**ME274\_2015 Report**

* **Modularity**
* **Closeness centrality**

Under Network Diameter, closeness centrality is showed with relation between count and value. From the graph, it is not difficult to find that at value 0, the count is the at peak and the number is over 275. For other values, the count is just a bit over 0.

This graph makes sense because we know that 0 is the teacher that always posted on the blog. Therefore, 0 is the node that talks most frequent with other nodes. Other nodes with a positive count imply that those students at least have participated in discussing a piece of blog.

* **Eccentricity Distribution**

Under Network Diameter, eccentricity distribution showed us the distance between a node and the node that is furthest from it. From the graph, it is shown that value 0 owned the peak count, which is over 275. At value 5 and 6, the count is a bit high; one is 100 and the other is around 60. The eccentricity of rest of other nodes is just a bit above 0.

Based on the meaning of eccentricity, we can understand that the poster talks to students from different background. Student 5 and student 5 are presented to be very active students. They are willing to talk to students who are from different background. The other participants normally just communicate others with a similar background.

* **Connected Components**

Connected components is a way to measure the extent of engagement. From the report we can see that the number of weakly connected components is 239 and strongly connected components is 316. At the same time the graph uses two points to show the weekly and strongly components.

Those two points give us some information about how students engaged in the blog. It is shown that more than half students in ME274 strongly connected to others, which implies a frequent participation. The rest of others didn’t join in the talk too much.

* **Average degree**

The average degree of a node shows the number of edges that are adjacent to this node. From the result we found that the average weighted degree is 7.655. However, the results on Degree Distribution graph show that many nodes concentrated between 0 – 25, and just one node has a count of over 225.

The average degree here helps us understand the average engagement in this class. However, as what we can see from the graph, the teacher is very involved but some students are never involved. In this case, the average degree is not persuasive enough to represent the extent of engagement.

* **Average weighted degree**

Average weighted degree is quite similar with average degree. It is based on the number of edges on a node, but it is doing the sum weight of edges. According to this formula, the weighted degree is 3.828 and the graph has the same feature as that of average degree.

The average weighted degree is more helpful compared with average degree because after weighted the number is more close to the extent of engagement. In our case, the teacher is very involved but students are not. After weighted, the score represents the sum of every engagement so that the result I got is more close to the balance point.

* **Betweenness centrality**

Under Network diameter, betweenness centrality measures how often a node appears on shortest paths between nodes in the network. From the graph we can see that except 0(the poster) has a very high value all others are close to 0.

The betweenness centrality didn’t give us too much useful information. This is because in our situation most students just reply others message directly without passing others. That is why we can’t get too much from the graph.

* **Graph density**

Graph density measures how close the graph is to complete. For our directed parameter, our density is 0.008.

Graph density is not helpful because there are too many posted blogs without any response. That’s why we get a very low density graph.