

Modified Year-End Lab Assignment – WINTER 2020

Introduction

There are three parts to this year-end assignment. This takes the place of your Labs 8 & 9, and the Lab Test #2 (aka Lab Final). Each of the three parts is a condensed assignment, intended to cover & review some of the remaining lab topics that we weren't able to work on in our lab periods, and each part is independent of the other two so you can work on them in any order.

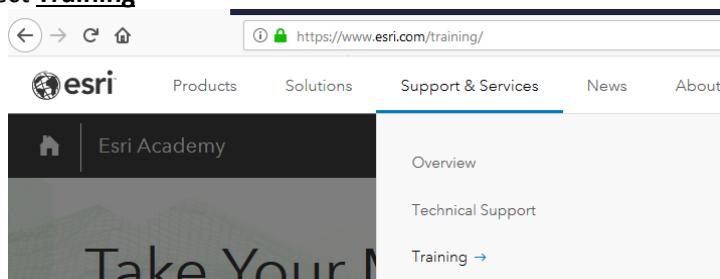
Please follow the “General Instructions” first to locate the on-line training materials that you will need and for instructions on submitting your lab assignment.

On the very last page of this document, I have included a link to ArcGIS Desktop Help reference materials and other on-line resources, in case you need them.

General Instructions (for Getting Started)

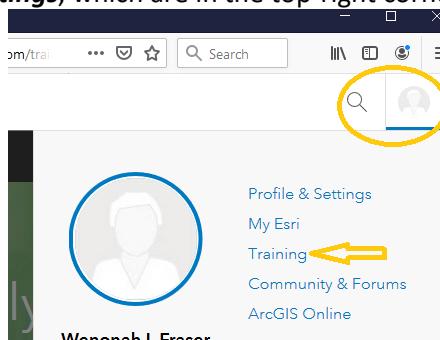
You will need to use your ESRI ArcGIS Account login to locate the training materials we will be using.

1. Using a web browser, navigate to the ESRI Training web-site (<https://my.esri.com/>)
 - a. Sign in with your ArcGIS login.
 - b. Browse to the **ESRI Training** page. (www.esri.com/training) *How?* Either of these two ways.
- i. Under the **Support & Services** tab along the top of the window, use the drop-down menu to select **Training**



OR...

- ii. Alternatively (once you have logged in), you can get to **Training** under your **ArcGIS Account Settings**, which are in the top-right corner of the window. (Shown in yellow here)



Either of these approaches should take you to www.esri.com/training

- c. Browse to the **Catalog** → **Course Catalog** <https://www.esri.com/training/catalog/search/>

2. Use the **Course Catalog SEARCH** page to find the courses that you will use in each part of this assignment and to will add them to your “Learning Activity”. There are three, one for each part.

Once you’ve entered your search text (suggested below), scroll down to see the list of results. The item you want should be among the first results. To make your selection, click on the **title** of that desired item (**blue text**) then launch your selected video/course/seminar from the page that opens.

NOTE - If any of these courses appears “locked” when you search for them, please **make sure that you have signed on with your ArcGIS login**. Any courses that are marked with “requires maintenance” are available only if a person’s ArcGIS account has been granted that permission. When you are logged on, they will become “unlocked.”

When you find and launch the *first* course, you do NOT need to continue to work through it right away. Instead, return to the Course Catalog SEARCH page to locate and add the other courses.

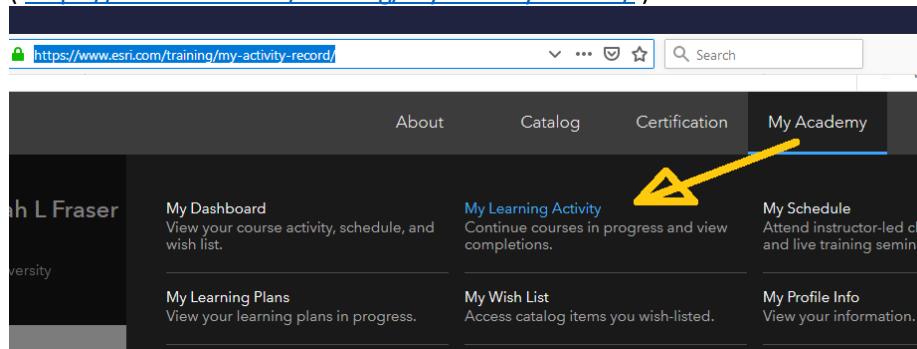
The three courses you will need to find are:

- a. **Sharpen Your Skills – Spatial Analysis 101** (Video; Requires Maintenance)
hint - search for: *sharpen your skills*
- b. **Preparing For Network Analysis** (Web Course; Requires Maintenance)
hint - search for: *preparing for network analysis*
- c. **Going Pro: ArcGIS Pro Essentials for ArcMap Users** (Training Seminar; Free)
hint - search for: *going pro*



3. When you have selected (and launched) these courses for the *first* time, they are added to your **“Activity Record”**, and will remain associated with your ArcGIS account. You can view *all* of your courses (both those “in progress” and “completed”), as well as your certificates & learning history by going to **My Academy** → **My Learning Activity** (see graphic below). From there, you can also conveniently launch any of your courses again any time.

(<https://www.esri.com/training/my-activity-record/>).



The screenshot shows the Esri Learning Academy dashboard. At the top, there is a navigation bar with links for 'About', 'Catalog', 'Certification', and 'My Academy'. The 'My Academy' link is highlighted with a yellow arrow. Below the navigation bar, there is a sidebar on the left with a user profile picture and name ('Sarah L Fraser'). The main content area contains several cards: 'My Dashboard' (View course activity, schedule, and wish list), 'My Learning Activity' (Continue courses in progress and view completions), 'My Schedule' (Attend instructor-led classes and live training seminars), 'My Learning Plans' (View learning plans in progress), 'My Wish List' (Access catalog items you wish-listed), and 'My Profile Info' (View your information).

4. After you have found the three courses and launched them once (to add them to your **Activity Record**), you are ready to proceed to Part 1, Part 2 or Part 3.
You can do these parts in any order since they are independent of each other.

More General Instructions (Submitting this Assignment & its Due Date)

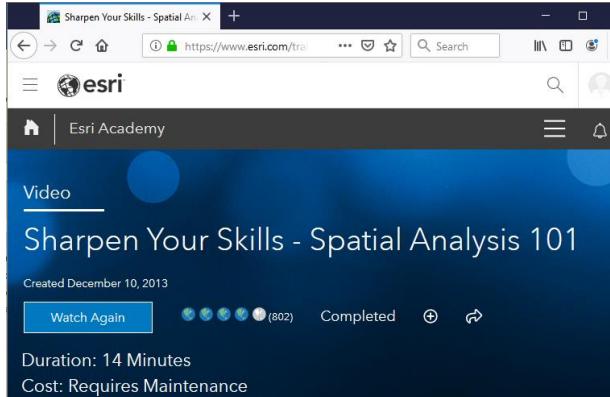
- There is a worksheet for each of the three parts of the assignment. Please complete all three worksheets.
 - Part 1 6 points
 - Part 2 11 points
 - Part 3 11 points
 - Total: 28 points
- You may type your answers and submit the worksheet(s), or you might find it convenient to print your worksheet, write your answers, and submit a photo (or photos) of your completed work. Either way is acceptable.
- Please submit your assignment by e-mail to FraserW@BrandonU.ca.
It would be helpful if you would include the words “GIS2 Lab” within in your e-mail subject heading.
- All parts of this year-end lab assignment are due no later than 8 AM on **Friday April 3rd 2020**.

PART 1: Sharpen Your Skills – Spatial Analysis 101 (video)

6 points

Instructions

To do Part 1, you will need to login to your ArcGIS account at my.esri.com, where you will view the VIDEO “**Sharpen Your Skills – Spatial Analysis 101**” in order to answer some questions. The video is only 14-minutes long and access to it is unlocked for users with permission (i.e. it has a “requires maintenance” level of permission).

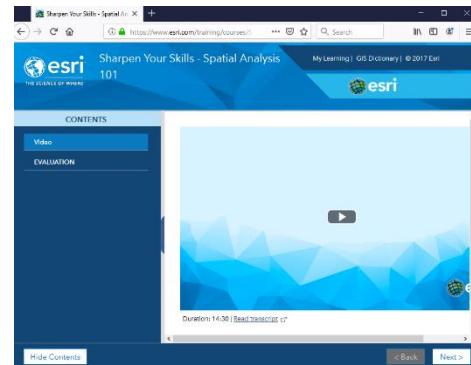


As long as you searched for it & launched it already (when you were getting organized at the beginning of this assignment), you can browse through **TRAINING** (<https://www.esri.com/training/>) into **My Academy**→**My Learning Activity** to launch the video.

If you *didn't* launch it then, you'll need to search the Course Catalog for it and launch it now.

This video describes a mini project, which made use of several standard geoprocessing tools.

Geoprocessing tools are used for analysis of geospatial data in VECTOR format. The demonstration involved a series of overlay operations using polygon feature classes. It should help to reinforce & review material we covered in Lab #5 (*Vector Spatial Analysis*).



Watch the video & take some notes, so that you can answer the questions on the [Worksheet for Part 1](#).

Pay attention to the processing steps in the demonstration so that you can sketch a flowchart.

You may draw the flowchart by hand on a piece of paper & submit a photo of your flowchart, or you may use a drawing program (like Paint) then copy-&-paste the image of your flowchart onto the worksheet that you are submitting. There is space on the worksheet for your work.

Your completed flowchart should include sufficient information to would allow an ArcMap user to replicate the results by following it step-by-step. Specifically, please be sure to show these clearly:

- (1) the order of operations;
- (2) the name of the tool used at each step; and
- (3) any specific instructions & parameters (such as the names of the input and overlay features, where appropriate, or a description of the formula being applied).

WORKSHEET FOR PART 1

Submitted By: _____

1. List and briefly describe three ways to locate and launch the tools you need to perform geoprocessing in ArcGIS Desktop (ArcMap): /3
 - a)
 - _____
 - b)
 - _____
 - c)
 - _____
2. Draw or sketch a flowchart to show the processing steps that were demonstrated in the mini project to locate storm drains according to “Best Management Practices” (BMPs). /3

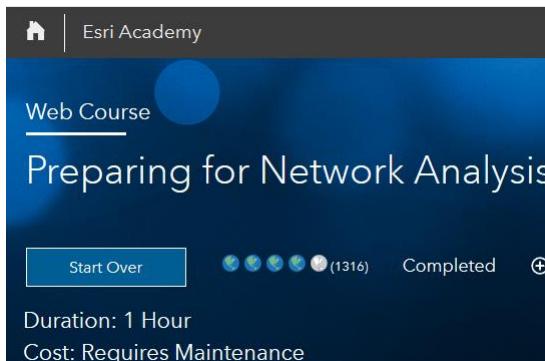
PART 2: Preparing for Network Analysis (web course)

11 points

Instructions

To do Part 2, you will need to log-in to your ArcGIS account at my.esri.com, where you will work through the WEB COURSE, “**Preparing for Network Analysis**” in order to answer some questions. It is nominally 1-hour in length and access to it is unlocked for users with permission (i.e. it has a “requires maintenance” level of permission).

When you need to select a *Course Version*, you can select the **ArcMap 10.7** version since that is what we had in the Geomatics Lab, but it will not really matter which one you select for this assignment.



As long as you searched for it & launched it already (when you were getting organized at the beginning of this assignment), you can browse through **TRAINING (<https://www.esri.com/training/>)** into **My Academy → My Learning Activity** to launch the web course.

If you *didn't* launch it then, you'll need to search the Course Catalog for it and launch it now.

IMPORTANT NOTE REGARDING SOFTWARE:

Many students in GIS2 have not installed their own copy of the ArcMap software; and it is not expected of you. Even if you have installed your own Student Trial version of the software, that will not include the **Network Analyst Extension**. Because of this, you will not be able to actually do the “exercise” that’s included in this web course. Nevertheless, if you work through the rest of the web course and read through the exercise’s steps, you will be able to pick up enough information to complete this assignment.

Answer the questions on the [worksheet for part 2](#).

AND

Take the exam at the end of the web course so that you can submit your certificate of completion. You need to get 4 out of 5 questions correct to pass the test.

NOTE: It is not necessary to do the exercise in order to take (& pass) the exam, although it is recommended that you read through its steps.

WORKSHEET FOR PART 2

Submitted By: _____

1. List three kinds of **elements** you find in a network. /3
 - a)

 - b)

 - c)

2. In addition to those elements, a network needs to have _____, which is based on **geometric coincidences of line endpoints, line vertices, and points**. Without it, simple features like line features that represent streets are not aware of one another. /0.5
The rules which determine the way in which points, line endpoints and vertices coincide geometrically are known as _____ rules. /0.5
3. To do any network analysis using ArcGIS, in what order should you do these steps? /2
 - _____ Build a network dataset.
 - _____ Create a network dataset.
 - _____ Perform network analysis.
 - _____ Switch on the Network Analyst Extension.
4. The *most common* network analysis task is _____ /1
5. List two ways to enhance functionality in network analysis. Give an example of each. /2
(The web course lists four ways; please list & give an example of *any two* of them.)

6. Please submit your **certificate of completion** (or e-mail a screen shot of it). /2

PART 3: Going Pro: ArcGIS Essentials for ArcMap Users (training seminar)

11 points

Instructions

To do Part 3, you will need to login to your ArcGIS account at my.esri.com, where you will view the TRAINING SEMINAR called “**Going Pro: ArcGIS Pro Essentials for ArcMap Users**”. The training seminar is a 1-hour recorded video from a workshop presentation, and includes software demonstrations. Access to it is free (i.e. users do not need special permission to view it).



As long as you searched for it & launched it already (when you were getting organized at the beginning of this assignment), you can browse through **My Academy→My Learning Activity** to launch the training seminar.

If you *didn't* launch it then, you'll need to search the Course Catalog for it and launch it now.

Please view the Training Seminar and fill in the [worksheet](#) for Part 3.

The screenshot shows the content page of the seminar. The left sidebar has a "CONTENTS" menu with "Introduction", "Presentation", and "EVALUATION" options. The main area is titled "INTRODUCTION". It describes the seminar for experienced ArcMap users transitioning to ArcGIS Pro. It highlights key differences in mapping, adding, and geoprocessing workflows, and demonstrates new capabilities. It also mentions requirements for ArcGIS Online and user roles. The page is version 1.0.0.

WORKSHEET FOR PART 3

Submitted By: _____

1. In contrast to ArcMap (which uses “map documents” and .mxd files), **ArcPro** is organized into *“a collection of related geographic datasets, maps, layouts, tools, settings & resources, saved in an .aprxF file.”* This collection in ArcPro is referred to as a: _____ /1
2. Match these ArcGIS Pro terms with their correct definition in the table below: /2.5
Use words from this “[List of ArcGIS Pro Terminology](#)” to fill in the blanks in the first column.

- | | | |
|-----------------------------------|--------------------------|---------------------------------|
| ➤ Catalog Pane
➤ Contents Pane | ➤ Explore Tool
➤ Pane | ➤ Ribbon
➤ Tab on the Ribbon |
|-----------------------------------|--------------------------|---------------------------------|

ArcGIS Pro Terminology	Definition	Equivalent Term in ArcMap
➤	A dockable window that contains commands and settings that are <i>not</i> on the ribbon	A dockable window
➤	The rectangular area across the top of the application composed of tabs that contain software functionality. Tabs here include: <i>Project / Map / Insert / Analysis / View / Edit / Imagery / Share</i>	User interface menus & toolbar
➤	This contains an inventory of all items in a project	
➤	A region on the ribbon that groups related software commands	Toolbar
➤	Contains functionality of Pan, Zoom, and other navigation tools, and HTML Pop-Up and Identify tools	

3. In a short phrase or sentence, what are **key differences** between ArcMap and ArcGIS Pro, with respect to the following? (In other words, what is new in ArcPro for these?) /3

a. The User Interface:

b. Editing:

c. Layouts:

4. *Group Editing Templates* allow users to combine multiple operations in one editing step.
In the software demo related to ArcGIS Essentials (starting around minute 31 or so), what editing operations were combined in the example of making a Group Editing Template? /1.5

5. Name a training course on ESRI's Virtual Campus might be useful for someone who already knows ArcMap, and who wants to learn more about using ArcGIS Pro. (There are several; please name any one.) /1

6. From the Q&A time toward the end of the video, what are the answers to these questions that were posed by participants during the seminar? /2

- a. Can both ArcMap and ArcGIS Pro be run on the same PC, the same machine?

Yes No

- b. Will ArcGIS Pro replace ArcMap in the near future?

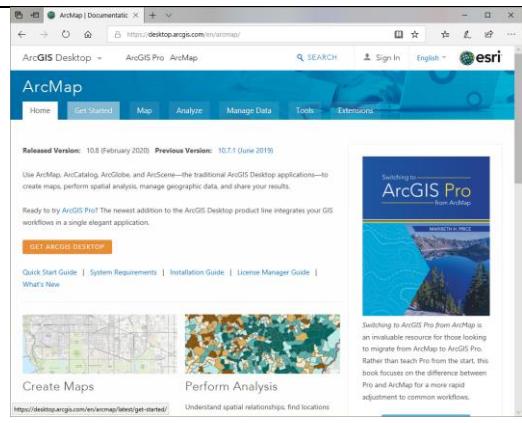
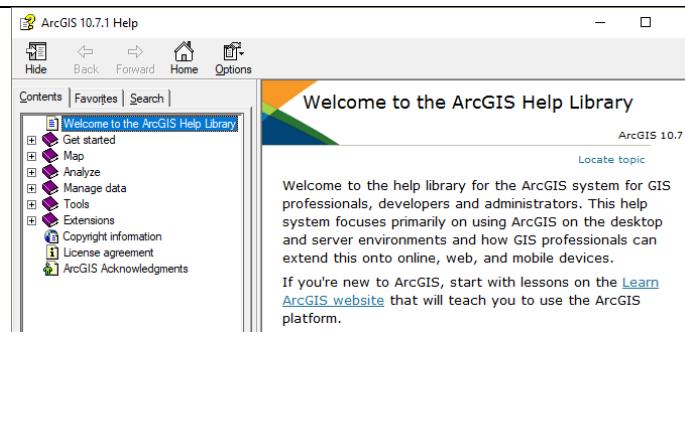
Brandon University – Department of Geography
 38/42:376 – GIS 2: Spatial Data Management & Analysis
 Prepared by W van Heyst

Additional Resources & Reference Materials

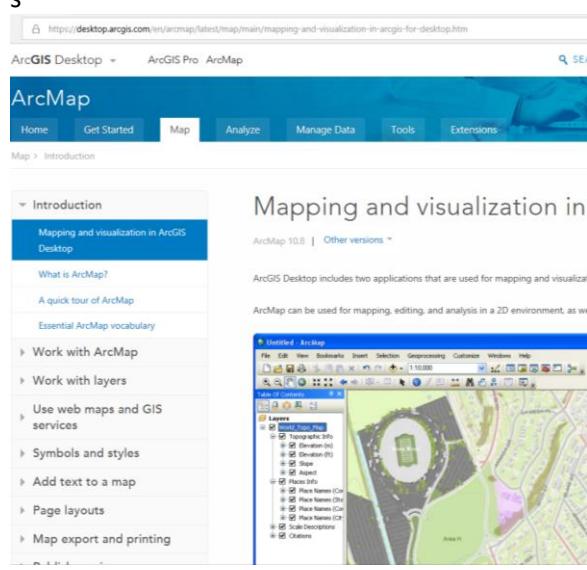
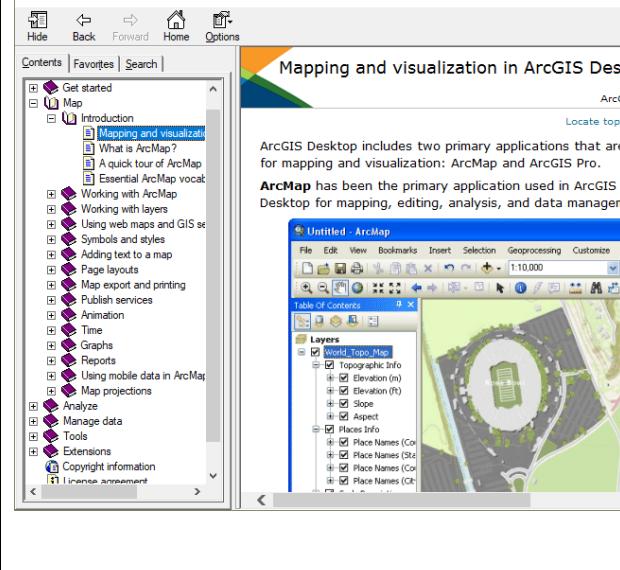
ArcGIS Desktop Help

Where can I get information about ArcGIS on-line? <https://desktop.arcgis.com/en/arcmap/>

The tabs across the top of the web-page correspond to the “chapters” in the ArcGIS Desktop Help.

On-line view:	Desktop Version (off-line view)
	

Comparing content for the first two “pages”

On-line view	Desktop (off-line view)
	

ArcGIS Pro Terminology Guide

See also “ArcGIS Pro Terminology Guide” document

<http://www.esri.com/library/brochures/pdfs/arcgis-pro-terminology-guide.pdf>