



SE a : E  
ASEN 6050 S a I E a

!  
!

**Instructor:** Prof. Zoltan Sternovsky, (303) 819-2783, [Zoltan.Sternovsky@colorado.edu](mailto:Zoltan.Sternovsky@colorado.edu)

**Lecture Time:** Tuesday/Thursday 11:30 – 12:45 am

**Location:** AERO N240 for Section 6050-001, Lecture capture for Section 6050-001B

**Office Hour:** TBD

**Webpage:** Canvas:

!

: secondary electron emission (SEE), ion-surface interactions, photoemission, ionization, particle and photon scattering.

: CTE, outgassing, mass loss, radiation damage, various properties and limitations

- ! Photon detectors
- ! Particle detectors

Basics of front-end electronics. Voltage, current and charge measurements, frequency characteristics.

- ! Dust detectors and analyzers
- ! Magnetometers
- ! UV spectrometers
- ! IR instruments (thermal imaging, spectrometers)
- ! Imaging/cameras
- ! Neutral/ion mass spectrometers
- ! Plasma instruments (Faraday cups, solar wind analyzers, energetic particle detectors)
- ! Neutral particles (high and low energy)

\*For each instrument type, we will review the relevant science questions it can answer, the physical principle of the measurement, the basic parameters used to describe performance, and review the design of past instruments and those currently in development.

ASEN 5335 Space Environment.

Lectures per assigned schedule. There will be weekly or biweekly homework assignments. The final grade will be based on the submitted homework (40%), a mid-term project (20%), and the final *oral* exam (40%). The oral exam will be no longer than 60 minutes and the students will need to demonstrate the conceptual understanding of the material covered.

Both students and faculty are responsible for maintaining an appropriate learning environment in all instructional settings, whether in person, remote or online. Those who fail to adhere to such behavioral standards may be subject to discipline. Professional courtesy and sensitivity are especially important with respect to individuals and topics dealing with race, color, national origin, sex, pregnancy, age, disability, creed, religion, sexual orientation, gender identity, gender expression, veteran status, political affiliation or political philosophy. For more information, see the [classroom behavior](#) policy, the [Student Code of Conduct](#), and the [Office of Institutional Equity and Compliance](#).

**C D-19**

As a matter of public health and safety, 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. CU Boulder currently requires COVID-19 vaccination and boosters for all faculty, staff and students. Students, faculty and staff must upload proof of vaccination and boosters or file for an exemption based on medical, ethical or moral grounds through the MyCUHealth portal.

The CU Boulder campus is currently mask-optional. However, if public health conditions change and masks are again required in classrooms, students who fail to adhere to masking 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 classroom behavior and the Student Code of Conduct. If you require accommodation because a disability prevents you from fulfilling these safety measures, please follow the steps in the "Accommodation for Disabilities" statement on this syllabus.

If you feel ill and think you might have COVID-19, if you have tested positive for COVID-19, or if you are unvaccinated or partially vaccinated and have been in close contact with someone who has COVID-19, you should stay home and follow the further guidance of the Public Health Office ([contacttracing@colorado.edu](mailto:contacttracing@colorado.edu)). If you are fully vaccinated and have been in close contact with someone who has COVID-19, you do not need to stay home; rather, you should self-monitor for symptoms and follow the further guidance of the Public Health Office ([contacttracing@colorado.edu](mailto:contacttracing@colorado.edu)). {Faculty: insert your procedure here for students to alert you about absence due to illness or quarantine. Because of FERPA student privacy laws, do not require students to state the nature of their illness when alerting you. Do not require "doctor's notes" for classes missed due to illness; campus health services no longer provide "doctor's notes" or appointment verifications.}

**A D**

If you qualify for accommodations because of a disability, please submit your accommodation letter from

