**GEOG 1301 UNIT 1 REVIEW**

# 1. WHAT IS GEOGRAPHY?

* science of geography is likely the oldest of all sciences. Geography is the answer to the question that the earliest humans asked, "What's over there?" Exploration and the discovery of new places, new culture, and new ideas have always been basic components of geography
* geography is often called the "mother of all sciences" as studying other people and other places led to other scientific fields such as biology, anthropology, geology, mathematics, astronomy, chemistry, etc
* looks at how things differ from place to place
* has no unique body of facts or concepts it can call wholly its own
* a very broad field of inquiry … borrows its concepts from related disciplines
* both a physical science and a social science … combines characteristics of both
* interested in interrelationships … examining how various factors interrelate
* always has a spatial / distributional focus

# 2. TWO BRANCHES

* physical / environmental geography - the natural features of the earth
* human / cultural geography - human culture and its impact on the earth

# PHYSICAL GEOGRAPHY

Science as a Field of Learning (the scientific method)

* Observe phenomena that stimulates a question or problem
* Offer an educated guess (hypothesis) about the answer
* Design an experiment to test the hypothesis
* Predict the outcome of the experiment
* Conduct the experiment and observe the outcome
* Draw conclusions and formulate rules based on the experiment

Earth is a closed system / sphere that we divide into 4 sub-spheres.

* atmosphere
  + - composition
    - climate vs weather
    - energy, heat and temperature
    - pressure and wind
    - moisture
    - storms and disturbances
    - climatic zones
* hydrosphere
  + - water properties
    - water distribution
    - water cycle – oceans, evaporation, sublimation, evapotranspiration, atmosphere, condensation, precipitation, ice and snow, snowmelt, runoff, stream flow, surface water, infiltration, ground water, discharge, springs
* biosphere
  + - ecosystems
    - factors that influence ecosystems
    - biogeochemical cycles
* lithosphere
  + - soil
    - earth’s structure
    - plate tectonics
    - landforms
    - geological hazards

# HUMAN GEOGRAPHY

Two methods of study

* by region

## Areas of the earth’s surface marked by certain properties

## Devices that enable us to make spatial generalizations

## Based on criteria we establish

## Criteria can be human or physical properties or both

## All regions have

#### Area

#### Boundaries

#### Location

[*Audio Pronunciation Guide*](http://bcs.wiley.com/he-bcs/Books?action=mininav&bcsId=4608&itemId=0470237139&assetId=152419&resourceId=14558&newwindow=true)

* by concept / theme
  + Physical (environmental) geography - more problem oriented
    - atmosphere – atmospheric hazards, global warming
    - hydrosphere – distribution, use, flooding, oceans
    - biosphere – deforestation, desertification, food resources
    - lithosphere – geological hazards
  + Cultural (coherence and diversity) geography
    - learned, shared behavior … way of life
    - cultural diffusion
    - cultural conflict
    - language
    - ethnic culture
    - religion
  + Demography (population and settlement)
    - population size and distribution
    - population growth and change
    - demographic transition model
    - migration patterns
    - settlement patterns
    - urbanization
  + Political (geopolitical) geography
    - nation-states
    - boundaries
    - colonialism
    - fragmentation and unity
    - international and supranational organizations
  + Economic (development) geography
    - more / less developed
    - core-periphery model
    - indicators or economic development
    - indicators of social development
    - sustainable development

# 3. THE GEOGRAPHIC GRID

A system of accurate location is necessary to pinpoint with mathematical precision the position of any spot on Earth’s surface.

The grid system is the simplest technique, using a network of intersecting lines.

Four Earth features provide the set of reference points essential to establish an accurate locational system.

* North Pole
* South Pole
* rotation axis
* equatorial plane

If a plane passing through the middle of a sphere dividing it into two equal halves, it creates what we call a great circle (the largest circle we can draw on a sphere).

* Equator
* Circle of Illumination

Latitude—the distance measured north and south of the equator … expressed in degrees, minutes and seconds.

Equator, 0°

North Pole, 90° N

South Pole, 90° S

Tropic of Cancer, 23.5° N

Tropic of Capricorn, 23.5° S

Arctic Circle, 66.5° N

Antarctic Circle, 66.5° S

statute miles or 1.85 kilometers).

Longitude—the distance measured east and west on Earth’s surface.

prime meridian—the meridian passing through the Royal Observatory at Greenwich, England. We measure longitude from this meridian both east and west to a max of 180°.

**4. MAPS**

two-dimensional representation of the spatial distribution of selected phenomena

* map attributes
  + - distance
    - direction
    - size
    - shape
    - show distribution of one or more phenomena
  + map limitations
    - no map is perfectly accurate
    - impossible to show curved earth on flat surface without distortion
    - equivalence (relative size) vs conformality (shape)

MAP SCALE

relationship between length measured on map and corresponding distance on ground

### Scale Types

* Graphic Map Scales - Uses a line marked off in graduated distances
* Fractional Map Scales - Uses a ratio or fraction to express the comparison of map distance with ground distance
* Verbal Map Scales - uses words to give the ratio of the map scale length to the distance on the ground

### Large and Small Scale

concepts of large and small are comparative, not absolute

* Large-scale map— has a relatively large representative fraction, which means the denominator is small — 1/10,000 is large-scale as compared to 1/1,000,000.

Portrays only a small portion of Earth’s surface, providing considerable detail.

* Small-scale map — has a small representation fraction, which means the denominator is large.

Portrays a larger portion of Earth’s surface, but gives only limited detail.

# MAP ESSENTIALS

* Title — brief summary of map’s content or purpose and identify area it covers
* Orientation — show direction through a compass rose, geographic grid or north arrow
* Date — the time span in which the map’s data were collected
* Legend — explain any symbols used in the map to represent features / quantities
* Scale — a graphic, verbal or fractional scale to indicate the relationship between length measured on the map and corresponding distance on the ground
* Location — a grid system, either a geographic grid using latitude and longitude or an alternative system that is expressed like the *x* and *y* coordinates of a graph
* Data Source — the data source for thematic maps
* Projection type — the type of projection, particularly for small-scale maps

##### MAP PROJECTIONS

problem – imagine a large transparent globe with many features. You carefully cover the globe with a sheet of paper. You turn on a light bulb at the center of the globe and then trace all of the features onto the paper. Carefully remove the paper and flatten it on the table.

equivalence (relative size) vs conformality (shape)

can’t do both – which do you sacrifice?

* Cylindrical Projections - created by mathematically “wrapping” a globe in a cylinder

mercator projection — a special-purpose projection that was created more than 400 years ago as a tool for straight-line navigation

distorts size - for example, Greenland appears much larger than Africa, South America and Australia, although Greenland is actually smaller than them. Africa is 14 X larger than Greenland.

* Planar Projections - created by projecting the markings of a center-lit globe on a flat piece of paper.

no more than one hemisphere can be displayed

* Conic Projections - created by projecting the markings of a center-lit globe onto a cone wrapped tangent to, or intersecting, a portion of the globe

because of the distortion associated with them, they are better suited for mapping smaller regions (i.e., a single country)

* Pseudocylindrical Projections - are generally designed to show the entire globe … These projections usually employ a central parallel and a central meridian that cross at right angles in the middle of the map.

Distortion usually increases in all directions away from the point where these lines cross.

* Interrupted Projections - a technique used to minimize distortion … Ocean regions are usually split apart or “interrupted” so that the distortion over landmasses is minimized.

The result is a map with very little distortion over land and great gaps over the oceans.

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