EE3054 - Homework 1 - Due Sep. 9 2005

1. If you do not already have Matlab on your laptop, get it installed before the first lab session (Sep. 9).

2. Basics of Matlab: In Matlab, to define, for instance, the matrix

\[
A = \begin{bmatrix}
1 & 2 & 3 \\
4 & 5 & 6 \\
7 & 8 & 9
\end{bmatrix},
\]

you can use the command

\[A=[1,2,3;4,5,6;7,8,9]\]

Note that a comma separates two elements in a row and a semicolon separates two columns of the matrix. Addition, subtraction, and multiplication of two matrices can be performed using the +, -, and * operations, respectively. The transpose of a matrix A can be obtained using the operation A’.

Define the following matrices

\[
A = \begin{bmatrix}
1 & 2 & 1 & 2 \\
2 & 1 & 1 & 2 \\
2 & 1 & 2 & 1 \\
1 & 1 & 2 & 2
\end{bmatrix}, \quad B = \begin{bmatrix}
2 & 3 & 4 & 5 \\
2 & 0 & 0 & 1 \\
2 & 1 & -2 & 3 \\
1 & 4 & 2 & 5
\end{bmatrix}
\]

and compute the following using Matlab

- A+B’
- A*B
- the inverse of A