

# ASEN 5148 – Spacecraft Design

## Course Syllabus

### Instructors:

Dr. Daniel Kubitschek

Laboratory for Atmospheric and Space Physics (LASP)

Space Technology Building

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Office Hours: Fridays, by appointment

Zoom <https://cuboulder.zoom.us/j/7379984488>

Course Website: Canvas

Textbook Spacecraft Systems Engineering, 4th Edition Fortescue, Swinerd & Stark

Lectures 1130-1245 Tuesday & Thursday

Classroom AERO 111

Zoom Meeting ID: 7379984488 (Note, this is different from Office Hours)

- Connection options:

- Join via web browser <https://cuboulder.zoom.us/j/7379984488>

- Join via Zoom app (using meeting ID)

- Join via telephone dial in: US +16465588656, 7379984488#

### Course Description

1. This course will study the fundamental concepts of Spacecraft Design with emphasis on the important aspects of systems and subsystems engineering
2. A preliminary design for three missions will be developed and presented at a Preliminary Design Review (PDR) at the end of the semester
3. Design teams (3 teams per project) will compete for the winning design to be selected, following the PDR, by the Principal Investigators for each (Blue Sun Enterprises, Inc. & LASP)

Distances student taking the course for CU academic credit will participate as distributed team members, requiring each team to accommodate and coordinate with their distance team member(s) as necessary.

### Curriculum

This is a lecture and discussion course centered on developing and presenting the spacecraft preliminary design for a spaceflight mission. Individual lectures cover the spacecraft systems and subsystems. The course assumes the student has no previous experience in spacecraft design.

### Course Objectives

1. To convey the important aspects of systems and subsystems engineering
2. To simulate a realistic spacecraft design process
3. To develop the preliminary design for a spacecraft

Content

MISSION DESIGN

Disabilities syllabus statement:

If you qualify for accommodations because of a disability, please submit your accommodation letter from Disability Services to your faculty member in a timely manner so that your needs can be addressed. Disability Services determines accommodations based on documented disabilities in the academic

All students enrolled in a University of Colorado Boulder course are responsible for knowing and adhering to the Honor Code. Violations of the policy may include: plagiarism, cheating, fabrication, lying, bribery, threat, unauthorized access to academic materials, clicker fraud, submitting the same or similar work in more than one course without permission from all course instructors involved, and aiding academic dishonesty. All incidents of academic misconduct will be reported to the Honor Code (honor@colorado.edu) 303-492-

Religious observances syllabus statement:

Campus policy regarding religious observances requires that faculty make every effort to deal reasonably and fairly with all students who, because of religious obligations, have conflicts with scheduled exams, assignments or required attendance.

See the [campus policy regarding religious observances](#) [Links to an external site.](#) for details.