Introduction to Atmospheric and climate science

Course # EAES 2030

Credits 6

Prerequisites and/or Corequisites: Introduction to Earth and Environmental Sciences

Course Description

This course provides hands-on training to use geospatial and environmental facts to produce useful suggestions for improving decisions about location, atmosphere, and climate, from the most natural to the most urban. Students learn how to use geographic information systems and remote sensing to solve challenging issues related to maintaining ecosystems and promoting sustainable practices and to recognize complex environmental issues such as natural resource mismanagement and atmospheric and climate change. Students analyze a wide range of information, including real-time data, mapping, monitoring, management, and live forecast. This course demonstrates how to use remote sensing and geospatial information for many planned and daily decisions across a wide range of sectors, and especially in atmospheric and climate science.

Course Learning Outcomes

Upon the completion, students will be able to:

- Use geoscience techniques and current environmental information to define issues and solutions in atmospheric and climate science.
- Use numerical models and their role in atmospheric and climate science based on current observations to solve earth and environmental problems.
- Analyze, interpret, process and use climate data to visualize various atmospheric and climate phenomena.
- Acquire satellite images, perform parameter retrieval, use GIS data for atmospheric forecast and climatology applications.
- Manage the design, documentation, and resourcing of RS/GIS science solutions in a variety of settings, including workplaces and contested environmental issues.
- Analyze the atmospheric and climate change impacts, preparedness, response, related policies, law and future plans.

Course Assessments and Grading

Item	**Weight**
Class performance & activities	5%

Lab assignments	5%
Data collection, analysis & reports	15%
Short field work & report	5%
Mid-term exam	20%
Group project & presentation	15%
Workshop Quiz & paper	10%
Final exam	25%