

GRADUATE CERTIFICATE IN AEROSPACE: SATELLITES, RADARS AND REMOTE SENSING

ECE 579 Global Navigation Satellite Systems

Program Total Credits:

9

*This certificate may have courses in common with other graduate certificates. A student may earn more than one certificate, but a given course may be counted only in one certificate.

Start developing the skills you need to break into the rapidly evolving aerospace industry. The Graduate Certificate in Aerospace: Satellites, Radars and Remote Sensing provides an introduction to aerospace engineering disciplines, including satellites, radars and remote sensing. A graduate certificate requires completion of 9 credits of 500-level and above graduate work. Students may apply for and complete just the certificate or may apply for both the certificate and a degree program. This allows students to start with the certificate and continue to a more advanced degree.

Students interested in graduate work should refer to CSU's Graduate and Professional Bulletin (<http://catalog.colostate.edu/general-catalog/graduate-bulletin/>).

Learning Objectives

Students will:

1. Interpret and distinguish space science and engineering, as well as various applications in communications, remote sensing, navigation, and environmental monitoring.
2. Extend working knowledge about the payload and orbital mechanics of the space systems dedicated to producing mission data and then relaying that data back to Earth.
3. Understand radar and satellite sensors (e.g., nuclear detonation detector, radiometer), their system components and design.
4. Interpret radar and satellite observations and extract information through remote sensing data analytics.
5. Expand beyond traditional focus on maximizing utilization of individual satellite programs, towards a broader view of how multidisciplinary space observations may be integrated from the larger constellation of global observing platforms.
6. Adapt to expected changes in radar and satellite technologies (e.g., CubeSat), as well as information technologies (e.g., artificial intelligence) to conduct fundamental and applied space research to understand global changes and meet societal needs.

Requirements Effective Fall 2023

Additional coursework may be required due to prerequisites.

Code	Title	Credits
Select a minimum of 9 credits from the following courses:		9
ATS 550	Atmospheric Radiation and Remote Sensing	
ECE 521	Satellite Communication	
ECE 548	Microwave Theory and Component Design	
ECE 549	Radar Systems and Design	
ECE 556	AI for Radar and Remote Sensing	
ECE 578	Satellite Data Analysis	