REMINDERS

- Two required essays (10% of your grade) were due on April 17.
- Late penalty now applies (better than a zero!).
- Must submit missing essays by May 12, 2020 to avoid a ZERO grade.

EXAM III – Final Exam
Tuesday, May 19, 2020
from 9 AM – 11 AM
on BlackBoard
Covers Part III of the course.

FREE REMOTE TUTORING IS AVAILABLE from the HC Skirball Learning Center

TEXTBOOK READING FOR PART III
Selected parts of Chapters 6-12

GEOGRAPHY of ECONOMICS
Chapters 9 and 12

- Covers the geographic (spatial) aspects of an area’s economy and development and the ability of a population to provide for itself outside of the bare necessities for existence.
- Just existing on the bare necessities is known as subsistence and is associated with a self-sufficient agrarian society in “Stage 1” of the Demographic Transition Model.

GEOGRAPHIC RELEVANCE

When you link of a successful, profitable retail enterprise or the value of real estate… what word (geographic aspect) comes to mind?

LOCATION

LOCATION!!

ECONOMIC GEOGRAPHY

- Economic Geography is the application of geographic principles and tools to people’s activities, businesses and governmental functions, including military activities.
- The study of the spatial variation on earth of activities related to the production, exchange and consumption of goods and services leading to the accumulation of wealth.
- It relies heavily on maps, analytical methods and models in search for explanations.
Sectors of Economic Activity

There are three main sectors of economic activity:
1. Primary: taking from nature
2. Secondary: processing and creating
3. Tertiary: selling and serving

- We can add a 4th sector: Quaternary which is data collection and management.

The less developed an area, the higher the percentage of the work force is found in the primary activities, esp. food production.

Food Production and Agriculture as an economic activity

- Food is a basic human need.
- After air, food and water are the basis of life on earth.
- Acquiring food is the oldest human activity. (relates to the push/pull/stay factors when selecting a place to live).
- Food collection is the original “survival activity” for people (first gathering, then hunting, and later agriculture).
- We have seen that the amount and quality of food affects population growth and distribution (population geography; climate change) – and not everyone can acquire enough nourishment to lead full and healthy lives (medical geography).

http://www.fao.org/home/en/: review the UN Food and Agriculture web pages from last lecture.

Agriculture Terms

- Arable land: land that can be plowed for cultivation.
- Nonagricultural land: area too hot, too cold, or too dry for agriculture; cannot produce food to sustain a population.
- Subsistence agriculture: food produced for oneself and one’s family.

- Commercial agriculture: food produced for sale.
- Polyculture: raising a variety of crops.
- Monoculture: specializing in one product.
- Economies of scale: greater earnings per unit produced by expanding the area used and/or the number of units produced.

Variables Determining Types of Agriculture

This is a combination of an area’s physical characteristics and human adaptation, culture and technological development.

1. Natural environment (climate, water, soil)
2. Most productive crops in that environment (best suited for conditions)
3. Level of technology (ability to cope with environmental and economic situations)
4. Market orientation and transportation (who is buying/using and how does it get there)
5. Production for human or animal consumption (consumer’s quality expectations) or non-consumption (industrial use)

World of Agriculture

Worldwide, there are many types of agricultural land uses. Different methods of working the land to produce food are influenced by local climate, landforms, economics and cultural preferences.

Hearths (origins) of the World’s Food and Livestock

Fig. 9.2 textbook

Agricultural hearths are studied in cultural geography.
Many Varieties of Agriculture

- Nomadic herding
- Subsistence farming
- Intensive rice farming
- Mixed grains w/ legumes
- Mixed farming w/ livestock
- Prairie grain farming
- Mediterranean agriculture
- Plantation farming
- Ranching
- Irrigated agriculture
- Govt settlement schemes
- Urban agriculture
- Horticulture
- Floriculture
- Fishing (as a food source)
- Aquaculture

This is studied in cultural geography.

Agricultural Productivity varies by region

[maps and graphs]

Remember Malthus?

Thomas Malthus predicted in 1798 that world population would increase faster than the food supply, creating cycles of mass starvation.
- Since 1798, the human population has increased from 1 billion to c.7.79 billion.
- The mass starvation he predicted has not occurred.

WHY? > > Because people have come up with new technologies to produce, store and move food supplies.

- New crops
- Crop transplants
- New cropland
- Irrigation technologies
- Transportation and storage advances
- Chilling/refrigeration
- Biotech and genetic engineering
- Improved protection against spoilage and pests
- Advanced monitoring technology

Scientific Revolution in Agriculture

- It began in 18th century Europe with the application of science to agriculture. Farm machinery increases yields. Improvements in transportation, trade, and storage of agricultural products increases supplies.
- Green Revolution (20th century) Advances in biotechnology in the US. This gave the world a variety of new techniques for modifying organisms and their physiological processes for specific applied purposes.
- The 21st century has brought opposition to genetically modified crops and cloning.

Gene splicing
Recombinant DNA
Genetic modification
Cloning
Bio-farming
Faster growth
Increased quantities
Specified qualities
Resistance to disease
Resistance to severe weather (as drought, heat/cold)

World Acceptance and Rejection of Genetically Modified (GM) Crops

These maps show the products that are the sources of energy and protein by country.

- Now we have to think about the affects of climate change on food production.
Aquatic Food Supplies

- Aquatic foods (fresh and salt water sources) includes fish, crustaceans, mollusks, aquatic mammals, amphibians, plants, and other aquatic life.
  - Supplies 2% of the world’s daily calories and 8% of the world’s daily protein.
  - Many areas of the world rely on protein from the oceans to supplement local food supplies.
- Overfishing and depletion of the seas is a major problem that is difficult to regulate.

Fish: an area where particular kind of fishing takes place.

Economic Development

- RELATIONSHIP TO THE LAND CHANGES with economic development
  - Population – demographic transition model
  - Natural Resources – use and conservation
  - Environmental Issues – concerns for environment, assessing methods and profits
- There is a movement away from the land (both physical and mental) as development progresses.

Globalization

- Economic Globalization: Refers to the emergence of a global economy based on free trade, internationalized production and free flow of capital between countries (chapter 12).
- Cultural globalization: Refers to the emergence of a global culture that tends to flatten out cultural differences between nations due to the global flow of particular products (Chapter 7).
- Political globalization: Refers to the growing importance of international organizations; spread of universal values and norms; national markets and economies are opened to international actors (Chap. 11)
Sustainable Economic Development

- Economic aspects of sustainable development and resource management include:
  - Population vs. habitat – an assessment of needs
  - Movement of people to the cities - industrialization
  - Increased use of raw materials/resources – result of industrialization and economic development
  - Changing sources of energy – from biomass to fossil fuels to alternative sources
  - Innovation technology – coping with the environment
  - Comparative advantage – doing what you can do best
  - Choice – specialize and trade or be self-sufficient

Geographers look at economic development at all levels from local to international to access quality of life within an area (HDI = Human Development Index).

There are 3 spatial aspects of HDI analysis:
1. Productivity.
2. Relationship to the land.
3. Use of resources.
(Plus numerous cultural ones)

7 Principles of Location Theory and Economic Landscapes

1. Distance (how near or far)
2. Accessibility (how easy it is to get to)
3. Spatial interaction and movement (complementary assistance and support)
4. Diffusion (spread)
5. Transportation system and networks (connectivity)
6. Comparative advantage (best suited)
7. Agglomeration (clustering)

Principles of Location Theory and Economic Landscapes

1. Distance: How near or far? There are linear, time and perceptual (mental) distances to deal with.

2. Accessibility: Ease to get to. Close by but difficult to reach? Cost per mile?

White on the map indicates areas within 20 miles of a major transportation route.
3. Spatial interaction and movement (complementarity):
- Production vs. Need.
- Mutual help.
- Where made/where used is the basis of all trade.

4. Diffusion = Spread: Movement away from point of origin and eventually to a new site.

5. Transportation Systems and Networks: Connectivity
- Transportation system is composed of nodes and linkages:
  - Points (locations) are nodes
  - Routes are linkages
- Network: A system with more than one route to get from point A to point B.
- The goal is to coordinate the movement of people, goods and vehicles in order to efficiently utilize routes and to reduce costs and improve delivery times.
- The pattern of movement facilitates interaction (#3) and diffusion (#4).

FedEx’s Hub and Spoke Network
FedEx started out using just Memphis, TN as its hub. Now Memphis handles just over 50% of all packages, with 15 other air hubs around the US and Canada. There are 37 ground hubs serving regional deliveries and over 550 local pick up points all to ensure next day or 2nd day service.

Areas tend to specialize in the production of items for which they have the greatest relative advantage over other areas and then trade for the rest.
7. Agglomeration = clustering: Concentration for mutual benefit.

Roosevelt Field Shopping Mall, Nassau Co., NY

**Geography of Economic Activity**

**LOCATION**

**GOAL!** To find a location for the chosen activity involving minimum cost and resulting in maximum profits.

**HOW?** Spatial analysis. Spatial decision-making processes.

**FINAL CHOICE** = Best location at the least cost for maximum profit from what's available within a geographic area.

**Geographical Spatial Analysis**

- **Start with EXISTING CONDITIONS**
  1. Location
     - a. Site
     - b. Situation
     - c. Focal points (nodes)
     - d. Hierarchy (levels of activity)
  2. Transportation Factors
     - a. Linkages (connects the nodes)
     - b. Time-Distance

- **3. Spatial Patterns are analyzed**
  - a. Where (distribution)
  - b. Why (land use)
  - c. Relationships (patterns of interaction)

- **4. Economic Factors are considered**
  - a. Supply and Demand
  - b. Environmental Issues
  - c. Resources
  - d. Political issues

**Time-Distance**

Time-distance variables must be included in any analysis of spatial interaction especially with regard to manufacturing and providing services (the secondary and tertiary economic sectors).

There are seven time-distance variables that need to be taken into consideration.
Tracking a Person’s Whereabouts with Cell Phone Apps: Time and Distance

This map was created using cell phone location data (embedded GPS) over a 4 month period: 8,600 location hits or an average one hit every 21 min. Shows that most of the time the person stayed local, did home-to-work round trips, and went once to Newark Airport. Data includes date, time of day, duration of stay and frequency of visit to the pinned site.

TIME-DISTANCE VARIABLES

2. Spatial interaction by hierarchy of need.
People will travel further for specialized goods and services.

TIME-DISTANCE VARIABLES

3. Spatial interaction as a cost factor.
Where is it more profitable to locate?
What is the cost of raw materials, transportation, land, labor and taxes?

TIME-DISTANCE VARIABLES

4. Spatial interaction as an orientation factor.
Market orientation or raw material orientation?
Bulky? Difficult to move?
Weight gain?
Weight loss?
Perishable before processing?
Perishable after processing?

TIME-DISTANCE VARIABLES

5. Spatial interaction as a margin of profitability.

Profits decrease with distance.
Spatial Margin of Profit varies with industry.

TIME-DISTANCE VARIABLES

6a. Spatial patterns of land use and land value.
The greater the distance from market, the less expensive is the cost/rent of land.
6b. Spatial patterns of land use, land value with transportation. Road and rail connections increase the distance without increasing time spent traveling.

6c. Spatial patterns of transportation routes: Routing - Which way to go? Shortest route vs. Fastest route. BUT also need to consider cost.

Three Variables: Speed vs. distance vs. cost.
1. Type of conveyance: road, rail, water, air
2. Direction of movement: one way streets; going with or against traffic
3. Topography: curved roads, slope, uphill/downhill

7. Spatial interaction to make deliveries in a timely manner: Just-in-Time delivery systems. Response to on-site storage demands, when space is costly and cash flow is tight.

**Just-in-Time Delivery Systems**
- To guarantee delivery, just-in-time delivery systems:
  - Require the strategic placement of facilities in relation to a transportation network and the points of need.
  - Rely on very dependable transportation systems to assure same-day, next-day and multi-day service.
  - Also applies to military deployment, disaster relief and other emergency response scenarios.

**Pros and Cons of on-site storage.**
- On-site storage
  1. Allows for bulk buying.
  2. Reduces transportation costs by receiving larger loads.
  3. Provides assurance materials are on hand when needed.
- Just in time delivery systems
  1. Saves money on space rental/purchase.
  2. Reduces activity’s footprint.
  3. Allows for material’s arrival timed to need.
  4. Reduces possible damage, vandalism, theft of stored items.

**NEXT**
GEOGRAPHY of URBANIZATION: People, cities and patterns within cities.