

# NREM 250: Preparatory Exercise

## Prerequisite: GIS experience

In this course, it is presumed that you have used ArcGIS software before and can do the following tasks (excerpt from textbook, p. xix):

1. Navigate and find data on local drives, on network drives, and on CDs and DVDs
2. Name files and save them in a known location
3. Use ArcCatalog to connect to a folder
4. Use ArcCatalog to preview a data layer and look at its metadata
5. Add data by dragging layers from ArcCatalog or using the Add Data button
6. Rearrange layers in the table of contents
7. Identify the table of contents and the map window in ArcMap and know the purpose of each
8. Use the following tools:
  - Identify
  - Zoom in
  - Zoom out
  - Full extent
  - Pan
  - Find
  - Measure
9. Symbolize a layer by category or quantity
10. Open the attribute table for a data layer
11. Select features by attribute
12. Make a basic layout with map elements
13. Label features
14. Select features on a map and clear a selection
15. Work with tables
16. Use the drawing tools to place a graphic on the map.

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Meeting the prerequisite is more or less equivalent to having completed and fully understood Chapters 1 – 9 of *Getting to Know ArcGIS Desktop* 2<sup>nd</sup> edition (GTKArcGIS below). If you feel it is needed, please refer to the appropriate chapters of GTKArcGIS.

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## Preparatory Exercise

1. This exercise is designed to prepare you for the class. A separate answer sheet is available in the same folder as this file. Please type in, insert, or copy & paste your answers for questions in this exercise on the answer sheet. Upload the completed answer sheet using the Assignments tool in Lualima when finished.
2. This is a training exercise (not an exam). If you are not sure what to do for any of the tasks, please refer to GTKArcGIS. I do not expect you to ask me or other students about these fundamental procedures during the semester.
3. I will check your answers (not to grade) when uploaded. If I find any significant shortcomings in your answers, I will ask you to review necessary ArcGIS procedures.

## Examine the data

1. Open ArcCatalog and, if necessary, connect to the folder **NREM\_250\_Data** (Tasks 1 & 3; GTKArcGIS, pp. 19 – 21, 51).
2. Expand the folder in the Catalog tree and double-click the NREM\_250 geodatabase. The geodatabase holds many feature classes and images.
3. Click the Preview tab, then preview the feature class **Coast\_Oahu** (Task 4; GTKArcGIS, pp. 55 – 59).

**Q1.** What is the geographical extent of this feature class? Compare it with that of the feature class **coast\_n83** in the same geodatabase.

4. Using ArcCatalog, investigate the metadata of the feature class (Note: the metadata for this feature class is not complete). What is the spatial horizontal coordinate system of this feature class? (*ibid*)

**Q2.** Name (a) projected coordinate system and (b) geographic coordinate system.

## Map the data

1. Open ArcMap. Open **NREM\_250.mxd**. The layer **Coast\_Oahu** should be displayed. If no map but a red check mark appears in the Table of Contents, double click (or keep clicking) the grayed box of the layer, navigate to the folder **NREM\_250\_Data** geodatabase, and click **Coast\_Oahu**.
2. Rename and save the map document as *Your\_Name\_NREM\_250* (or whatever name you like) into the drive for which you have authority to perform read & write. If you are using a WCC school computer, this means that you save the file on the F:\ drive (Task 2).

3. From the NREM\_250\_Data geodatabase, add Zip\_Oahu, Major\_Roads\_Oahu, Other\_Roads\_Oahu, Public\_Schools\_Oahu and Imiloa. Arrange Zip\_Oahu above Coast\_Oahu. Also arrange Major\_Roads\_Oahu above Other\_Roads\_Oahu. The Imiloa layer should be at the top in the **Table of Contents** (Tasks 5 – 7; GTKArcGIS, pp. 78 – 83).

**Q3.** Press the [Prnt Scrn] key, and paste the image in the answer sheet.

4. Change the symbol color of the **Imiloa** layer to red. **Zoom in** to the Imiloa layer (Task 8).

**Q4.** Press the [Prnt Scrn] key, and paste the image in the answer sheet.

5. Go back to the **Full extent**. **Find** Kaimiloa Elementary. **Identify** its school code (Note: Use the tools in bold typeface) (*ibid*)

**Q5.** What is the school code (SCHOO\_COD) of Kaimiloa Elementary?

6. Measure the distance between Kaimiloa Elementary and Imiloa (WCC) (*ibid*).

**Q6.** How many miles is it? How many yards?

## Analyze the data

1. Symbolize the Zip\_Oahu layer by the **Unique values** and the Major\_Roads\_Oahu layer by the **Graduated symbols** using the field MINOR1 (Task 9; GTKArcGIS Ch. 5 & 6).

**Q7.** Press [Prnt Scrn] key, and paste the image in the answer sheet.

2. **Highlight** (select) all the high schools (Hint: [HIGH] = 1) in the **Public\_Schools\_Oahu** layer (Task 11).

3. Open the Attribute Table of the Public\_Schools\_Oahu layer (Tasks 10 & 15).

**Q8.** Press the [Prnt Scrn] key, and paste the image in the answer sheet.

**Q9:** How many schools were selected? Out of how many?

4. Clear the selection (Task 14).

5. **Definition Query** high schools (that is, only schools with a high school (i.e. [HIGH] = 1) are shown on the map. **Label** them (Tasks 11 & 13).

**Q10.** Press the [Prnt Scrn] key, and paste the image in the answer sheet.

6. Draw a big purple square (5,000 meters wide) where you live (or, if you do not live on O‘ahu, put it at Diamond Head) (Task 16).

**Q11.** Press the [Prnt Scrn] key, and paste the image in the answer sheet.

## Presentation of the data

1. Switch to **Layout** View.
2. Put (a) an appropriate title, (b) a legend for zip code areas, (c) a north arrow, (d) a scale bar, and (e) other elements that you think appropriate in your layout view (Task 12).
3. Export your map as an \*.emf file (\*: name of your choice).

**Q12.** Insert (not copy & paste from ArcMap) the \*.emf file in the answer sheet.

4. Upload your completed answer sheet using the Assignments tool in Laulima.

**Pau!**