

Aerospace engineering sciences

Did You Know?

Jim Tighe, a 1997 B.S. graduate in aerospace engineering, was the chief aerodynamicist on SpaceShipOne, the space plane that won the \$10 million Ansari-X-Prize.

Students:

404 undergraduates
126 graduate students

Faculty:

29 faculty

Research:

4 interdisciplinary
research centers
\$7.3 million (2006-07)
funding

Rankings:

CU-Boulder is the only doctoral university in the Rocky Mountain region ranked in the top 20 public engineering programs in the nation. The undergraduate program in aerospace engineering ranks 16th overall and 11th among public engineering programs (USNR).

Colorado
University of Colorado at Boulder



The University of Colorado at Boulder's undergraduate program in aerospace engineering sciences prepares students for the design, testing, and operation of complex aerospace and related systems. CU aerospace engineers are thoroughly trained in system analysis. Whether your interests lie in space exploration or in using space technology to solve problems closer to home, the hands-on, technical experience combined with the theoretical foundation you will gain at CU will prepare you to take on the greatest of engineering challenges. Aerospace engineering students can individualize their studies by choosing a specific area of emphasis within the major and can tailor their curriculum to match their unique interests with undergraduate research opportunities.



"There's so much opportunity for research as an undergrad. Starting in my freshman year I was in the lab working on methods to reverse muscle atrophy in astronauts. Now I have an internship at Cessna Aircraft."

— Kristina Wang

17 CU-Boulder alumni have flown in space as NASA astronauts, making CU one of the nation's top five non-military schools for producing astronauts

Hands-on Learning

At CU, students learn by doing. From conceptualizing, to planning, to building and creation, students apply engineering concepts in hands-on design courses. Extracurricular activities like the Design, Build, Fly competition and the Colorado Space Grant Consortium provide additional opportunities to explore the real-world applications of your aerospace engineering major.

What can I do with a degree in aerospace engineering?

- Explore space
- Develop unmanned aircraft
- Design interplanetary spacecraft
- Observe the earth



Aerospace curriculum

128 semester credit hours required

(Sample Curriculum)

FRESHMAN YEAR

Fall Semester

APPM 1350 Calculus 1 for Engineers	4
CHEN 1211 Engr General Chemistry	3
CHEM 1221 Engr General Chemistry Lab	2
GEEN 1400 Engineering Projects or ASEN 2500 Gateway to Space	3
Humanities and Social Science Elective (LD)*	3

Spring Semester

APPM 1360 Calculus 2 for Engineers	4
Computing Requirement GEEN/CSCI 1300	3
PHYS 1110 General Physics 1	4
Humanities and Social Science Elective (LD)*	3

SOPHOMORE YEAR

Fall Semester

APPM 2350 Calculus 3 for Engineers	4
ASEN 2001 Intro to Statistics, Structures, Materials	5
ASEN 2002 Intro to Thermodynamics, Aerodynamics	5
Humanities and Social Science Elective (LD)*	3

Spring Semester

APPM 2360 Diff Eq with Linear Algebra	4
ASEN 2003 Intro to Dynamics & Systems	5
ASEN 2004 Vehicle Design and Performance	5
Humanities and Social Science Elective (UD)*	3

JUNIOR YEAR

Fall Semester

PHYS 1120 General Physics 2	4
ASEN 3111 Aerodynamics	4
ASEN 3112 Structures	4
ASEN 3113 Thermo & Heat Transfer	4

Spring Semester

ASEN 3128 Aircraft Dynamics	4
ASEN 3200 Orbit Mech/Att Dyn. & Control	4
ASEN 3300 Electronics & Communications	4
WRTG 3030 Writing Science & Society	3
Humanities and Social Science Elective (UD)*	3

SENIOR YEAR

Fall Semester

ASEN 4012 Aerospace Materials	3
ASEN 4018 Senior Projects 1	4
Professional Area Electives	6
Free Elective	3

Spring Semester

ASEN 4013 Foundations of Propulsion	3
ASEN 4028 Senior Projects 2	4
Professional Area Electives	6
Free Elective	2

*Indicates Lower Division (LD) or Upper Division (UD) level Humanities and Social Science electives

All prerequisites must be complete with a grade of "C" or better.

For more information visit: www.colorado.edu/aerospace

Areas of concentration within aerospace engineering

Astrodynamics

Remote sensing

Global positioning

Microgravity sciences

Atmospheric sciences

Guidance and control

Structural dynamics and
control

Aerodynamics

Remote sensing

Computational fluid
dynamics

Systems engineering

Bioengineering

