GEOG C165: INTRODUCTION TO WEATHER AND CLIMATE

Item	Value
Curriculum Committee Approval Date	04/23/2021
Top Code	220600 - Geography
Units	3 Total Units
Hours	54 Total Hours (Lecture Hours 54)
Total Outside of Class Hours	0
Course Credit Status	Credit: Degree Applicable (D)
Material Fee	No
Basic Skills	Not Basic Skills (N)
Repeatable	No
Grading Policy	Standard Letter (S), • Pass/No Pass (B)

Course Description

Introduction to the Earth's atmosphere and processes. Topics include atmospheric structure and composition, solar radiation, energy budget, temperature, seasonal changes, atmospheric moisture, clouds and fog, precipitation, circulation systems, air masses and fronts, weather forecasting, climate, and climate change. Transfer Credit: CSU; UC. C-ID: GEOG 130.**C-ID:** GEOG 130.

Course Level Student Learning Outcome(s)

1. Identify, analyze, and interpret spatial information regarding the Earth's weather and climate patterns and processes.
2. Identify and explain global and local spatial distributions and controls of weather and climate processes.

Course Objectives

- 1. Explain the energy balance of the Earth-atmosphere system.
- 2. Describe forces that cause atmospheric motion and resultant pressure patterns, wind systems and global circulation.
- 3. Describe moisture, clouds and precipitation processes, and their distributions.
- 4. Explain weather systems, distribution, and extreme events.
- 5. Classify and interpret atmospheric data through weather maps, radar imagery and satellite data.
- 6. Describe global climate distribution and causes and implications of climate change.

Lecture Content

Energy and Mass Composition and Structure of the Atmosphere Solar Radiation and the Seasons Energy Balance and Temperature. Atmospheric Pressure and Wind Water in the Atmosphere Atmospheric Moisture Cloud Development and Forms Precipitation Processes Distribution and Movement of Air Atmospheric Circulation and Pressure Distributions Air Masses and Fronts Disturbances Midlatitude Cyclones Thunderstorms and Tornadoes Tropical Storms and Hurricanes Weather forecasting and analysis Climate and Climate Change Earths Climates and their distribution Climate Changes and their causes Past climates and projected future changes

Method(s) of Instruction

- Lecture (02)
- DE Online Lecture (02X)

Instructional Techniques

Lecture Discussions Instructor regular substantive interaction and feedback on assignments

Reading Assignments

Read and study the textbook.

Writing Assignments

Research, write, and submit a research paper.

Out-of-class Assignments

Independent research for academic discussions.

Demonstration of Critical Thinking

Prepare for and participate in academic discussions.

Required Writing, Problem Solving, Skills Demonstration

Research, write, and submit a research paper.

Eligible Disciplines

Geography: Masters degree in geography OR bachelors degree in geography AND masters degree in geology, history, meteorology, or oceanography OR the equivalent OR see interdisciplinary studies. Masters degree required.

Textbooks Resources

1. Required Aguado, E. Understanding Weather and Climate, 7th ed. Pearson, 2015 Rationale: Very comprehensive textbbook illustrating the principles of weather and climate. Legacy Textbook Transfer Data: Legacy text 2. Required Ahrens, D. Meteorology Today: An Introduction to Weather, Climate and the Environment, 12th ed. Cengage, 2018

Other Resources

1. Coastline Library