior Projects 1 & 2 must be completed in the same Academic Year. Senior Standing in Aerospace Engineering = satisfactory completion of all junior-level Aerospace course requirements.

- **Professional Area Electives (PAEs):** 3000, 4000, or 5000-level Math, Science or Engineering Courses. Total number of PAE credits = 15. Use the Degree Audit to get a full list of approved PAEs.
- **Free Electives: Total = 7 credit hrs.** Free Electives can be anything (except for remedial coursework like MATH 1150, CHEM 1021, etc.)
- **Humanities & Social Sciences (HSS):** 9 credit hours of LDHSS, 6 credit hours of UDHSS & 3 credit hours of UDWRTG (students can only take HUEN 1010 in their freshmen year for it to be used toward the UDWRTG requirement). Total HSS=18 credit hours – all courses must be on the approved list
 - **Approved list of HSS courses:** <http://www.colorado.edu/engineering-advising/get-your-degree/degree-requirements/humanities-social-sciences-and-writing-requirements>

Useful Links:

- **Aerospace Dept. Homepage:** <http://www.colorado.edu/aerospace/>
- **AES BS/MS PROGRAM:** <http://www.colorado.edu/aerospace/current-students/undergraduates/bsms-degree>
- **Academic Calendar & Deadlines:** http://registrar.colorado.edu/calendar/calendars_schedules.html, **CU site w/ important links:** <http://www.colorado.edu/audience/students>
- **Engineering Forms:** <http://www.colorado.edu/engineering-advising/forms> (Independent Study, Petitions, Change of Major, Course Schedule Approval, etc.).
- **HONOR CODE:** <http://honorcode.colorado.edu/>.
- **ACADEMIC RESOURCES & TIPS:** <http://www.colorado.edu/engineering-advising/resources>
- **Free Tutoring – SGT:** <http://www.colorado.edu/studentgroups/sigmagammatau/tutor.html>
- **Counseling & Psychological Services:** <https://counseling.colorado.edu/>,
- **Disability Services:** <http://www.colorado.edu/disabilityservices/>,
- **CAREER Services** <http://careerservices.colorado.edu/public/> **Career Buffs/CSO:** <http://careerservices.colorado.edu/students/CSO.aspx>
- **Transfer Credit – Transferology:** <http://www.colorado.edu/admissions/undergraduate/transfer/crediteval>
- **RESEARCH Opportunities: Aerospace Faculty:** <http://www.colorado.edu/aerospace/people/faculty> **UROPs:** <http://www.colorado.edu/UROP/>, **REU:** <http://www.nsf.gov/crssprgm/reu/index.jsp> **Discovery Learning (DLAs):** <http://engineering.colorado.edu/activelearning/aboutdiscovery.htm>, **College of Engineering:** <http://engineering.colorado.edu/research/index.htm>, **CU Research Institutes & Centers:** <http://www.colorado.edu/research/index.html>