Geology/Geography 4113:
General Computer Instructions
Revision 2018_02_21

Log-on information

Log on using your UWYO username and password.

In the following, text which is identical to that which will appear on the computer (either in menus, command buttons, or file names) is written in **`bold Courier typeface`**. Text which you supply, but varies by some general rule, such as *lastname_lab_nn*, is written in italics.

Computer files and directory locations

Permanent Files: Any information you wish to keep should be stored in your network **`HomeDrive (H:)`** directory.

Temporary Local Files: If you try to access large image files in your **`HomeDrive`** directory over the network, you may find scrolling and processing very slow. You can create a temporary directory on your local machine, within **`C:/temp`**, and place files there where access will be much faster. However be cautious because when you log off any files left there will be deleted. I suggest keeping the original data and very temporary data products here, but for anything which would take time to recreate should it be lost, keep a copy on your network **`HomeDrive.`**

Obtaining data files:
For the time being I'm placing data files on the class website at <http://geofaculty.uwyo.edu/rhowell/classes/remote_sensing/>. Download the zip file from there to your local machine then right click on the zip file and "extract" the contents to your local directory. Note that Windows shows zip files as a folder icon with a zipper but they aren't real folders and ENVI and most other software can't directly read their contents. You need to "extract" those contents into a real folder first.

Eventually there will be a shared directory at the following location (or a new one I will provide) at:
`\\uw-bulk.uwyo.edu\geobulk$\Commons\Howell share\g4113_data`
and within that, subdirectories such as **`lab_04`** containing each lab's data. To access it open Windows (not Internet) Explorer by pressing the **`Win+E`** key or using the appropriate icon, then type the above path into the Explorer path bar. Copy the files you need to your temporary directory on your local machine. Don't try to open the shared folder files directly in your software as that may generate conflicts with other users.

Saving completed labs: For most labs you will generate your lab reports in the form of a Word file. To keep them organized, name your final version *lastname_lab_nn.doc*. Copy that file to
`\\uw-bulk.uwyo.edu\geobulk$\Commons\Howell share\g4113_homework_drop .`
Note this is a "write only" directory, in that you will be able to deposit files there, but will not be able to read or delete them once they are created. If you make a mistake and need to deposit a new version, clearly name it, for example **`howell_lab_04_version_2.doc`**. Once you've deposited your final lab, let the instructor know you've done that.|

Essential information to include in labs reports:

Write the title and lab number at the top of your lab, and the date and time when you finished editing your report. The latter two items are to avoid any confusion if you submit multiple versions. Also list the name of the computer you are using so we can follow up on any reports of computer problems.

In most cases you will be working on lab reports in pairs. Near the top of the lab list the names of both people (one of whom will presumably be the same as the *lastname* on the file name.)

Saving and copying images for your report

At many steps ENVI gives you the option of saving an image-format version of your data. Usually you'll want to select the jpeg format. Once saved, you can paste that image into your Word report.

A shortcut which you can also sometimes use (but it produces lower quality) is to use the **`Alt+PrintScr`** key combination to copy an image of the active window onto the clipboard, then simply paste that copy into your document. (On the Mac keyboards the equivalent key combination is **`Alt+F14`**.) This is faster and has sufficient quality for most operations, but note it only captures what is actually displayed on the screen. In some cases, where only part of your data is being displayed, you'll need to use the ENVI menu commands to save an image of the full scene, including those parts not displayed.

Working outside lab hours

You can save your Word report to a USB disk or your network **`HomeDrive`** complete your written report outside lab hours. If you do need to use the lab computers, see the instructor for access.

General ENVI instructions

Many ENVI operations consist of a series of selections from the menus (either the individual Image menus or the general ENVI menu). As shorthand, if you click on **`File`** then on the submenu **`Open Image File`** I write that as **`File>Open Image File.`**

When ENVI displays an image on screen it uses hardware which converts numbers from 0 to 255 into brightnesses from black to full brightness, for each of the three possible red, green, and blue channels. In RGB mode you select which original data bands are loaded into which color channels. When you tell ENVI to display an image in grayscale, it simply loads the same numbers into the red, green, and blue channels. Since the range of the original data may be much larger than 0 to 255 (although not for TM), various "image enhancement" functions are available to control how the original data range is mapped into this 0 – 255 range. They in effect control the contrast and brightness, but in sophisticated ways.

Keyboard Shortcuts

Purpose	PC	Mac
Special "Shift" Key	Windows Key	Command Key
Launch Windows Explorer	Win + E	Command + E
Copy image of active window to clipbard	Alt + Print_Scr	Alt + F14
Enable number keypad	Num Lock	Clear