# EE202 Numerical Methods for Engineers
## Laboratory Assignment: 12

**\*\* Find solutions of the following questions in Matlab:**

## Question 1:

Applying Gauss-Newton method to $f(x_1, x_2) = \sum_{i=1}^{5}(x_1 e^{x_2 t_i} - yi)$ with data
$t = (1\ 2\ 4\ 5\ 8)^T$

$y = (3.2939\ 4.2699\ 7.1749\ 9.3008\ 20.259)^T$

Using an initial guess that is close to the solution $x = \begin{pmatrix} 2.50 \\ 0.25 \end{pmatrix}$.

## Question 2:

Applying Gauss-Newton method to $f(x_1, x_2) = \sum_{i=1}^{4}(2x_1 x_2 t_i - yi)$ with data
$t = (2\ 3\ 6\ 7\ )^T$

$y = (3\ 6\ 8\ 9)^T$

Using an initial guess that is close to the solution $x = \begin{pmatrix} 2 \\ 0.5 \end{pmatrix}$.