

# BiL 102 – Computer Programming HW 03

**Last Submission Date: Mar. 20, 2013 – 14:00**

Your homework consists of 2 parts. In the first part you will compare your own sinus function with the sin function of the “math.h” library. In the second part you will implement the addition of two matrices.

**PART1 (50 PTS):** An example calculation of  $\sin z$  ( $z$  is a radian value) for the first 4 terms is given below.

$$\sin z = \frac{(-1)^0 z^{0+1}}{(0+1)!} + \frac{(-1)^1 z^{2+1}}{(2+1)!} + \frac{(-1)^2 z^{4+1}}{(4+1)!} + \frac{(-1)^3 z^{6+1}}{(6+1)!} \dots$$

You will write a sinus function that gets the parameters  $z$  and  $n$ , and returns the sinus of  $z$  for the first  $n$  terms.  $z$  and  $n$  values will be entered by the user. The program will calculate the sinus function for the first  $n$  terms and find (and write to console) the term number (less than  $n$ ) with the minimum error, comparing the result with the result of sin function of the “math.h” library.

**PART2 (50 PTS):** Your program will read two matrices from two text files and write the addition of the matrices to another text file. The content of any matrix file will look like the example below.

3 4 5 7
2 9 10 3
2 6 7 2

-Your program has to check the size of the matrices before the addition operation.

-Your program has to be able to do the operation for any size.

## General:

1. Obey honor code principles.
2. Obey coding convention.
3. Your submission should include the following file only:  
HW03\_<student\_name>\_<studentSurname>\_<student number>.c
4. Deliver the printout of your code until the last submission date (March, 20<sup>th</sup>, 2013 at **14:00**).