ENGR 1120 Lecture Chapter 2 - More about 1D Matrices

- **Review using 1D matrices in MATLAB**
  - **aka: array or vector**
  - **Initilization**
  - **Accessing**
  - **Assignment**
  - **Re-Assignment , aka Overwrite**

- **some useful functions for 1D arrays**
  - **length()**
  - **size()**
  - **sum()**
  - **min()**
  - **max()**
  - **plot()**
  - **and many more... (remember to use the >> help)**

- **the Colon Operator :**
  - **used with sequential arrays that are** *ranges*

    i.e. [1, 2, 3, 4, 5, 6, 7, 8, 9, 10] or [0.1, 0.2, 0.3, 0.4, 0.5]

  - **used for Initialization of a range**

  - **Slicing**

- **array Concatenation**
  - **this is a special use of the [ ] and *intialization***
  - **create arrays from other arrays**

- **Some hints about the plot() function**
  - **everything in the window goes below the figure command**

```
figure(1)
```

  - **the hold command allows you to place multiple items on the figure**

```
hold on
```

  - **typical use of plot might look like this**

```
plot(xdata,ydata)
```

  - **but you might see it like this**

```
plot(ydata)
```

  - **many built in ways to label your plots**

```
title('my awesome graph')
xlabel('X (meters)')
ylabel('Y (meters)')
```

  - **you can also set the axis limits in several ways**

```
axis([xmin xmax ymin ymax])
axis equal
```

- **we have full control of the appearance of lines and points on the graph**
  - **3 part short code**

b	blue	.	point	-	solid
g	green	o	circle	:	dotted
r	red	x	x-mark	-.	dashdot
c	cyan	+	plus	--	dashed
m	magenta	*	star	(none)	no line
y	yellow	s	square		
k	black	d	diamond		
w	white	v	triangle (down)		
		^	triangle (up)		
		<	triangle (left)		
		>	triangle (right)		
		p	pentagram		
		h	hexagram		

  - **figure handle**

```
ph=plot(xdata,ydata,'MarkerSize',10)

get(ph)
```