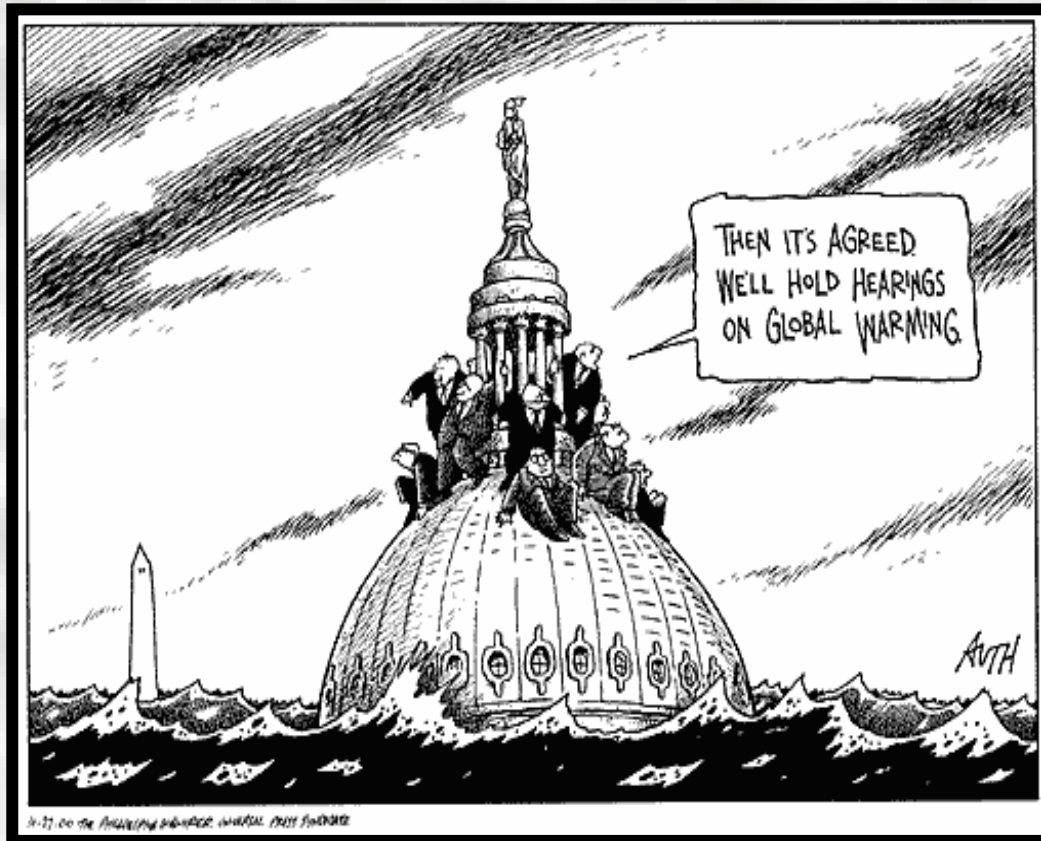


Exam Format & Brief Review for Regional Climatology



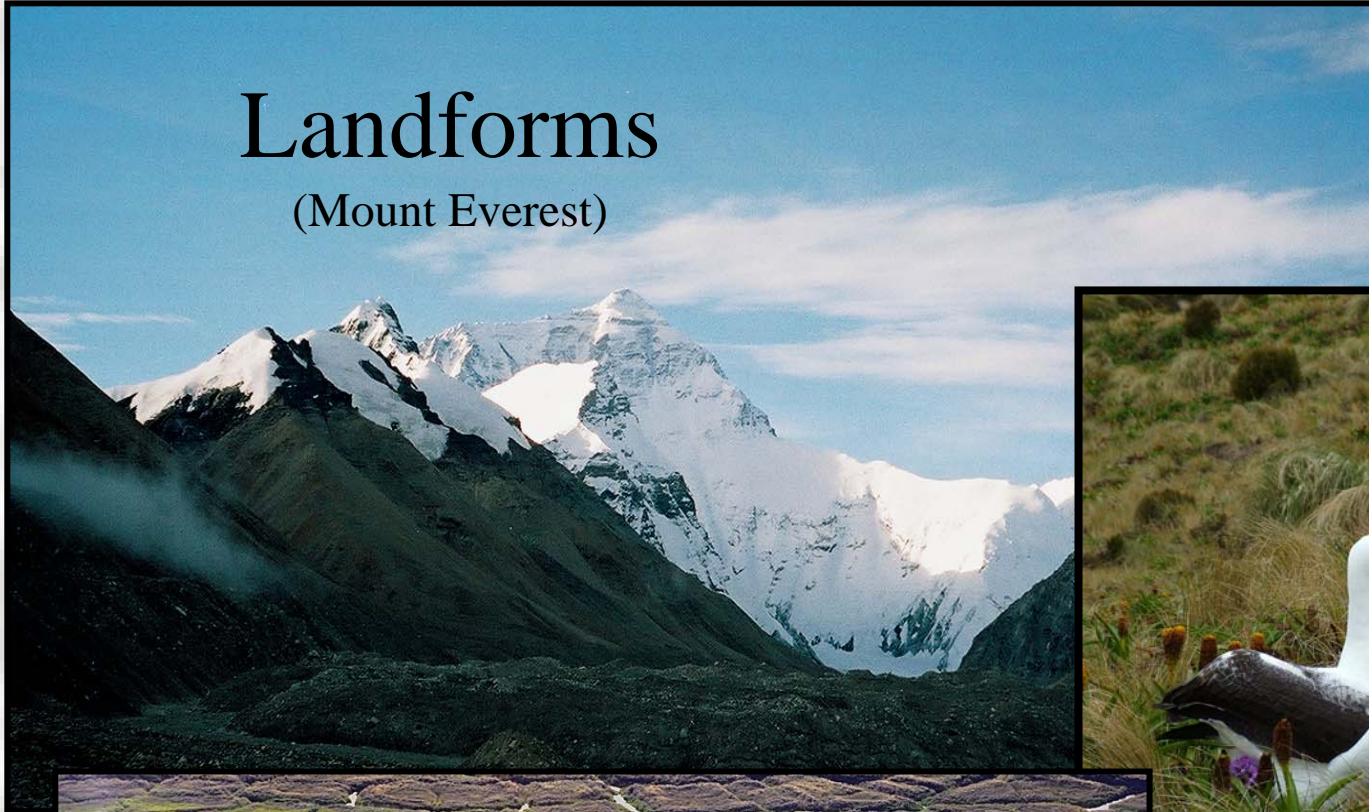
Exam I
Exam II
Exam III



All climatic regions from small to global are revealed through...

Landforms

(Mount Everest)



Animals



Albatross, Campbell Island
New Zealand



Vegetation

Tundra, Arctic Coast

Exam I Format & Brief Review for Regional Climatology

First question on the Exam

Come to class

Exam Format (total points possible on the exam: 35)

Part I: Multiple Choice Questions (~15 points)

Each question is worth 1 point.

Any information printed on an overhead is fair game.

Expect several readings questions

I ask questions which go beyond definitions - questions that make you link several concepts.

Part II: Sketch and Label w/Short Description Discussion (~6 points)

Example: Temperature inversion

Part III: Short Answer and/or Listing (multiple questions will come directly from the Review Question section in your text) (~4 points)

Part IV: Terminology Short Answer (10 points)

10 short definitions/essay each worth 1 point

2 bonus short answer question

Expect several terms from the Key Terms Section in your text

Example: Subsolar Point - The only point on the Earth's surface receiving direct (perpendicular) insolation. The subsolar point is migratory.

Exam I Format & Brief Review for Regional Climatology

Completed Readings

Text Readings -

Chapters: 2, 3, 7, 4, 5

Read and reread your notes.
Most of the exam will
come from this source.
Create a condensed outline
from your notes and then
outline the text chapters.

Subject to minor modification

General Study Guide

1. El Niño as an introduction to regional climate studies (many complicated and not entirely predictable phenomena make up the climate of regions)
2. The Climate of coastal Peru
3. Basic world climate zones – polar, tropical, microthermal...
4. Latitude & temperature (subsolar point, angle of incidence, oblique rays...)
5. Climate: land and water (transmission)
6. Ocean circulation - surface and deep currents (know the name of major surface currents)
7. Thermohaline circulation
8. Altitude: temperature/pressure influence on climate
9. Orographic effect and other topographic barriers to circulation (convergence)
10. Persistent weather patterns as climate – thunderstorms and hurricanes
11. How do humans influence regional climates? What are urban heat islands?
12. Regional Climate Case Study – Galapagos Islands
13. Discuss the climate of the Galapagos Islands - seasonality, current, elevation change
14. Be able to identify the major climate zones of the Islands and basic corresponding characteristics of each (i.e. vegetation)
15. What is a temperature inversion and how do they form? How do they influence climate?
16. Vertical and horizontal air pressure at the earth's surface (i.e. pressure change with latitude and pressure change with altitude)
17. Thermally and dynamically induced pressure systems
18. What forces create and disrupt wind flow?
19. Pressure gradient force and Coriolis effect on wind
20. Know all examples and case studies

Exam II Format & Brief Review for Regional Climatology

First question on the Exam

Come to Class

Subject to minor modification

Exam Format (total points possible on the exam: 40)

Part I: Multiple Choice Questions (~16 points)

Each question is worth 1 point.

Any information printed on an overhead is fair game.

Expect several readings questions

I ask questions which go beyond definitions - questions that make you link several concepts.

Part II: Sketch and Label w/Short Description Discussion (~10 points)

Example: Global circulation model and/or climatic classification on a hypothetical continent that bisect the equator.

Part III: Short Answer and/or Listing (multiple questions will come directly from the Review Question section in your text) (~4 points)

Part IV: Terminology Short Answer (10 points)

10 short definitions/essay each worth 1 point

2 bonus short answer question

Expect several terms from the Key Terms Section in your text

Example: Centripetal Force: the acceleration needed to keep an object in a circle at a particular radius. For freely moving objects on Earth, the radius is a line perpendicular to the axis of Earth's rotation.

Exam II Format & Brief Review for Regional Climatology

Readings

Text Readings -

Chapters: 6, 13, and 9

We did not get to tropical climates. Do not read chapter 11 – yet.

Online Reading:

Lydolph, P.E. (1985) The Climate of Earth: Climatic Classification and Distribution (Chapter 15). Rowman and Allanheld Publishers, New Jersey.

Read and reread your notes. Most of the exam will come from this source. Create a condensed outline from your notes. Know all examples.

General Study Guide

1. Wind, pressure gradient force and isobars.
2. Coriolis effect → minimum and maximum deflection, overshoot, undershoot, east/west deflection, minimum/maximum deflection
3. Force of friction on wind.
4. The nature of cyclones & anticyclones.
 - convergence or divergence, rising or fall air...
5. Earth's general circulation system → all parts covered in class → be able to draw, label, and discuss all parts of the system; i.e., ITCZ, doldrums, horse latitudes, polar cell, hadley cell, polar cell, ferrel cell, wind name and prevailing direction, dynamic/thermal...
6. Jet stream and influence on climate.
7. Classification system; limits of classification (Koppen/) Thornthwaite).
8. Relationship between climate, latitude, and natural vegetation
9. Idealized climatic classification on a model that bisects the equator with no significant relief. Predictability of climate types.
10. Koppen classification (know all abbreviations and meanings; i.e. BWh, Csb, Cfa...). Five great groups of climate and eleven principal types of climate.
11. Hurricanes, soil moisture and climate. Case study: drought abatement.
12. Soil moisture environment and climate – Thornthwaite's classification
13. Thornthwaite classification and water budgets → surplus Vs deficit and potential evapotranspiration and Thornthwaite's Water Balance Equation
14. The soil moisture environment i.e. capillary action, gravity water...
15. Case Study Super-Antifreeze: Polar Plants Withstanding the Cold
16. Interpreting climographs for varying climatic regions.
17. Polar climates. Types. How are they classified and why? Permafrost influence on climate.
18. Summary of polar climates → general description, controlling factors, location...

Exam III Format & Brief Review for Regional Climatology

Exam Format (total points possible on the exam: 50)

First question on the Exam

Come to Class

Which of the following is **incorrect** regarding tundra climates?

- a) ET; b) low evaporation; c) precipitation is greater than potential evapotranspiration;
- d) low precipitation;
- e) dwarfed tree species such, as spruce and fir, are common

Part One: 26 multiple choice questions (26pts)

Any information printed on an overhead is fair game.

Expect several readings questions

I ask questions which go beyond definitions - questions that make you link several concepts.

Part Two: Fill-in-the-Blank – (5pts)

Part Three: Lab Questions – may include a brief discussion of a climograph, and/or one Koppen classification problem, and/or a selected question for discussion from the essay section of the lab (4pts)

Part Four: Short Essay – (5pts)

A short essay from your notes, and/or a cumulative knowledge essay and/or an essay(s) from the questions section in the textbook

Part five: Term/Concept Short Answer – (10pts)

10 short definitions/essay each worth 1 point

Expect bonus points in the short answer section

Expect several terms from readings

Exam III Format & Brief Review for Regional Climatology

Readings

Text Readings -

Chapters: 11, 12, 15, and 16

You do not have to read the Kennedy (climate change) article on electronic reserve

Online Reading:

Smithson article →

Dryland Environments

Read and reread your notes. Most of the exam will come from this source. Create a condensed outline from your notes. Know all examples.

General Study Guide

1. Interpreting climographs for varying climatic regions.
2. Koppen classification (**be certain that you still know all abbreviations and meanings of the system; i.e. BWh**)
3. Periglacial and permafrost climates...the climatic controls of each
4. Geomorphology as influenced by polar climate (morphoclimatic conditions)
5. Cryoturbation, stone stripes, pingo, palsa and what forms each
6. Climate of Antarctica → precipitation and circulation
7. Case Study: Highland climates and human activity → vertical climate zones...know each zone...activities in each climate
8. Highland climate characteristics – radiation, slope, aspect, circulation, temperature, wind, mountain/valley breezes...
9. Low and midlatitude deserts (BW)
10. General controlling characteristics of desert climates and the exceptions to the rule
11. Case study: Living in the Sahel – Human anatomical/physiological adaptations to hot climates
12. Advancing deserts: desertification in the Sahel...cause of
13. Basics regarding climate of: tropical, subtropical, and marine west coast (from your textbook)
14. North American air mass creation, location, classification, and degree of stability; air masses as a climatic control
15. Methods for determining past climates w/details on dendrochronology, ice coring and ocean sedimentation
16. Past climates → what was the climate like in the past and why this is important in understanding climate change today
17. Causes of climate change with several readings questions on climate change
18. Basic concepts from student presentations