# CSL7390 Social Network Analysis
# Assignment 1

***Note: Refrain from using pre-written code or solutions from the internet, including AI language models (like LLMs), to compose your queries. Ensure that your submissions are entirely your own work, and avoid copying or sharing code with your classmates. The evaluation process will include a plagiarism check.***

***Please submit one zip file (named as <roll no.>.zip) which will consist of two files 1) the full code in python script (convert the notebook into python file) 2) A report that will explain the theory and output. Late submissions are allowed. However, your obtained marks will be reduced by half as a penalty. You can use the networkx python library for the same.***

Download any undirected Social Network Data from https://snap.stanford.edu/data/index.html#socnets. Try to download a data set with at least 3000 nodes and possibly less than 10000 nodes. Measure the following:

1. Node Count, Edge Count, Average Degree
2. Degree distribution
3. No of Triangles
4. Diameter
5. No of components
6. Size of largest connected components
7. Clustering Coefficient
8. Centrality of the vertices: degree centrality, betweenness centrality, eigenvector centrality, Katz centrality, PageRank centrality
9. For a random k between 0-20 find all the k-cores in the network.
10. Report the number and size of the maximum and minimum clique