ASEN 5018/6028: Graduate Projects
Department of Aerospace Engineering Sciences
Syllabus, Fall 2021

Course Coordinator: Dr. Nicholas Rainville / AERO 219 / 303 492-7814
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Course Teaching Assistant: Kyle Johnson kyle.johnson-5@colorado.edu

Lecture Section: ASEN 5018–800 / 6028-800
Monday 16:40 – 17:30, AERO 120

Lab Section: ASEN 5018-807 / 6028-807, Human Spacecraft Design Section
Section Adviser: Col. Jim Voss / AERO 224L / jim.voss@colorado.edu
Tuesday, Thursday 11:30 – 13:20

Lab Section: ASEN 5018–802 / 6028-802, Satellite Timing System
Section Adviser: Prof. Penina Axelrad / TBD / penina.axelrad@colorado.edu
Tuesday, Thursday 9:00 – 10:50

Lab Section: ASEN 5018–803 / 6028-803, Cubesats for Space Science
Section Adviser: Prof. Bob Marshall / AERO 224L / robert.marshall@colorado.edu
Monday, Wednesday 14:20 – 16:10

Lab Section: ASEN 5018–808 / 6028-808, Maxwell and SWARM-EX Cubesats
Section Adviser: Prof. Scott Palo / AERO N250 / palo@colorado.edu
Monday, Wednesday 13:50 – 15:40

Lab Section: ASEN 5018–806 / 6028-806, ADCS for Astrophysics Applications
Section Adviser: Dr. Dan Kubitschek /AERO 224L/daniel.kubitschek@lasp.colorado.edu
Tuesday, Thursday 15:00 – 16:50

Course Text: Curtis R. Cook, Just Enough Project Management, McGraw-Hill. 2005

Course Prerequisite: Permission of lab section instructor. Completion of, or current enrollment in, one of the following courses as related to the specific lab project of interest is encouraged: ASEN 5158 Space Habitat Design, ASEN 5148 Spacecraft Design, ASEN 4138 Aircraft Design. Completion of, or current enrollment in, ASEN 5188 Space Systems Engineering is also recommended. Non-AES student enrollment is encouraged. Concurrent enrollment in ASEN 4018/28, Senior Design, is discouraged, but may be allowed with consent of the section instructor.

Course Purpose: The Graduate Projects two-semester course sequence is designed to expose graduate students to engineering project work through project management, systems engineering, and subsystem-level design and testing. Students will work on complex, hands-on projects related to the focus areas in the aerospace engineering sciences department: Aerospace

Engineering Systems, Astrodynamics and Satellite Navigation Systems, Bioastronautics, and Remote Sensing, Earth and Space Sciences. Students completing this course series will be better prepared for the type of project work and team dynamics they will encounter in government and industry.

Course Objectives: Students will participate in and be exposed to:

- **Project Management, Systems Engineering**
  - **Formal reviews**
  - **Project documentation**
- **Technical contribution to complex engineering project**
  - **Build, Test, Verify**
- **Leadership (ASEN 6028)**

Requirements for COVID-19

As a matter of public health and safety due to the pandemic, all members of the CU Boulder community and all visitors to campus must follow university, department and building requirements and all public health orders in place to reduce the risk of spreading infectious disease. Students who fail to adhere to these requirements will be asked to leave class, and students who do not leave class when asked or who refuse to comply with these requirements will be referred to Student Conduct and Conflict Resolution. For more information, see the policy on

Honor Code

All students enrolled in a University of Colorado Boulder course are responsible for knowing and adhering to the Honor Code academic integrity policy. Violations of the Honor Code may include, but are not limited to: 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