**ECE 1111: Engineering Computation I**

**Homework No. 3: Driver Programs and Workflows**

**Deposit your work in:**

**/data/courses/ece\_1111/current/homework/hw\_03/<lastname\_firstname>/p01**

**Goal:** Introduce you to the basic components of a Python program.

**Description:** Write a SINGLE Python program that:

1. Takes “—help” or “-h” as an argument and displays an appropriate help message. Store the actual help message in a file.
2. Loops over the command line arguments and opens each file.
3. Reads the file line by line.
4. Searches for the line for the word “foo” ignoring case (e.g., “fOo” and “Foo” will match).
5. Prints the name of the file, the line number of the match in this file, and the contents of the line:

file: <filename>

line 27: <contents of the line>

1. At the end of the program, the total number of matching lines is displayed:

lines matched = 999

**Examples:**

1. p01.py file1.txt file2.txt file3.txt --help fil\*.txt

This would produce a help message and exit.

1. p01.py file1.txt file2.txt file3.txt fil\*.txt

would produce something like:

file: file2.txt

line 35: This line contained foo for some reason.

file: file2.txt

line 99: FoO found here.

file: file\_joe.txt

line 35: This line also contained foo.

Total lines matched = 3

Put your code in a file with this full pathname: *.../hw\_03/lastname\_firstname/p01/p01.py*. Look at code in *$NEDC\_NFC/util/python/\*/\*.py* and the associate files \*.help and \*.usage, to see some examples of how the help messages work. Try this command as an example of how your program should work:

nedc\_edf\_pyprint\_header –-help

nedc\_edf\_pyprint\_header –h

nedc\_edf\_pyprint\_header –-usage

nedc\_edf\_pyprint\_header –u

This kind of documentation should be external to your code so they can be easily changed. $NEDC\_NFC is an environment variable that is defined when you log on, and is specific to the architecture you are using.