Meteorology & Climate Science

Meteorology is a branch of the atmospheric sciences which includes atmospheric chemistry and atmospheric physics, with a focus on weather forecasting.

- **Book: Fundamentals of Atmospheric Science (Brune)**

This text prepares students by laying a solid foundation in the application of physical, chemical, and mathematical principles to a broad range of atmospheric phenomena. Students are introduced to fundamental concepts and applications of atmospheric thermodynamics, radiative transfer, atmospheric chemistry, cloud microphysics, atmospheric dynamics, and the atmospheric boundary layer.

- Front Matter
- 1: Getting Started
- 2: Thermodynamics
- 3: Moist Processes
- 4: Atmospheric Composition
This book is an algebra-based survey of atmospheric science. This book is designed for students and professionals who want to understand and apply basic meteorological concepts, but who do not need to derive equations. The text could serve the fields of Atmospheric Science, Meteorology, Environmental Science, Engineering, Air Quality, Climatology, and Geography. The text involves primarily algebra to allow the physical meaning.
14: Thunderstorm Fundamentals
15: Thunderstorm Hazards
16: Tropical Cyclones
17: Regional Winds
18: Atmospheric Boundary Layer
19: Pollutant Dispersion
20: Numerical Weather Prediction (NWP)
21: Natural Climate Processes
22: Atmospheric Optics
Back Matter

• Climate Toolkit - A Resource Manual for Science and Action (Granshaw)

The Climate Toolkit is a resource manual designed to help the reader navigate the complex and perplexing issue of climate change by providing tools and strategies to explore the underlying science. As such it contains a collection of activities that make use of readily available on-line resources developed by research groups and public agencies. These include web-based climate models, climate data archives, interactive atlases, policy papers, and “solution” catalogs.

• Introduction to Climate Science (Schmittner 2021)

This book describes how Earth’s climate is changing, how it has been changing in the recent geological past and how it may change in the future. It covers the physical sciences that build the foundations of our current understanding of global climate change such as radiation, Earth’s energy balance, the greenhouse effect and the carbon cycle. Both natural and human causes for climate change are discussed. Impacts of climate change...
on natural and human systems are summarized.

- Front Matter
- 1: Chapters
- Back Matter