MATLAB: University of California, Davis

Computer LAB for Linear Algebra Dr. Daddel

MATH 22AL LAB # 10

11 Matrices with Complex Entries:

By a **complex matrix** we mean a matrix whose entries are complex numbers. Matrix operations such as addition, subtraction, multiplication and scalar multiplication is the same for complex matrices as they defined for matrices with real entries. We define few new types of matrices and conjugate of a complex matrix as follow:

11.1 Conjugate of a matrix

Conjugate of a complex matrix A is denoted by $\overline{A}$ and obtained by replacing each entry of the matrix A by its conjugate. That is $\overline{A} = (\overline{a_{ij}})$

Example:

$$A = \begin{bmatrix} 2-3i & -4+7i \\ 9i & -12 \end{bmatrix}$$

$$\overline{A} = \begin{bmatrix} \overline{2-3i} & \overline{-4+7i} \\ \overline{9i} & \overline{-12} \end{bmatrix} = \begin{bmatrix} 2+3i & -4-7i \\ -9i & -12 \end{bmatrix}$$