**21\_Basic sign convention**

In ETABS there are two types of axis global and local.

This is the global axis as explained in previous lecture.

Each element has its own local axis.

For example to view local axis of this line element, click on view options and check on local axis option for frames.

Local axis can be remembered from America's flag.

Red is the local axis 1 along member length.

The point or end from where local axis 1 starts is called i end and the other one is called j end.

White is the local axis 2 and is by default in vertical direction in elevation.

And local axis 3 is the out of plane axis about which this beam will bend under UDL.

Global z direction is upward so all the gravity loading will be negative.

Tension is considered as positive and compression as negative in ETABS.

X axis is positive towards right and y axis is positive towards top on a plane.

For structural analysis we do modeling center to center. This means we connect beams to center of the columns that is why you will see just one point for the center of this column irrespective of the size. You may model more complex things by using shell elements instead of line objects.

We come back to this sign convention again in next lectures on reading ETABS results.

This is the basic course and contains basic information. These topics are discussed in more detail in next courses. But for the time being this information is sufficient for you.