Global Climate Systems

- Earth’s Climate System and Its Classification
- Tropical Climates (A)
- Dry Arid and Semiarid Climates (B)
- Mesothermal Climates (C)
- Microthermal Climates (D)
- Polar Climates (E)
- Global Climate Change

Climate

- Climate is weather over time
- Climatology is the study of climate
- Climatic regions are areas with similar weather statistics

Earth’s Climate System and Its Classification

- Climate Components: Insolation, Temperature, Pressure, Air Masses, and Precipitation
- Classification of Climatic Regions
- The Köppen Climate Classification System
- Global Climate Patterns

Earth’s Climate System
Worldwide Average Precipitation

Climate Relationships

Generalized Climate Regions

Köppen Climate Classification

- Empirical system
- Began with heat zones in 1884
- Included plant communities in 1900
- Published first wall map in 1928

Köppen Classification Criteria

- Average monthly temperatures
- Average monthly precipitation
- Total annual precipitation

Köppen’s Climate Classifications

- Tropical Climates (A)
- Dry Arid and Semiarid Climates (B)
- Mesothermal Climates (C)
- Microthermal Climates (D)
- Polar Climates (E)
**Tropical Climates (A)**
- Tropical Rain Forest Climates (Af)
- Tropical Monsoon Climates (Am)
- Tropical Savanna Climates (Aw)

**Dry, Arid, and Semiarid Climates (B)**
- Desert Characteristics
- Hot Low-Latitude Desert Climates (BWh)
- Cold Midlatitude Desert Climates (BWk)
- Hot Low-Latitude Steppe Climates (BSh)
- Cold Midlatitude Steppe Climates (BSk)

**Humid Subtropical Hot-Summer Climates (Cfa, Cwa)**
**Marine West Coast Climates (Cfb, Cfc)**
**Mediterranean Dry-Summer Climates (Csa, Csb)**
Mesothermal Climates (C)

Mediterranean Climates (Cs)

Microthermal Climates (D)
- Humid Continental Hot-Summer Climates (Dfa, Dwa)
- Humid Continental Mild-Summer Climates (Dfb, Dwb)
- Subarctic Climates (Dfc, Dwc, Dwd)

Polar Climates (E)
- Tundra Climate (ET)
- Ice Cap Climate (EF)