

ELEC 385: Computer System Design
Homework #10
Due: March 27, 2015

1. Write an assembly language program to calculate the following sum for N single precision floating point numbers. Use assembly directives to initialize meaningful test data and use variable names within the code. Use a system call to print the result to the I/O window instead of writing the result to memory (this makes it easier to view). Submit a hard copy of your commented source file (.asm) and a screen shot of the result. Compare the result with your hand calculated sum.

$$\sum_{i=1}^N (x_i - 82.0116)$$

2. Translate the following instruction into machine code, replacing pseudo-code where necessary. Show all your work in binary, but report the machine code for each instruction in hexadecimal.

```
.data
Array:  .double    100.198,-0.983,10000.5,0.00745,8
Constant: .double    0.1
Result:  .double    0

.text
        ldc1        $f0,Constant
        lwc1        $f2,100($t1)
        sub.d       $f20,$f22,$f24
        sdc1        $f0,Result
```

Show all work. And, as always, homework is to be single-sided and stapled.