

Engineering 1D04

Assignment II

The following is due at the **BEGINNING** of the tutorial the week of Jan 27 to 31, 2003:

- 1) A printout of the C code implementation of the pseudo-code from the previous assignment. The C code must have appropriate comments and indentation.
- 2) The output of the C program including at least 5 good test cases. (See the 1D04 website for information on how to capture program output.)
- 3) The pseudo-code that the C code is based on. Place your pseudo-code as an appendix at the BACK of the assignment. NOTE: If your pseudo-code had errors in it, you must fix the errors and submit the new pseudo-code with the C code.

NOTE: Please include your tutorial number on every assignment. Remember that the top-page of every assignment is to include the statement :

“This assignment represents my own work”

followed by your signature, and your e-mail address. You need to include this information, or your assignment mark will be ZERO.

Problem

The problem was described in the previous assignment. Write a C program based on the pseudo-code that you developed for the previous assignment.

Numerical application

Compute and output:

- (i) The length of the pier (l), the angle of the water declination (β) and the volume of the two pillars, given the following input values:

$$L=250 \text{ m}, H=6\text{m}, d=0.3\text{m}, h=2.5\text{m}, \Delta z=0.5\text{m}$$

Make sure all inputs have appropriate prompts and the output is informative.

- (ii) Create and test four more sets of reasonable values of L , H , d , h and Δz .

Notes:

- Whenever you do calculations, whether by hand or with a computer, you should make sure that you are consistently using the same system of units.
- In a problem as straightforward as this one, it is helpful to verify the test cases by some hand calculations. It is a good habit to test and verify your programs whenever possible.