# CS6670
# Prograamming Assignment 2

Generalize your Program for Bezier Curves as follows:

(1) Modify the 2D program to run for 2D B-splines. You should check for open knot vector upper end conditions and change the knot vector to the **modified open knot vector end condition**.
(2) For interactively specified curves, you must allow the user to specify the degree of the curve, when that degree is possible, and you must allow the user to choose either a modified open uniform knot vector or a floating uniform knot vector that the program automatically fills in.
(3) Each data file will contain one curve.
(4) You should be able to create a new curve totally interactively (i.e., not from an already existing data file!)
(5) You should allow more than one curve on the screen at a time. That is, you must be able to read more than one data file to the executing program (no going into the source to change the read data file), and/or to create multiple new curves interactively. You must provide a "clear" capability that deletes a selected curve.

    The 2D data will be found in a data folder in canvas named "bspline2Ddata" with the extension "dat". The format for the 2D data files:
    - the first line has an integer with the degree of the curve
    - the second line has an integer representing the length of the control polygon
    - each subsequent line contains a control point of the control polygon in the format $x, y$. Each tuple appears on a separate line
    - the next line contains an integer indicating whether the knot vector is provided. If it is provided, the value will be 1, if it is not provided, the value will be 0.
    - The last line contains the knot vector, if the previous line contains an integer ¿ 0. You should gure out from the degree and number of elements of the control polygon how many elements should be in the knot vector.
    - Blank lines should be skipped.
    - Lines beginning with a pound sign (#) should be treated as comments. Comment lines may appear in the body of the data le.

(6) Modify the 2D program to be able to display 3D B-spline curves. The data files for 3D are in a folder in canvas labeled "bspline3Ddispdata" with the extension "txt". There are two differences from the 2D format. On the first line, there is a letter (either P or I), a comma, and then it continues with the degree. You are to ignore the initial letter. The tuple will have 3 elements $x, y, z$, on a line. Other than that the format is the same. NOTE: you must allow interactive specification and modification of 2D data and the data files. However, for 3D files you need only to display them.