

## **Reference Section:**

`all(vec)` – returns true if all of the values in a logical vector are true  
`any(vec)` – returns true if any of the values in a logical vector are true  
`cell(r, c)` – returns a  $r \times c$  array of empty cells  
`cell2mat(arr)` – converts a cell array of doubles to an array of doubles  
`char(num)` – returns a character vector whose ASCII values are given by `num`  
`class(vec)` – returns the data type of a variable  
`double(vec)` – returns the values of `vec` as floating point numbers  
`fclose(fh)` – closes a text file  
`fgetl(fh)`, `fgets(fh)` – returns the next line down in the text file specified by `fh`  
`find(vec)` – returns the numerical indices where a logical vector is true  
`floor(num)` – rounds a decimal down to the closest integer  
`fopen(filename, permission)` – opens a .txt file with specified permissions ('w', 'r', or 'a') and returns the file handle of the new file  
`fprintf(fh, line)` – prints a line to the text file specified by `fh`  
`ischar, isnumeric, iscell, islogical, isstruct, isnan, isempty(var)` – outputs true or false, depending on whether or not the variable has a particular data type or value  
`isequal(var1, var2)` – checks to see if `var1` and `var2` are exactly equal.  
`isfield(struct, field)` – outputs whether or not the structure contains the field  
`length(vec)` – returns the number of elements in a vector, or the longest dimension of an array  
`linspace(start, stop, num)` – returns a vector of length `num` containing evenly spaced values between `start` and `stop`  
`lower, upper(str)` – converts all uppercase letters in `str` to lowercase (or vice versa for `upper`)  
`[a b] = max(vec)` – returns the value and position of the maximum value in a vector  
`mean(vec)` – returns the average of the values in a vector  
`[a b] = min(vec)` – returns the value and position of the minimum value in a vector  
`num2cell(arr)` – converts an array of doubles to a cell array  
`num2str(x)` – converts a number to the string representing that number  
`ones(r, c)` – returns a  $r \times c$  array all with value 1  
`rand(r, c)` – returns a  $r \times c$  array containing random numbers between 0 and 1  
`round(num, dec)` – rounds a number to the nearest integer  
`reshape(arr, r, c)` – returns an  $r \times c$  array formed by reshaping an array with  $r \times c$  total elements  
`rmfield(struct, field)` – outputs a structure with the field removed  
`[r, c] = size(arr)` – returns the number of rows and columns of an array  
`[v, o] = sort(vec)` – returns the sorted values of a vector and their positions. Sorts cell arrays in alphabetical order.  
`sprintf(fmt, var1, ...)` – returns a string containing the format string after replacing the `%<>` entries with each input parameter.  
`str2num(x)` – converts a string representing a number to the number itself  
`strcmp(a, b)` `strcmpi(a, b)` – true if string in `a` is identical to string in `b` (i is case insensitive)  
`strfind(str, pattern)` – returns the numerical indices where each incidence of the pattern of letters occurs in a string  
`[tk, rest] = strtok(str, dlm)` – discards leading delimiters and returns the next token and the remains of the string  
`struct(field, value(s), field, value(s), ...)` – creates a structure/structure array  
`sum(vec)` – returns the sum of the values in a vector  
`arr'` – transposes `arr`