

APPROVED CURRICULUM FOR B.S. DEGREE IN AEROSPACE ENGINEERING SCIENCES (128 total credit hrs)
Fall 2014 – 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 & a 76% or above on the ALEKS test
	COEN 1500 Intro to Engineering	1	Freshman in Engineering (required for ASEN Freshmen, offered fall only)
	GEEN 1400 Engineering Projects/ASEN 1400 Gateway to Space	3	Freshman standing in Engineering
	PHYS 1110 General Physics 1	4	CR APPM 1350
	Lower-division Humanities/Social Science Elective	3	Variable
	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 high school chemistry, CR of Programming (ECEN 1310, CSCI 1300 or COEN 1300)
	ECEN 1310, CSCI 1300, or COEN 1300 Programming	4	no required prerequisite courses
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 or CSCI 1300 or COEN 1300, CR APPM 2350
	ASEN 2002 Aerospace 2: Intro Thermodynamics, Aerodynamics	4	"C" or better in: APPM 1350, 1360, PHYS 1110, ECEN 1310 or CSCI 1300 or COEN 1300, CR APPM 2350
	ASEN 2012 Experimental & Computational Methods in AES	2	"C" or better in CSCI 1300, COEN 1300 or ECEN 1310, CR with ASEN 2001 & 2002
	Free Electives	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 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 (3111, 3112, 3113, 3128, 3200, 3300) & ASEN 1022
	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 1300-4 Computer Science 1, Programming, ECEN 1310-4 C Programming for EE/ECE, or COEN 1300-3 Intro to Engineering Computing. All AES students must be proficient in MATLAB. MATLAB Student Version: http://www.mathworks.com/academia/student_version/

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 = 6 credit hrs. Free Electives can be anything (except for remedial coursework like MATH 1150, APPM 1235, CHEM 1021, etc.)
- Humanities & Social Sciences (HSS): 9 credit hours of LDHSS, 6 credit hours of UDHSS & 3 credit hours of UDWRTG. Total HSS=18 credit hours – all courses must be on the approved list
 - Approved list of HSS courses: <http://www.colorado.edu/engineering/academics/policies/hss>

Useful Links:

- Aerospace Dept. Homepage: <http://www.colorado.edu/aerospace/>, ASEN UG Opportunities: <http://www.colorado.edu/aerospace/current-students/undergraduates/opportunities>
- List of Aerospace Faculty (TO SELECT A FACULTY MENTOR): <http://www.colorado.edu/aerospace/people/faculty>, AES SR PROJECTS: <http://www.colorado.edu/aerospace/industry-home-page/senior-design-projects> Academic Calendar & Deadlines: http://registrar.colorado.edu/calendar/calendars_schedules.html, Best CU site w/all of the important links: <http://www.colorado.edu/audience/students>
- Engineering Forms: <http://www.colorado.edu/engineering/academics/advising-and-registration> (Independent Study, Petitions, Change of Major, Course Schedule Approval, etc.).
- HONOR CODE: <http://honorcode.colorado.edu/>.
- MINORS: <http://advising.colorado.edu/students/current-students/minors-available-to-arts-sciences-students> & <http://www.colorado.edu/engineering/academics/degrees-minors-certificates/minors>
- CERTIFICATES: <http://www.colorado.edu/engineering/academics/degrees-minors-certificates/certificates>. CUBIC: <http://leeds.colorado.edu/cubic/overview>,
- AES BS/MS PROGRAM: <http://www.colorado.edu/aerospace/current-students/undergraduates/bsms-degree>
- FAQs- Engineering: <http://engineering.colorado.edu/students/faqs.htm>, ASEN: <http://www.colorado.edu/aerospace/current-students/undergraduates/faq>
- FINANCES: <http://www.colorado.edu/engineering/admissions/finances> Scholarships: <http://www.colorado.edu/engineering/admissions/finances/scholarships> Financial Aid: <http://www.colorado.edu/finaid/> Tuition & Fees: <http://www.colorado.edu/bursar/>
- CLUBS & Orgs: <http://www.colorado.edu/aerospace/current-students/student-groups> Engineering: http://engineering.colorado.edu/students/student_programs.htm, Student Activities & Clubs: <http://www.colorado.edu/studentlife/activities/>
- Maps: Campus: http://engineering.colorado.edu/prospective/map_campus.htm, Engineering Center: http://engineering.colorado.edu/Advising_Guides/Engineer_Map.pdf ASEN (ECAE) wing: <http://www.colorado.edu/cs/sites/default/files/attached-files/Engineering%20Center%20Floor%20Plans%205.17.13.pdf>, Boulder: <http://www.bouldercoloradousa.com/visitor/maps/>
- Study Abroad Program: <http://studyabroad.colorado.edu/> International Engineering Certificates: <http://engineering.colorado.edu/academics/international.htm>, ,
- MATH: APPLIED MATH COURSE LIST: <http://amath.colorado.edu/course-pages>, [www.ALEKS.COM](http://www.aleks.com) – math assessment & subscription (pre-calculus skills),
- ACADEMIC RESOURCES & TIPS: <http://engineering.colorado.edu/academics/support.htm>, Free Tutoring – SGT: <http://www.colorado.edu/studentgroups/sigmagammatou/tutor.html>
 - Study Skills -"Being Smart is Not Enough": <http://www.colorado.edu/engineering/sites/default/files/dilaura.pdf>. Schaum's Outlines: <http://www.mhprofessional.com/category/?cat=145>,
 - Counseling & Psychological Services: <https://counseling.colorado.edu/>, Disability Services: <http://www.colorado.edu/disabilityservices/>, Wardenburg: <http://healthcenter.colorado.edu/>,
- CAREER Services <http://careerservices.colorado.edu/public/> or call to make an appointment w/Rachel Killam at 303-492-6541. Career Buffs/CSO: <http://careerservices.colorado.edu/students/CSO.aspx>
 - Resumes: <http://careerservices.colorado.edu/students/resumes.aspx> Interviews: <http://careerservices.colorado.edu/students/interviewing.aspx> & <http://www.jobinterviewquestions.org/questions/behavioral-interview.asp>
 - Job & Internship Search links: Career Builder.Com <http://www.careerbuilder.com/>; Engineer Gigs: <http://www.engineergigs.com/Default.asp>, LinkedIn: http://www.linkedin.com/home?trk=hb_home
 - Colorado Space Companies: <http://www.spacecolorado.org/companies-projects/directory.aspx>, US Aerospace Companies - MANTA: <http://www.manta.com/mb?search=aerospace&x=37&y=7>
 - AIA Daily Lead: <https://www.smartbrief.com/aia/index.jsp>. Aeroindustryjobs: http://www.aeroindustryjobs.com/home/home.cfm?site_id=13641. CAMT & links: <http://www.camt.com/useful-links/useful-links>
 - CO-Ops: <http://engineering.colorado.edu/activelearning/co-op.htm>, AES Co-Ops: <http://www.colorado.edu/aerospace/co-ops.html>, NASA: <http://intern.nasa.gov>
- Transfer Credit – Transferology: <http://www.colorado.edu/admissions/undergraduate/transfer/crediteval> Students in Transition, IUT process, etc.: <http://advising.colorado.edu/students/current-students/students-in-transition>,
- 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>