

# Course N°03 Matrix in MATLAB



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### 📣 MATLAB®



#### 1.Definition a matrix

A matrix is a surrounded by brackets and may have an arbitrary number of rows and columns; for example,

the matrix

	(1	2	3)	
A =	4	5	6	(1)
	7	8	9)	

To create a such matrix in MATLAB, the following basic conventions must be followed:

- ✓ Separate the elements of a row with spaces or commas ","
- $\checkmark$  Use a semicolon ";" to indicate the end of each line or row
- ✓ Surround the entire list of items with square brackets [ ].

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#### 2. Other useful MATLAB functions

For matrices, to find or extract the highest and/or lowest value or number in the whole matrix, we use the command/function max(.) and/or min(.) two times because these are matrix with two dimensions not one dimension. Otherwise, will indicate the highest values or the lowest values for each column in the matrix.



Again, in order to find or evaluate the summation and/or production of such element in the matrix, we use the command/function sum(.) and prod(.)



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3. Find summation as well as product of	the all of element in the matrix	
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The mean of a matrix, also known as the average which equal the sum of the numbers in each row in the matrix divided by the number of rows and then the result will sum again and divided on the number of columns, using the command/function mean(.)

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#### 3.MATLAB output

#### 3.1.The *diag* command

Displaying or to generate a diagonal of a matrix, using the command/function diag(.)

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#### 3.2. The *transpose* and/or ' and/or *transp* command

Transpose a matrix, rows become a columns and columns become rows.



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#### 3.3.The *inv* command

To display the inverse of such matrix just type the command/function inv(.) and the inverse of the matrix will be printed in the screen



#### 3.4. The size command

To display the dimension of a matrix, just type the command/function size(.) and the dimension will be printed in the screen.

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#### 4.List of References

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