GEOG 260

14 – Final Exam Review

Teacher: Donny Seto

Today's Agenda

1. Final Exam Setup and Requirements
2. Material Covered

Final Exam 25%

Allowed Material:

Pencil & Non Programmable Calculator

Coverage:

Lecture, Videos, Readings and Labs for week 1-13

Format:

- Multiple choice
  - 80 questions
  - Only one right answer per question

1-What is a Map

What is the oldest map of the world?

Why is the painting of the pipe, called the **The Treachery of Images, 1929 by Rene Magritte** important to mapping?

What are the different map types?

What is the definition of a map?

Is the cartographic process linear?

2- Making Maps and its Uses

What do we need to pay attention to make a good map?

Why are projections important?

Right Map Making?

When do we not need a map?

What changes do we make for novice map readers?

What is the main differences in map making for paper vs digital mediums?

When a room is bright what color background should you use to present our maps?

3- Mappable Data

- The level of abstraction of data representation are based on what criteria?
- What are different types of Isoline maps?
- What is an Isoline map?
- Lab 2 and 3 – Reading & Drawing contour maps and Interpreting Elevation
- Understand difference between primary, secondary and tertiary data and know examples of each.
- Quantitate and Qualitative data and appropriate symbolization
- Typical data transformations
- Dimensions of data: Time, Accuracy, Standards Copyright or Copyleft

4-Map making tools

- Mapping without computers
  - Why do we still map the world without computers?
- Mapping to solve problems
  - Who was Jon Snow, what did he do to convince the parish guardian that the water supply was the vector for the Cholera outbreak?
- Examples of Web-based Map
  - What type of line does Scribble maps from the airplane icon?
- Where can we access static maps about Montreal?
- Why did the World bank put their data on the Spatial Agent app?
- What is a freeware version of ArcGIS?
- What is a disadvantage of freeware data?

5-1 Projections

- Why do we need projections?
- What are projected surfaces?
- What is the difference between tangent and secant projections?
- Why are projected surfaces distorted?
- Tissot ellipses, circles or Indicator are used how to show us distortions?
- What does Conformal, Equivalent and Equidistant projections preserve? Know popular examples of each type.
- On a Plate Carrée projections which latitudes and longitudes share the same scale?
- What projection try to preserve everything? Is this possible?

5-2 Datum & Earth's Shape

- If given, the equidistant map with 30deg latitude and longitude distances, you should be able to calculate the following:
  - Circumference for each given Latitude or Longitude
  - Calculate object along those latitude or longitude bands
- What is a F ratio?
- Why is earth represented by a Ellipsoid?
- What does the WGS84 projection system uses what shape to represent the surface of the earth?
- What is a datum shift?
- Why does so many projections exist?
- What does the letters on the UTM zones represent?
- How many UTM number zones are there?

Lab 5-6

- Know Tissot's circles and how they are shown in the projection discussed in the lab.
- What are the advantages and disadvantage of the Mercator Projection and the Globe?
- What is the popular misconception of Mercator projections?
- What are the main advantages and disadvantages of each projection
- What are Rhumb Lines and Great circles
- Know UTM zones and the three different referencing systems
  - UTM Zone Reference
  - UTM MGRS and accuracy
  - UTM Civilian Reference
- How does a UTM zone relate to an orange peel?
- How many UTM zones are there?

6- Big Picture of Map Design

- Know Layout and Data Representation Big Picture Issues

- Layout when and when not to include layout items
  - I.e. North arrow, scale, Legend, etc…
  - Path, Visual Center, Balance, Symmetry and Asymmetry and grids, Slight line

- If you are the map maker, are there any hard rules? Standards and choices: Yes
- But hard rules, not really.
- Hence you need to become well versed in the many ways to visualize data, so as to be able to make those tough judgment calls to achieve graphical excellence

AFTER MIDTERM MATERIAL

7- Inner working of Map Design

- What is a Figure Ground?
- How does different whys of visual difference help make a stronger Figure Ground relationship?

8- Generalization and Classification

- Larger-Scale Maps vs Smaller-Scale Maps show what type differences in terms of area, detail, generalization and classification.
- Know the difference and symbolization for Total Number, Averages, Density and Rates
- Know the definition and calculation for each Quantitative classification scheme
- What is the criteria for using a classification scheme?

9-Map Symbolization

- What are the two parts of Map symbols?

Attribution of Symbol:

- Relationship
- Convention
- Difference
- Standardization

- What makes maps unconventional?
- Terrain Symbols use what type of symbolization attributes
- What are the two main ways to map terrain?
- What is the difference between hachures and contours?

10-Map Symbol Abstraction

- What types of Qualitative and Quantitative Data may be represented with symbols and how?
- Shape, Size, Value, Hue, Intensity and Texture of symbols best shows what type of data?
- Mapping types with symbols
  - Choropleth
  - Graduate Symbols
  - Dot Map
  - Surface Map
- Know the different ways to appropriately maps data using these above maps

11 -Words

- Why are words on a map important?
- What are the different components of word Anatomy and their visual impacts?
- What are the different types of font from a historical perspective
- What is the main difference and usage between a serif and sans serif font?
- How should fonts be mixed or chosen?
- What does type size and weight change for fonts as a symbol?
- Labeling positions preference order
- Labeling point and line standards

What are the meaning of the following type attributes: Kerning, Letter spacing(tracking), Line spacing, Alignment?

12 - Colour

- Graphical Excellence with Colour
- The Three dimension of Colour are?
- Light and Medium affects on Colour
- What is Colour Interaction?
- What is a Munsell Colour Chart?
- What is the difference between Subtractive and Additive colors? Think White.
- Colours: Photocopy and Colourblind friendly
- Analogous, Complementary, Triadic, Tetradic colour schemes
- Color Connotations: Symbolic, Cultural & Personal

Labs 7-12

Mapping Elements and Design

- What are criteria for good representation and poor representation?

Quantitative and Qualitative Mapping

- Calculate Equal Interval and Quantile ranges
- Read and Analyze Dot density and Graduate symbols map
- What is the difference between true and apparent magnitude scaling?
- What are stereoscopes and why do we use them?
- What are our mapping options to represent Qualitative data?

Colour Theory

- Develop color schemes for Binary, Qualitative and Quantitative Representations
- Photocopy Safe and Colour Blind Safe Schemes

QUIZ REVIEW

Quiz 1

1. **Which of the following statements are false about maps on paper medium?**

   a) Map size should match final paper size, with appropriate margins
   b) Point and line symbols can be smaller and finer on a printed map
   c) Dark colors are more intense than light; use light colors to designate less important information and background, and dark to designate more important information
   d) Printing a color map in black and white is acceptable

2. **If your map is intend for experts, which of the following statements below is true:**

   a) More peripheral information on map explaining content and symbols
   b) Less information, fewer variables of information, less detail
   c) Follow map design conventions, which enhance comprehension of the map
   d) More information, more variables of information, more detail

3. **As Posters are often shown in bright room, what color background is most appropriate?**

   a) Black
   b) Grey
   c) White
   d) Yellow

4. **Which of the following statements are true**

   a) Scale and Extent are not related
   b) Scale and Extent are directly related
   c) Scale and Extent are opposingly related
   d) Scale and Extent are only slightly related

5. **Why was Larry Wickstrom was fired as chief of the Ohio Geological Survey in 2012?**

   a) for inaccurate mapping of the environment
   b) not sharing the revised map with his superiors or having it reviewed by peers
   c) For bad color schemes on his maps
   d) For insensitive word choice on the map

Quiz 2

1. **Which of the following below is an example of vector data?**
   a. Satellite Imagery
   b. Aerial Photos
   c. Digital Census Boundaries
   d. Jpegs Files

2. **Which of the following below best represents Qualitative data?**
   a. Suggest Protected Areas
   b. % Population Change
   c. Land Value
   d. Traffic Intensity

3. **What is Metadata?**
   a. Primary Data
   b. Secondary Data
   c. Tertiary Data
   d. Data about Data

4. **The number of some phenomenon per unit time is the definition for?**
   a. Total Numbers
   b. Averages
   c. Densities
   d. Rates

5. **What is false about copyright?**
   a. Works created since 1978 are automatically copyrighted
   b. You cannot make a map based on the data from a copyrighted map
   c. Maps, globes, and charts' representation of data are covered under U.S. copyright law
   d. Intension is to reasonably compensate creators for their efforts

Quiz 3

1. **The Voyager map design was based on which big picture approach(s)?**
   a) The medium is the message
   b) The data are the message
   c) None of the above
   d) Both

2. **Which below is the FALSE statement.**
   a) Map legends vary greatly but should include any map symbol you think may not be familiar to your audience
   b) Don't insult your map's readers by including obvious symbols in the legend
   c) You need to always have the word "legend" to preface one
   d) The legend is key to interpreting the map

3. ***The more distorted the Tissot's ellipses….***
   a) the more exaggerated the area of the land masses are
   b) the more distorted the shapes of the land masses are
   c) the more distorted the north-south distance are
   d) the more it reduces overall distortion while preserves neither area nor shape

4. **Which of the following is FALSE about projections?**
   a) One ellipsoid can be used to create multiple projections.
   b) Co-ordinates from one datum cannot be used on another without modification.
   c) It is used to depict a huge 3D object on a small flat plane
   d) Map projections can show the earth without any distortion

5. **Which of the following statement is TRUE about cross sections:**
   a) Vertical exaggeration is equal the vertical scale divided by the horizontal scale
   b) Vertical exaggeration is equal the horizontal scale over vertical scale
   c) Vertical exaggeration is not required on a cross section view
   d) Vertical exaggeration is only needed on very steep topography

Quiz #4

1. **The Continents and Islands of Mankind shows what?**
   a. Only the affluent population
   b. Densely populated places
   c. Spread of Colonialism
   d. Dimensional Changes
2. **A successful figure-ground strategy on a map**
   a. reveals what's most important first
   b. shows less important elements more effectively
   c. Indistinct form and shape
   d. Similar objects
3. **Larger-Scale Maps show**
   a. More area
   b. More detail
   c. More generalization
   d. More classification
4. **Visual depth is enhanced when the ground appears to continue behind the figure. This describes which concept below:**
   a. Proximity
   b. Familiarity
   c. Detail
   d. Layering
5. **Which object below produces a better figure ground?**
   a. Weak Edges
   b. Open Object
   c. Complementary Colors
   d. Objects Close Together

Quiz #5

1. **X-height is the …**
   a. font size
   b. height of the most compact letters
   c. extra height rise above the main body of the font
   d. The size increase by point size increase

2. **Humanistic or Old style fonts are …**
   a. Styled to look like calligraphy
   b. Has minor contrast of line weight
   c. Has strong thick and thin contrast
   d. Abstract font style

3. **The preferred location for labeling a feature is**
   a. Bottom Right
   b. Bottom Left
   c. Top Right
   d. Top Left

4. **When moving from a print to computer screen, you need to _____ the font size**
   a. increase
   b. decrease
   c. maintain
   d. colour

5. **Kerning refers to**
   a. Space between letters of each word
   b. The space between particular pairs of letters to make them look better
   c. The finishing strokes added the end of letters
   d. Collection of variations of typeface

Quiz #6

1. **The three dimensions of colour are the following:**
   a. Hue, Value and Intensity
   b. Intensity, Chroma and Saturation
   c. Blue, indigo and violet
   d. Yellow, Red and Blue

2. **Colors look _____ on computer screens compared to on paper**
   a. Brighter and more saturated
   b. Darker and less saturated
   c. No difference
   d. Slightly red

3. **In high-intensity lighting, use**
   a. more intense, saturated colors
   b. less saturated colors
   c. Increase intensity
   d. Use blue tones

4. **_____ is the appearance of any color on a map depends on surrounding colors**
   a. Color Interactions
   b. Perceptual Differences
   c. Map Surface
   d. Color Dimensions

5. **Which is true about muted colours in graphical excellence**
   a. for less important or background data
   b. to distinguish and differentiate features on your map.
   c. for important data in small areas
   d. to engage your map's viewers.