

**BIL108E Introduction to Scientific and Engineering Computing**

**Homework 3**

**Attention:** Please be aware that the Deadline for Homework3 is 25/04/14 until 11.00 pm. Late submissions will not be accepted.

Note: 1.The solution of each question must be prepared separately as .m file and submitted via Ninova as a single folder in “\*.zip” or “\*.rar” extension (For example; SQ1.m and SQ2.m).

Note: 2.Using comment “%” operator, please explain your solutions.

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**1. (50 points)** Determine the positive real root of  $\ln(x^2) = 0.7$

- a) Graphically,
- b) Using three iterations of the Bisection method with initial guesses of  $x_l = 0.5$  and  $x_u = 2$ .

**2. (50 points)** Determine the highest real root of  $f(x) = x^3 - 6x^2 + 11x - 6.1$

- a) Graphically,
- b) Using the Newton-Raphson method (three iterations,  $x_i = 3.5$ )
- c) Using the Secant method (three iterations,  $x_{i-1} = 2.5$  and  $x_i = 3.5$ ).