

# ASEN 5050: Space Flight Dynamics Spring 2021

## Course description:

This course focuses on studying the motion of celestial bodies and artificial satellites. Most of

periods and the associated logistics for participation will be noted in Canvas. To ensure flexibility in your participation in this course, I will not monitor or mandate attendance during these synchronous discussions; parts of these sessions will be recorded and videos made available so that you can watch them later if you are unable to attend. Office hours will be held weekly but will not be recorded. You may attend office hours either to ask us questions or to e hours eiwTc 46

## Important Dates

Although each homework assignment will have several problems, all problems may not be graded. However, solutions will be provided where appropriate in a timely manner after the submission deadline



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](mailto:honor@colorado.edu)); 303-492-5550). Students found responsible for violating the academic integrity policy will be subject to nonacademic sanctions from the Honor Code as well as academic sanctions from the faculty member. Additional information regarding the Honor Code academic integrity policy can be found at the [Honor Code Office website](#).

## **Sexual Misconduct, Discrimination, Harassment and/or Related Retaliation**

The University of Colorado Boulder (CU Boulder) is committed to fostering an inclusive and welcoming learning, working, and living environment. CU Boulder will not tolerate acts of sexual misconduct (harassment, exploitation, and assault), intimate partner violence (dating or domestic violence), stalking, or protected-class discrimination or harassment by members of our community. Individuals who believe they have been subject to misconduct or retaliatory actions for reporting a concern should contact the Office of Institutional Equity and Compliance (OIEC) at 303-492-2127 or [cureport@colorado.edu](mailto:cureport@colorado.edu). Information about the OIEC, university policies, [anonymous reporting](#)

## Tentative List of Topics

\*These topics may change throughout the semester

- Two-body problem
- Orbital elements
- Coordinate systems and transformations
- Time along an orbit
- f and g series
- Orbital transfers (impulsive)
- Lambert's problem
- Interplanetary trajectories
- Groundtracks
- Perturbations
- Relative motion
- Initial orbit determination
- Introduction to the three-body problem