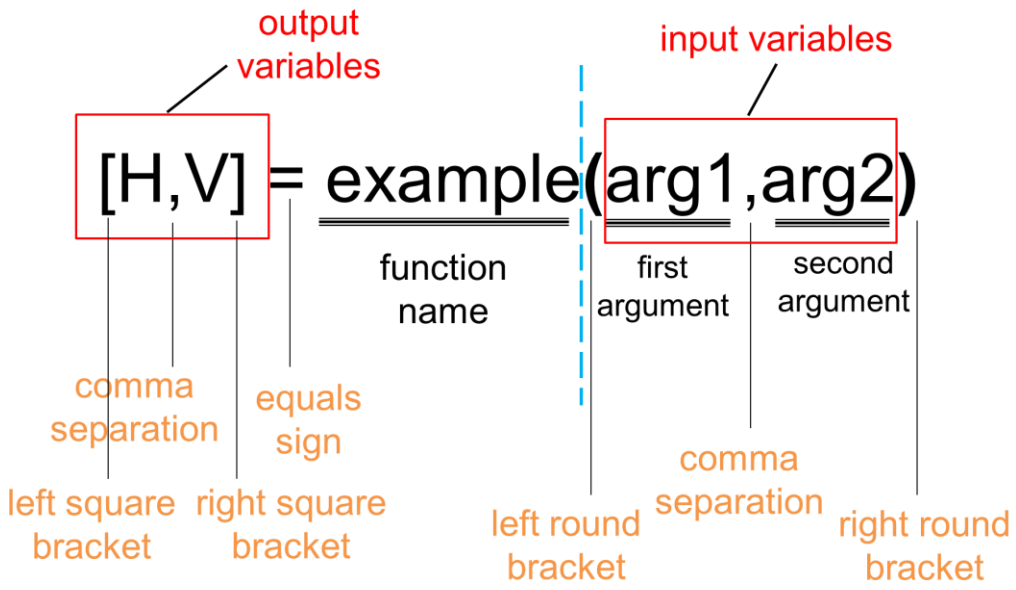
WESTERN SYDNEY
UNIVERSITY

Module 2

Extended Look at MATLAB Functions

Syntax of a multi-input/output function



- Both input and output arguments are separated by commas (,)
- Output arguments/variables are grouped with square brackets [ ]
- Input arguments are grouped with round brackets ( )

Example

- max() can generate two output variables, first is gives the largest value and second is the element position, i.e.

```
[value,position] = max(x)
```

Given x, what is the largest number in vector x and where is it located?

```
x = [5, 3, 7, 10, 4]
```

value = 10	highest value is 10
position = 4	located in the 4th column

Generation of random numbers

- rand(n) produces an n×n matrix of random numbers from 0 to 1. -- one input argument
- rand(n,m) produces an n×m matrix of random numbers between 0 and 1. -- two input arguments
- randi([a b],n,m) produces an n×m matrix of random integers between and including a and b -- three input arguments

To use MATLAB to produce a random number between 0 and 40, including decimal place numbers write following:

```
w = 40*rand(1)
```

If you want one integer from 0 to 40 then write the following statement:

```
v = randi([0 40],1)
```