Module 3 Lab: Climate Data Analysis

Objective

To analyze climate data and identify trends related to climate change.

Background

Long-term climate data reveal patterns and trends that help us understand climate change. This lab involves analyzing temperature and precipitation data.

Materials

- Climate data sets (provided)
- Computer with spreadsheet software
- Calculator
- Graph paper or graphing software

Procedure

Part 1: Temperature Analysis

1. Obtain temperature data for your region (last 50+ years)
2. Calculate annual average temperatures
3. Create line graph showing temperature trends
4. Calculate rate of change
5. Identify patterns

Part 2: Precipitation Analysis

1. Obtain precipitation data for same period
2. Calculate annual totals
3. Create graph showing precipitation trends

4. Identify wet and dry periods
5. Compare to temperature trends

Part 3: Extreme Events

1. Identify extreme temperature events
2. Identify extreme precipitation events
3. Count frequency over time
4. Analyze trends in extremes
5. Compare to historical averages

Part 4: Correlation Analysis

1. Compare temperature and precipitation
2. Look for relationships
3. Identify anomalies
4. Discuss possible causes

Data Analysis

Create: - Temperature trend graph - Precipitation trend graph - Extreme event frequency chart - Summary statistics table

Questions

1. What temperature trends do you observe?
2. How has precipitation changed?
3. Are extreme events increasing?
4. What might explain these patterns?
5. How do local trends compare to global?

Conclusion

Summarize findings and explain their significance for understanding climate change.