CPS 5401 Fall 2015   Name _____

Midterm Review Guide

For the midterm exam, you should be able to demonstrate the learning outcomes below. The exam will be closed book, closed notes, closed computer. You will not be expected to memorize syntax but to demonstrate concepts. The midterm exam will be given in class on Thursday, October 8, 10:30-11:50am.

1. Use Linux shell commands and environment variables correctly.

2. Explain and carry out the compile and link steps of building a program in C or Fortran.

3. Construct a basic Makefile for expressing dependencies and building a program in C or Fortran.

4. Use decision statements correctly in C or Fortran to implement decision logic.

5. Implement iterative computations correctly using loops in C or Fortran.

6. Declare and use 1D and 2D arrays correctly in C or Fortran.

7. Define and call subprograms correctly in C or Fortran, including with array arguments. Explain pass by value and pass by reference.

8. Use Fortran90 array assignment statements and array slices correctly.

9. Write function definitions correctly in Python.

10. Given a subprogram in C or Fortran, explain and demonstrate how to create a Python extension module and call the subprogram from Python.