

**ENGINEERING H192
EXTRA WEEKLY ASSIGNMENT 03**

File I/O Part Deux

A data file, **ewa03_2008.dat**, which contains a list of sphere diameters (in mm) exists in ~EngH192/Students. You are to (1) copy this data file to your home directory and (2) write a complete C/C++ program that:

1. Displays on the screen your:
 - a. name
 - b. seat number
 - c. date
 - d. section time
 - e. instructor's initials
 - f. assignment number.
2. Reads in each diameter
3. Computes the volume and surface area of a sphere with that diameter
4. Displays on the screen the:
 - a. radius
 - b. sphere volume for that radius
 - c. sphere surface area for that radius
 - d. average radius, average volume, and average surface area
5. Displays a descriptive heading (e.g. name and units) at the top of each column on the screen.
6. Writes to an output file, **ewa03_2008.txt**, the same information that is being displayed on the screen in items 1, 4, and 5.
7. Closes all open files.

Use a field width of 10 with 3 decimal places for floating point output (i.e. radius, volume, and surface area). Refer to the class lecture notes and Deitel and Deitel for examples of output formatting and looping to read from a file.

A demo version of the program, **ewa03_2008.out**, can be found in ~EngH192/Students. The demo is fully functional except it does not write the results to an output file.

Print a copy of your source code, **ewa03.cpp**, and a copy of your **ewa03_2008.txt** file and submit them with this sheet on Monday, 01/28/08.

Name _____ Instr. _____ Room _____ Seat _____ Hour _____