Hunter College-CUNY
GEOG 101 – Atlas Extra Credit for Exam II

The extra credit exercises associated with each third of the course are worth a **maximum of 9 points** added to your exam score at the end of each third. For Exam 2, the extra credit exercise focuses on climate and climate controls.

This extra credit assignment is due
no later than
WEDNESDAY, April 11, 2018
Yes, we meet on a Wednesday this week.

All answers are to be placed on the blue Scantrons. The machine will mark wrong any omissions and double entries in addition to incorrect answers. Please be very careful to place the answers in the correct numbered spots on the answer sheet. As indicated on the syllabus, the number of extra credit points is based on the percent of correct answers - maximum points are +9.

Be sure to write your name on the FRONT of the Scantron sheet
and
BUBBLE IN your Last name, First name on the BACK of the blue sheet.

Once the answers are posted, no Scantron sheets or exercise with the answers circled will be accepted.

GEOG 101 - EXTRA CREDIT EXERCISE 2
CLIMATES

Consult CHAPTER 2 of your Dahlman and Renwick textbook (descriptions, diagrams and maps), **an atlas to locate places and class notes for the answers to this extra credit assignment. There are climate, ocean current, and wind maps at the end of the exercise.**

1. Which continent has the greatest number of major climatic regions according to the Köppen Classification System? (Count the **letter designations** but only once.)
   a) North America (includes Greenland, Central America and the Caribbean)
   b) South America (excludes Central America and the Caribbean)
   c) Asia (includes the Middle East and the islands of the East Indies)
   d) Africa (includes Madagascar but not the Arabian Peninsula)
   e) Europe

2. Which continent has the fewest major climatic regions according to the Köppen Classification System? (Count the **letter designations** but only once.)
   a) Europe b) South America c) Australia d) Africa e) Antarctica

Locate the following places and determine their climate. Do this by consulting the atlas's index to find each location's coordinates and then transfer these coordinates to the world climate map on the last page on this exercise. Use the following key to indicate your answer:

1 = Tropical rainforest: Af	***7 = Humid Subtropical: Cfa***
2 = Tropical savanna: Aw	***8 = Humid Continental: Dfa, Dfb***
3 = Desert (arid): BW	***9 = Subarctic: Dfc, Dfd***
4 = Steppe (semi-arid): BS	***10 =Tundra: ET***
5 = Mediterranean: Cs	***11 = Icecap: EF***
6 = Marine West Coast: Cfb, Cfc	***12 = Highland: H***

3. Gaborone, Botswana: a) 2 b) 4 c) 1 d) 3 e) 8

4. Yakutsk, Russia: a) 3 b) 6 c) 7 d) 9 e) 11

5. Los Angeles, USA: a) 6 b) 3 c) 5 d) 8 e) 1

6. Mumbai, India: a) 2 b) 4 c) 8 d) 1 e) 12

7. Tokyo, Japan: a) 1 b) 9 c) 2 d) 11 e) 7

8. Montreal, Canada: a) 3 b) 5 c) 7 d) 8 e) 9

9. Mecca, Saudi Arabia: a) 1 b) 3 c) 5 d) 9 e) 10

10. Cape York Peninsula, Australia: a) 1 b) 9 c) 2 d) 11 e) 3

11. Seattle, USA: a) 10 b) 6 c) 7 d) 4 e) 11

12. 75^{o}N, 40^{o}W, Greenland: a) 1 b) 3 c) 7 d) 8 e) 11

13. Algiers, Algeria: a) 2 b) 12 c) 5 d) 6 e) 10

14. Guangzhou, China: a) 1 b) 5 c) 7 d) 8 e) 12

Use the following key to indicate your answer:

1 = Tropical rainforest: Af	***7 = Humid Subtropical: Cfa***
2 = Tropical savanna: Aw	***8 = Humid Continental: Dfa, Dfb***
3 = Desert (arid): BW	***9 = Subarctic: Dfc, Dfd***
4 = Steppe (semi-arid): BS	***10 =Tundra: ET***
5 = Mediterranean: Cs	***11 = Icecap: EF***
6 = Marine West Coast: Cfb, Cfc	***12 = Highland: H***

15. Point Barrow Alaska, USA: a) 1 b) 3 c) 7 d) 8 e) 10

16. Yellowknife, Canada: a) 2 b) 12 c) 5 d) 6 e) 9

17. Charleston (SC), USA: a) 1 b) 3 c) 5 d) 7 e) 9

18. South Pole, Antarctica a) 11 b) 4 c) 7 d) 8 e) 1

19. Lagos, Nigeria: a) 2 b) 10 c) 8 d) 6 e) 7

20. Manaus, Brazil: a) 2 b) 4 c) 7 d) 1 e) 9

21. Miami, USA: a) 11 b) 4 c) 7 d) 2 e) 1

22. Addis Ababa, Ethiopia: a) 2 b) 12 c) 5 d) 6 e) 9

23. Wellington, New Zealand: a) 2 b) 12 c) 5 d) 6 e) 10

24. Iquique, Chile: a) 1 b) 3 c) 7 d) 8 e) 11

25. Moscow, Russia a) 8 b) 4 c) 7 d) 11 e) 1

26. Cairo, Egypt: a) 1 b) 3 c) 5 d) 7 e) 9

27. New York City, USA: a) 1 b) 10 c) 8 d) 6 e)

28. Denver, USA: a) 11 b) 4 c) 7 d) 8 e) 1

29. Perth, Australia a) 6 b) 5 c) 7 d) 8 e) 3

In general, the world's climate regions are aligned in a latitudinal (east-west) direction.

30. This arrangement is a reaction to the amount of _____ at different latitudes.

a) solar energy received
b) precipitation received
c) evaporation from the oceans
d) speed of the rotation of the earth

Exceptions to this general alignment are found around the world. Match the region with the strongest influence that causes the exception. *Use the following key to indicate your answer:*

a. north-south orientation of a topographic barrier
b. nearby warm ocean current
c. nearby cold ocean current
d. longitude

31. west coast of Norway a. –- b. –- c. –- d. –-
32. island of Madagascar a. –- b. –- c. –- d. –-
33. southwest Africa a. –- b. –- c. –- d. –-

Consult the ocean currents map.

34. Which current **DOES NOT** form part of the circulation system of the North Atlantic Ocean?

a) Canary b) Gulf Stream c) Norwegian d) Benguela

35. True - False: The Equatorial Counter Current separates the ocean circulation system of the northern ocean basins from that of the southern ocean basins.

a) TRUE b) FALSE

36. Which current is **NOT a cold** current?

a) Peru b) West Australia c) Alaska d) California

Focus your attention on South America.

37. Which pattern does the climate regions of Peru exhibit?

a) No pattern. The climate is generally uniform throughout the country.
b) Climates run in a general east-west direction parallel to lines of latitude.
c) Climates run in a general north-south direction parallel to the coastline.
d) The general pattern of the climate regions is one of small circular units.

38. Which is climate region is NOT found in Peru?

a) B - dry
b) H - highland
c) A - tropical rainforest
d) D - humid continental

39. Comparing the general pattern Peru's climates with terrain, proximity to the ocean, and the latitudinal location of its climates, which is NOT a determining factor for their existence?

a) landforms b) ocean currents c) longitude d) elevation

Focus your attention on Patagonia, a region of Argentina in South America. Consult the climate and landform maps and the global wind system diagram.

40. The climate of Patagonia is classified as being mostly

a) tropical rainforest b) arid c) humid subtropical d) tundra

41. The predominant winds found in this region are the

a) westerlies b) polar easterlies c) southerlies d) southeast trades

42. Patagonia's precipitation and environment characteristics are a result of its location

a) on the leeside of the Andes Mts.
b) on the windward side of the Andes Mts.
c) near the Atlantic Ocean.
d) at very high elevations.

To the north, in contrast to Patagonia, the Pampas of Argentina exhibit humid subtropical climatic characteristics.

43. It is warmer as one goes from south to north in Argentina because

a) the elevation is lower in the north.
b) north is in the direction of the equator.
c) a warm water current flows into the Rio de la Plata.
d) there is an urban heat island affect radiating from Buenos Aires.

Locate the following deserts by continent. *Use the following key to indicate your answer:*

a. Africa **b. Asia** **c. North America** **d. Australia** **e. South America**

44. Gobi:	a. --	b. --	c. --	d. --	e. --
45. Great Victoria:	a. --	b. --	c. --	d. --	e. --
46. Mojave:	a. --	b. --	c. --	d. --	e. --
47. Ar Rub al Khali:	a. --	b. --	c. --	d. --	e. --
48. Kalahari:	a. --	b. --	c. --	d. --	e. --
49. Atacama:	a. --	b. --	c. --	d. --	e. --
50. Sahara:	a. --	b. --	c. --	d. --	e. --

***From latitudes 10°S to 25°S, the Atlantic Ocean coasts of South America and Africa, although both tropical, have opposite precipitation characteristics*.**

51. What causes the South American coast to be hot/wet while the African coast is hot/dry?

a) temperature of the ocean currents
b) predominant direction of wind flow
c) combination of “a” and “b”
d) mountain ranges
e) combination of “a” and “d”

The coastal cities of Reykjavik, Iceland and Bergen Norway are located between 60° and 65° north latitude, yet both have moderate “C” climates.

52. Why are they so warm at such high latitudes?

a) Cloudless skies give maximum solar energy.
b) At this latitude, there are equal hours of day and night throughout the year.
c) The temperature of the North Atlantic Drift moderates the temperature.
d) Mountain ranges protect the cities from cold Arctic air masses.

***London, Paris and Rome (located between 45° N -55° N) are warmer than other cities of Eurasia at similar latitudes because of the influence of warm, moist air masses*.**

53. Eurasian cities located further east along the same latitudes are NOT affected by these air masses. Why?

a) High north-south mountains block the winds from flowing across Eurasia.
b) Because of the great distances involved, the air masses lose their characteristics as they move eastward across Europe.
c) The amount of solar energy received varies with longitude.
d) The continental influence of the landmasses warms the air in winter and cools it in summer.

Focus your attention on the tropics.

54. The **temperature** characteristics of the tropical climates can be **generalized** as

a) being always mild.
b) being always very warm.
c) having a hot summer with a mild winter.
d) having a cool winter with a mild summer.

55. The **average annual precipitation** associated with the **tropical humid zone** (Af, Am) is
a) Less than 10 inches **b)** between 20 and 60 inches **c)** 60 or more inches.

56. The **average annual precipitation** associated with the **tropical desert zone** (BWh) is
a) Less than 10 inches **b)** between 20 and 60 inches **c)** 60 or more inches.

Focus your attention on the temperate climates.

57. The humid subtropical climates of southeastern United States, southeastern China and southern South America are a result of **several unifying characteristics** that have joined to create subtropical conditions. **These conditions are:**

a) onshore winds blowing over warm ocean current.
b) onshore winds blowing over cold ocean current.
c) mountains funneling moist westerly winds into each region.
d) cold offshore current and winds blowing from land to ocean.

58. True - False: The humid continental climate zones (D group) are found in both the northern and southern hemispheres.

a) True b) False

59. The controlling factor for the existence of continental climates is

a) climatologic data.
b) a large landmass.
c) mountains to cool the prevailing winds.
d) vast expanses of oceans.

60. True - False: The humid continental "D" climates extend further south along the eastern side of North America, Europe, and Asia than on their western sides.

a) True b) False

61. All of the following statements support your answer to the previous question <u>except</u>:

a) On the east side of the continents, the prevailing winds blow from water to land, thereby cooling the landmasses.
b) On the west side of the continents, the prevailing winds blow over warm currents, thereby moderating the climates at higher latitudes.
c) On the east side of the continents, the prevailing winds blow the moderating influences away from the land.
d) Winds coming from the west that had been moderated by the warm ocean currents lose their moderating characteristics while traveling over the continental land masses.

Chief climate characteristics of climate groups: *Use the following key to indicate your answer:*

a. A - Tropical humid
b. B - Dry
c. C - Warm mid-latitudes
d. D - Continental
e. E - Polar

62. Very low average annual temperature:	a. --	b. --	c. --	d. --	e. --
63. Warm and rainy throughout the year:	a. --	b. --	c. --	d. --	e. --
64. Great seasonal contrasts in temperature:	a. --	b. --	c. --	d. --	e. --
65. Warm summers and mild winters:	a. --	b. --	c. --	d. --	e. --
66. Evapotranspiration exceeds precipitation:	a. --	b. --	c. --	d. --	e. –

67. True - False: All subgroups of the Dry "B" climate group are completely barren of vegetation.

a) True b) False

68. Which subgroup of the warm midlatitude "C" climate group has a distinctive summer dry period?

a) Cfb Marine West Coast b) Cs Mediterranean c) Cfa Humid subtropical

69. Which subgroup of the humid tropical "A" climate experiences a pronounced dry period during its "cooler" months?

a) Af b) Am c) Aw

70. Which subgroup of the Polar "E" climate never averages a monthly temperature above freezing?

a) ET b) EF

Climographs help us see the average climate characteristics for each month of the year.

71. When a location's <u>temperature line</u> on a climograph looks like a "valley" instead of a "hill" or a "straight line" it is an indication that the site is located in the

a) Northern hemisphere
b) Tropics
c) Southern hemisphere
d) Polar region

Consult the following web site to answer the questions posed against the specific cities named: **http://drought.unl.edu/DroughtBasics/WhatisClimatology/ClimographsforSelectedUSCities.aspx . Use the "English measurement" map, not the "metric map."** *To locate the city on the interactive map, move your cursor over the state to show the name of the city next to each dot. Click on the dot to open the climograph for the city.*

72. For **Hilo, Hawaii,** the climograph represents which major climate group?

a) Tundra
b) Dry summer subtropical
c) Tropical rainy
d) Humid continental hot summer

73. For **Boise, Idaho,** the climograph indicates that there is a large range of temperature between the warmest and coldest months.

a) TRUE b) FALSE

74. For **Caribou, Maine** the climograph indicates that the average temperature for the coldest months (Jan. and Feb.) is less than 15°F.

a) TRUE b) FALSE

75. For **Birmingham, Alabama**, the greatest amount of precipitation occurs during the summer months.

a) TRUE b) FALSE

76. Compare **Houston, TX**, **New Orleans, LA** and **Miami, FL** climographs. Which city of the three has <u>both</u> an evenly warm average monthly temperature and a noticeable dry season?

a) Houston b) New Orleans c) Miami

77. Boston, Massachusetts has a noticeable warm season and each month receives about the same amount of precipitation.

a) TRUE b) FALSE

78. Which city of Alaska has the greatest difference in temperature throughout the year?
a) Anchorage b) Fairbanks c) Juneau

79. For **Eugene, Oregon** has a summer dry season.
a) TRUE b) FALSE

80. For **Phoenix, Arizona**, the month that receives more than 1 inch of precipitation annually is
a) January b) March c) August d) November

****

MAP SECTION

Figure 1 Global wind systems
Figure 2 Wind zones
Figure 3 Surface ocean currents
Figure 4 World climates

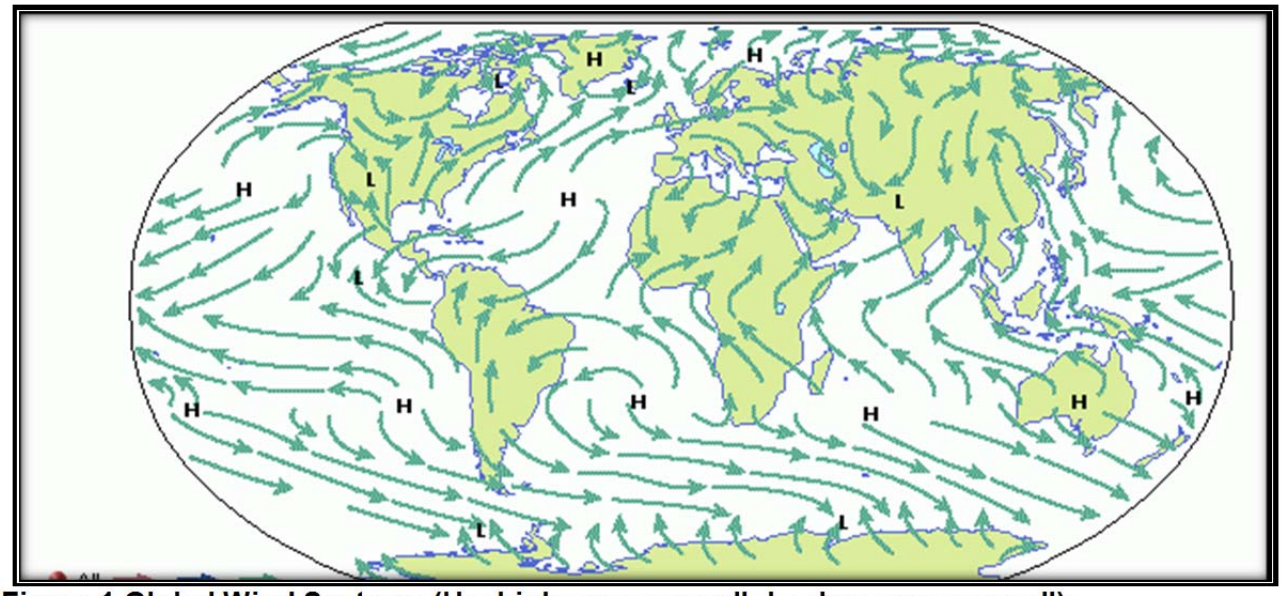


Figure 1 Global Wind Systems (H = high pressure cell; L = low pressure cell)

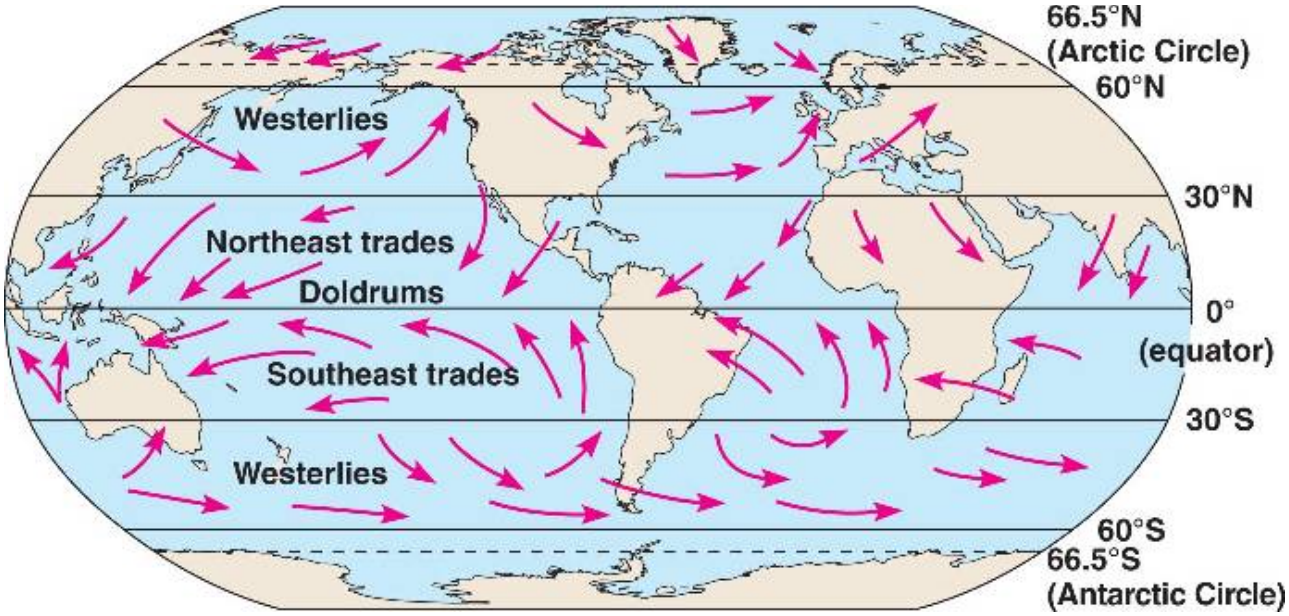


Figure 2 Named Wind Zones with Latitude Markers

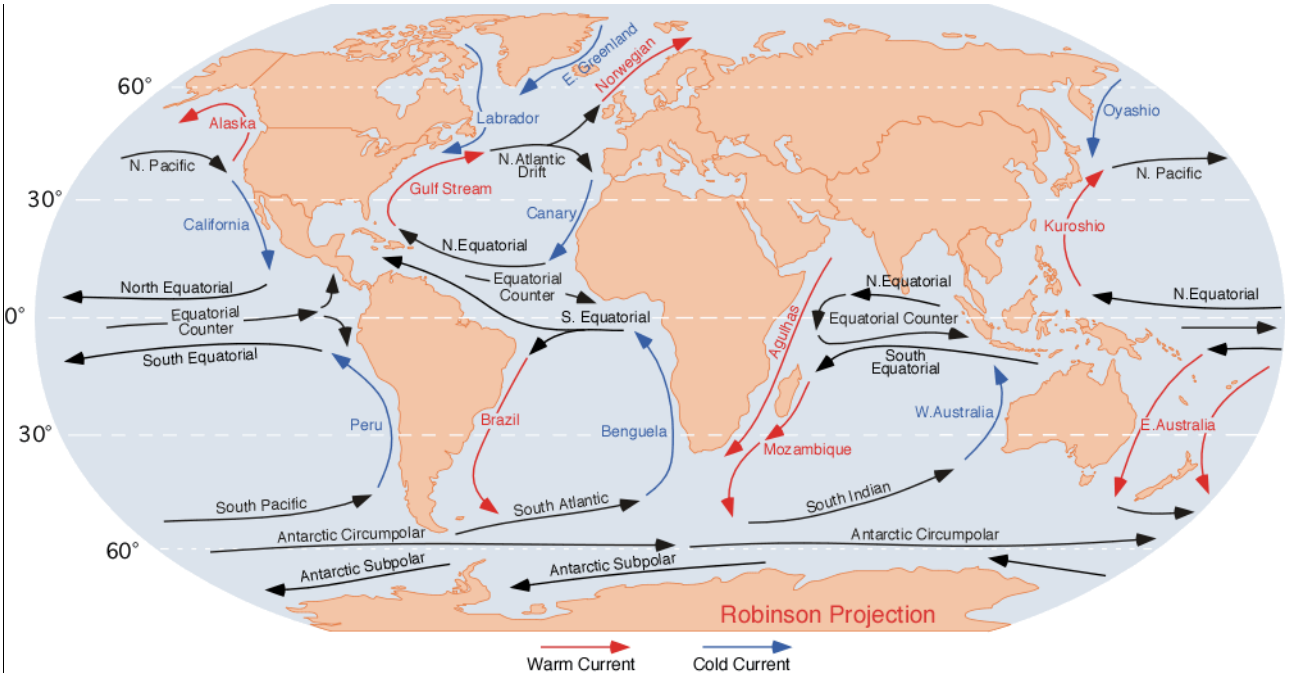
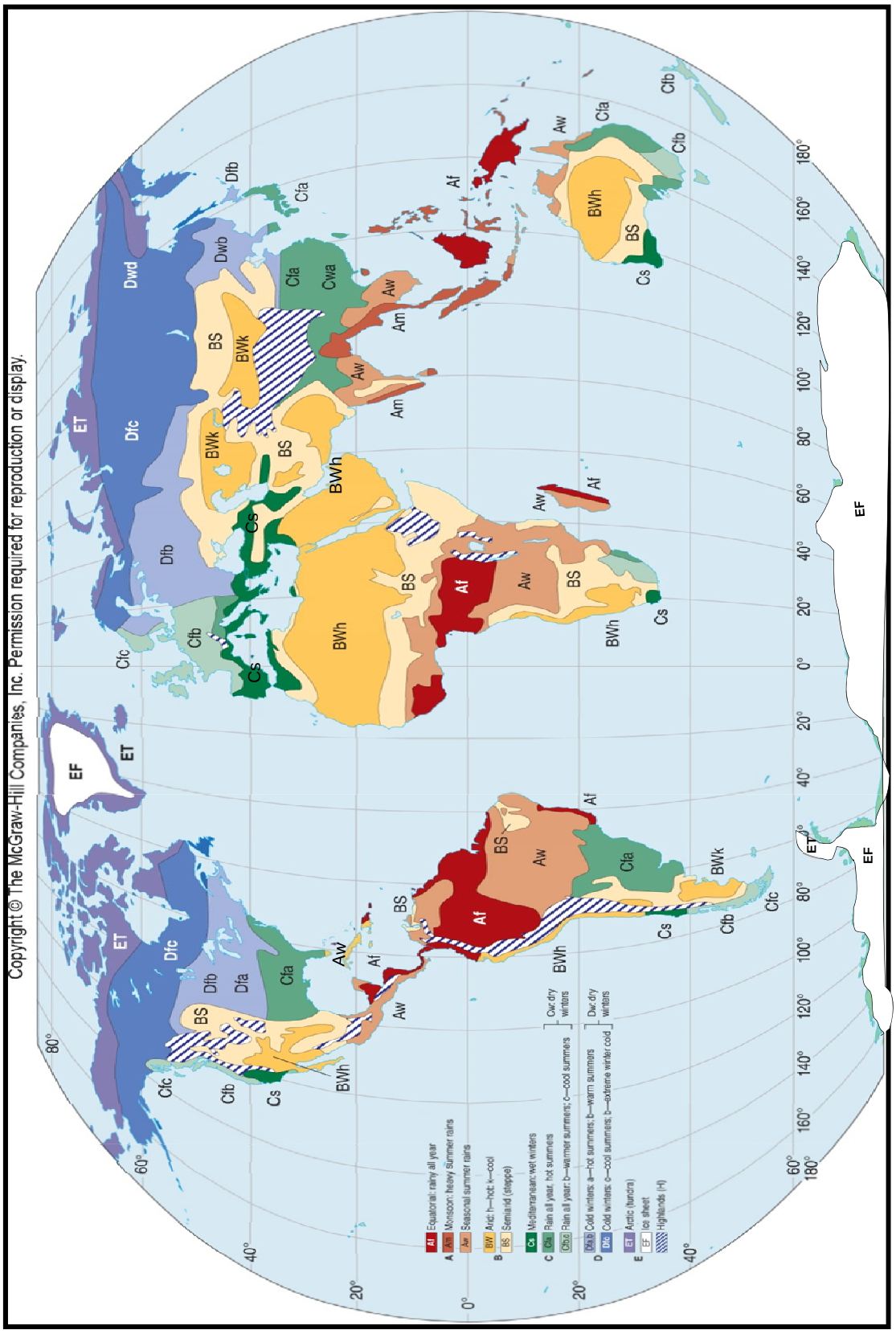


Figure 3 Surface ocean currents

Figure 4 World climate map (Köppen Classification System). Also consult map in textbook.



©AFG 0318