GEOGRAPHIC

INFORMATION

SYSTEMS

Lab 02
Make Your First Map and Layout

GIST 3300
GIST 5300

Lab 02 – Make Your First Map and Layout

✦ Purpose

▸ In this lab you will become more familiar with ArcGIS Pro and:

- Make a Texas Percent Hispanic Population map and learn about normalizing data. (Assignment 02)
- Complete an Interactive Reading Assignment to learn ArcGIS Pro Terminology
- View Web Links – Esri GIS and GIS Job Skills in Demand
- There is a bonus lab assignment to help you further develop your skills with ArcGIS Pro (Lab 02 Bonus Assignment 5 points).

> ℹ This lab includes:
>
> - Assignment 02: Practice working with ArcGIS Pro and make a Texas Percent Hispanic Population Map by County
>   - Part 1: Get Started
>   - Part 2: Texas Total Hispanic Population Map
>   - Part 3: Percent Hispanic Population Map (normalization) and Layout
>
> - Web Links – Esri GIS, and GIS Job Skills in Demand
> - Interactive Reading: ArcGIS Pro Terminology
> - Lab 02 Bonus Assignment: US Percent Black Population Map

> ⚠ **ArcGIS Software Required for Assignment**
> If you have an issue with access to ArcGIS Pro notify your instructor immediately.

📄 Assignment 02: Make Your First Map

✦ Purpose

The purpose of this assignment is to 1) create a map of the Total Hispanic population in Texas by county and 2) create a map of the Percent Hispanic Population map by normalizing data. In this assignment you will learn to:

- Start ArcGIS Pro (AGP)
- Connect to a folder
- Add Data to a Map
- Symbolize data to display Total Hispanic Population by County
- Use normalization to display Percent Hispanic Population by County
- Create and save a map
- Export your maps to a JPG and upload your assignment to Blackboard

📄 **Instructor Demonstration**

Before starting this lab, your instructor will introduce you to the ArcGIS Pro interface and some important GIS functionality.

> ℹ️ ▸ Instructions you need to perform are preceded with bullets or arrows.

⊕ Part 1: Getting Started

Step 1: Set up Folder Structure on your Personal Drive

A personal drive (e.g. USB flash drive) is required for this lab. Your instructor will demonstrate how to create the lab folder structure on your personal drive using Windows File Explorer. If you do not have a personal drive you can set up a cloud drive. If you do not know how to set up a cloud drive, please ask your TA, or skip to Step 2. You can complete this step as soon as you have a personal drive.

▸ If you don't already have one, *create* a master class folder on your personal drive.

- *Open* Windows File Explorer.
- *Browse* to your personal drive.
- *Create* a class folder named **Intro to GIS** (or similar) in your desired location.
- *Expand* the **Intro to GIS** folder.
- *Create* a subfolder named **Lab 02 Maps**
- *Create another subfolder named* **Lab 02 Make your First Map**.

ⓘ It is important to begin each lab with an organized folder structure on your personal drive. Below is an example of an organized GIS folder structure.
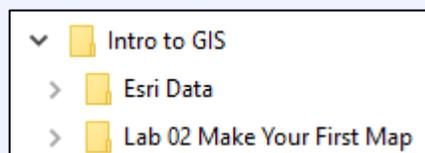
Most of the time you will work with files on your personal drive and not on your workstation (unless specified). Do not leave any of your files on the workstation where they can be accessed by other students.

ℹ️ In the **Intro to GIS** class folder you will create a folder for each weekly lab assignment. Each lab folder will store your maps, projects, data, and assignments to submit.

▸ Copy data to your personal drive:

- If you are working on a campus computer, *expand* the **C:** drive and *look* for the **ESRI_Data** folder.

ℹ️ If you do not see a **C:\\Esri_Data folder**, then look for it on the **D:** drive.

- *Copy* the **ESRI_Data** folder from the **C:** drive and *paste* it in the **Intro to GIS** folder on your personal or cloud drive.
- *Be patient* while the folder copies about 700MB of GIS data
- *Minimize* Windows File Explorer.

Step 2: Start ArcGIS Pro

🧭 **Ways to Start ArcGIS Pro**

There are several ways to start ArcGIS Pro:

- In Windows 10 *click* Start > *scroll* to the letter A > e*xpand* the ArcGIS folder > *click* to ArcGIS Pro to launch the application.
- **Or** in the Search area *type* ArcGIS Pro > *click* the ArcGIS Pro program icon.
- **Or** *double-click* the ArcGIS Pro icon on the desktop if present.
- **Or** *single-click* the ArcGIS Pro tray icon at the bottom of the screen if present.

▸ *Start* ArcGIS Pro (AGP) using your desired method.

▸ In the Sign in with page, *click* the Your ArcGIS organization's URL option.

▸ **Do not** enter your credentials in the top ArcGIS login area.

- ▸ *Type* **texastech** (capitalization does not matter) next to .maps.arcgis.com.

- ▸ *Click* Continue.

- ▸ *Click* the Texas Tech University blue button.

▸ *Enter* your Texas Tech University email or eraider and TTU password.
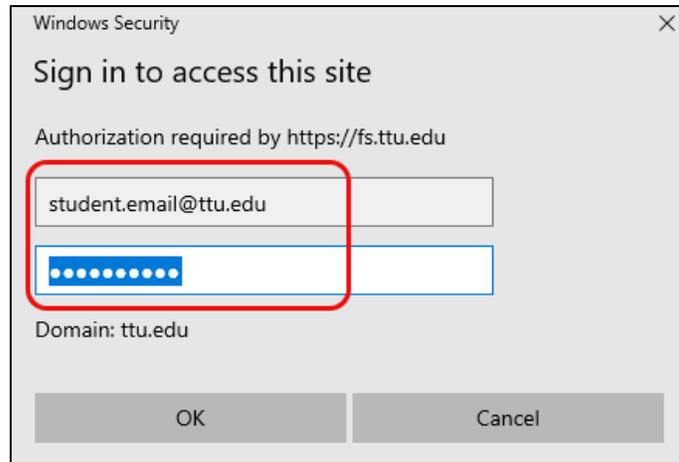
▸ In the AGP Start Up window, *click* Start without a template.
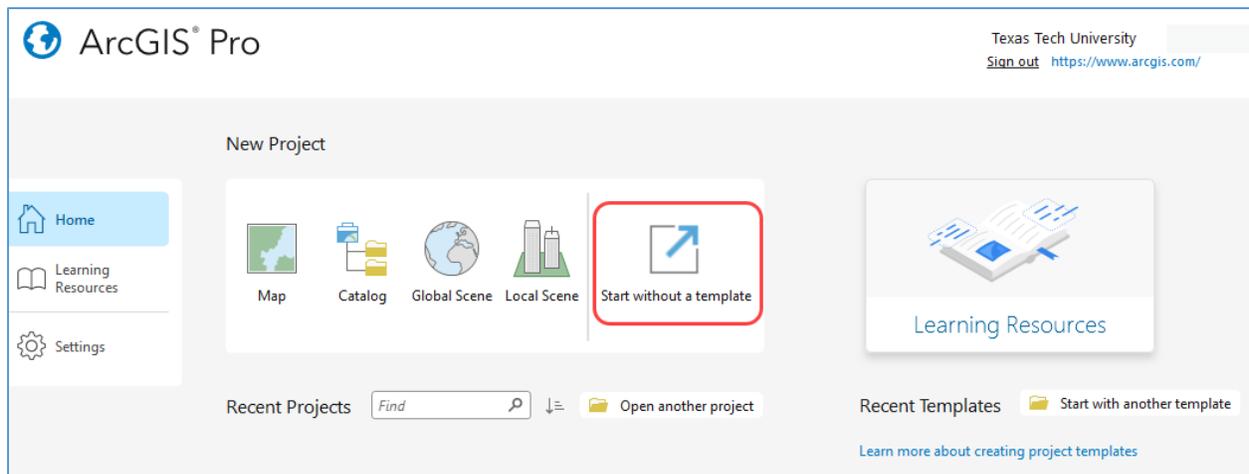
ⓘ When you start without a template, ArcGIS Pro opens with a blank Contents pane. On the ribbon, the Insert tab is active with tools and buttons ready to bring in content. Additionally, a temporary AGP project folder is created in your user profile.

Step 3: Create a New Map

When you start ArcGIS Pro with a new map, a topographic displays. The basemap is accessed from the Internet and forms a nice backdrop for your maps. In this step you will examine various parts of the AGP interface and practice navigating in AGP.
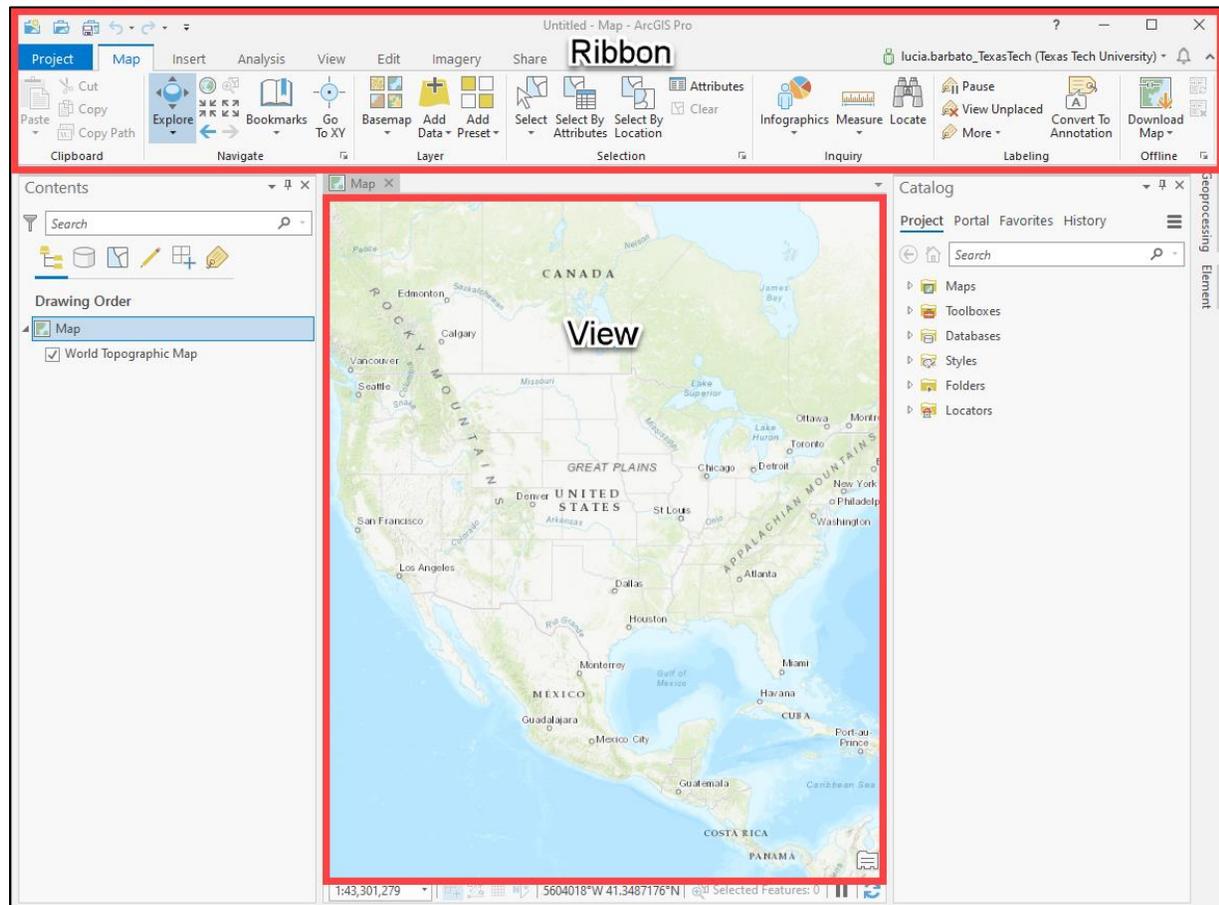
‣ On the Insert Tab, *click* the New Map button. A topographic basemap displays centered on North America.

‣ On the ribbon, *click* the Map tab. The Explore button is activated by default.

‣ *Examine* the AGP interface. At the top is the ribbon. The ribbon includes tools, buttons, and functions organized into groups to manage, edit, and view data, as well as support other operations. The middle of the interface displays a view of the map. The interface displays a Contents pane on the left and a Catalog pane on the right.

▸ *Notice t*he AGP interface contains various tabs, groups, tools and buttons. The interface displays a Contents pane on the left and a Catalog pane on the right.
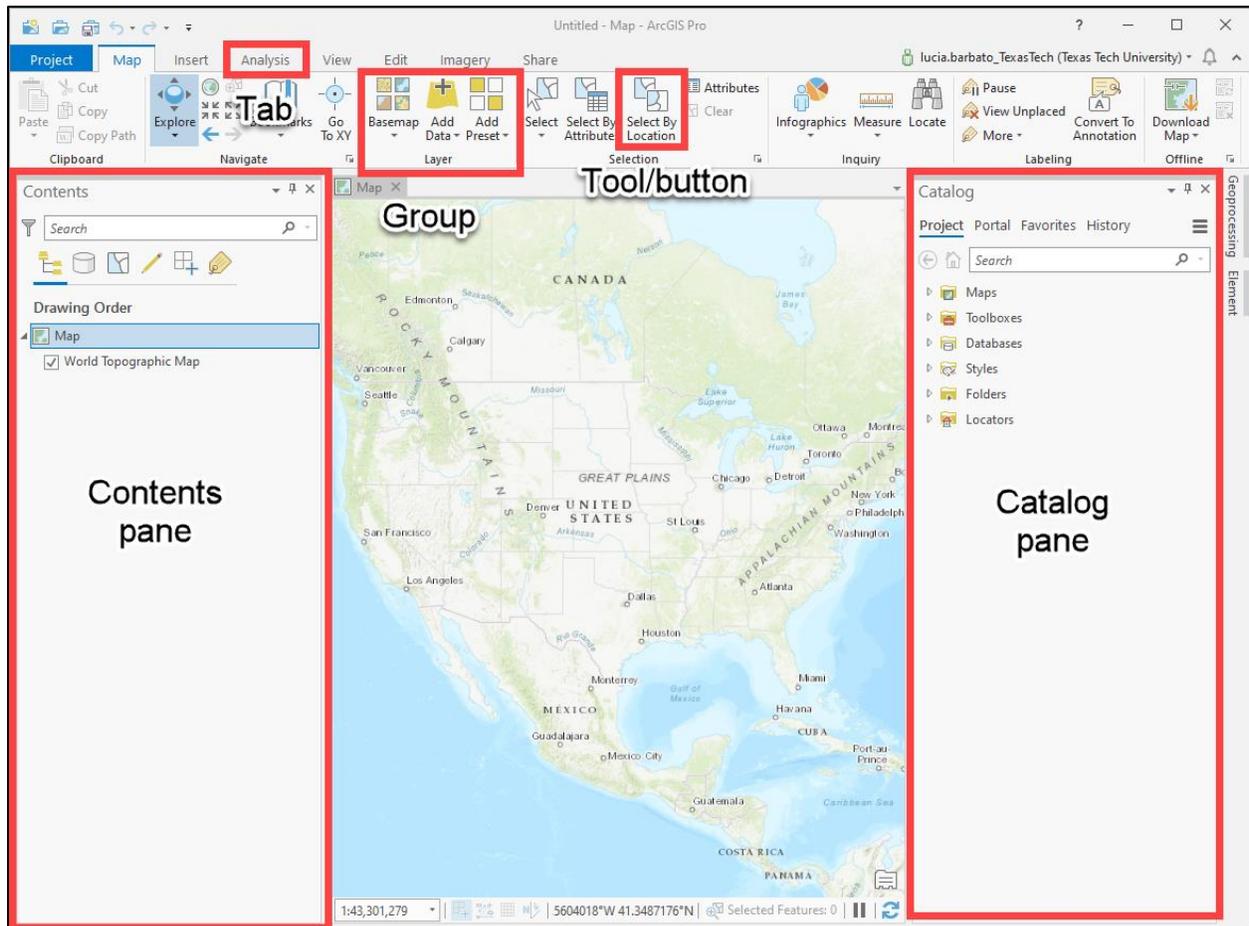
Step 4: Practice Navigating the Map

In the Map tab, the Explore tool in combination with your mouse, is used to navigate maps in AGP.

▸ *Verify* the Map tab is active, then *verify* the Explore tool is active.

▸ *Hover* and hold the cursor over the Explore tool until the tool information popup displays.
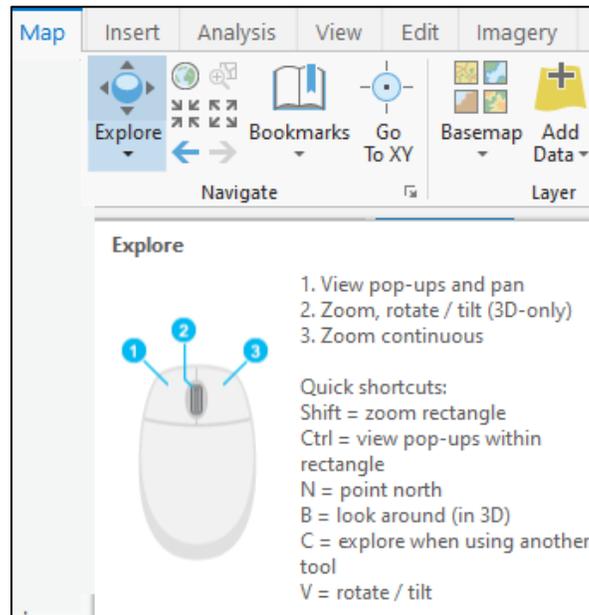
▸ *Test* the different ways to use the Explore tool.

- Place the cursor over the map, and *roll* the mouse wheel forward and backward. This zooms the map in and out from the position of the cursor.
- *Click* and hold down the left mouse button, then *drag* to pan the map around the screen.
- *Click* and hold down the right mouse button, then *move* the cursor up and down to zoom out and in.

Step 5: Move, Dock, Pin and Unpin Panes

ArcGIS Pro dockable panes can be moved and docked to different locations. Panes can also be collapsed to reduce clutter and allow more space for a map.

> ### ⊘ Moving and Docking Panes
>
> To move a dockable window to a new location, drag its title bar. When you do this, yellow rectangles display representing locations where the window can be docked.
>
> - You can drop the window onto the target of your choice.
> - You can pause the pane over a target to get a preview of where the window will dock.
> - If you want the window to float over the display instead of being docked, move the pane anywhere in the window except over a yellow target.

▸ *Unpin* the Catalog pane, by clicking the pushpin button 📌. The pane collapses to a tab on the right side of the window.

▸ *Click* the Catalog tab to display it. *Notice* the pushpin is in the horizontal position ⊟. When the pushpin is in the horizontal position, the pane will automatically collapse back to the tab when the cursor is moved off the pane.

▸ *Click* the pushpin so that it is in the vertical position to dock the pane.

Dockable panes can be moved to a new location only when the pin is in the vertical position 📌 . Practice moving and docking panes.

▸ *Drag* the Catalog pane to the center of the view area. With the cursor held down, hover the pane over each of the four yellow targets to see a preview of where the window would be located if you dropped it on that target.

▸ *Drop* the Catalog pane on the top center target. The Catalog pane becomes docked on the top of the view area.

▸ *Drag* the Catalog pane to the target located at the bottom of the window. With the cursor held down, hover the pane over each of the four yellow outer targets to see a preview of where the window would be located if you dropped it on that target.

▸ *Drop* the Catalog pane on the bottom outer target. The Catalog pane becomes docked across the entire window.

▸ *Drag* and *drop* the Catalog pane to its original position on the right side of the window.

▸ If necessary, resize the pane to a reasonable width.

> ⊘ **Managing and Stacking Panes**
>
> When multiple panes are accessed, they stacked on top of each other and appear as tabs at the bottom of the pane.
>
> To view the contents of a tab, click to activate it and it becomes the active pane.
>
> To view more than one pane at a time, drag the tab to a rectangle target and dock it in the desired location.

Step 6: Connect to a Folder

For this project, you will access the GIS data you copied to your personal drive. To accomplish this, you must connect to the folder on your personal drive that contains the **Esri_Data**.

> ⊘ **Connecting to Folders in ArcGIS Pro**
>
> You must have a folder connection in AGP to access GIS data. Folder connections can be made to a personal drive, a computer drive, or a network drive. A folder connection simplifies data access by showing the contents of the folder you choose. ArcGIS Pro can connect to any visible connection in the Windows File Explorer.

▸ In the Catalog pane, *right-click* Folders and *choose* Add Folder Connection.
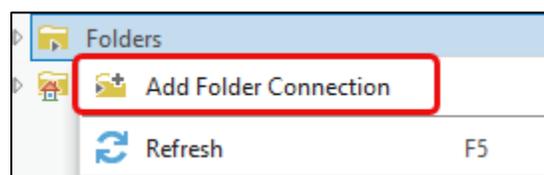
▸ In the Add Folder Connection window, *browse* to your personal drive.

▸ *Expand* your **Intro to GIS** folder, then *select* the **..\ESRI_Data** folder. The Texas and USA folders display on the right side of the window.