**Homework #4:**
**VERSION 2.1**
LB145 S13 Sec 001-004

This homework is worth 12 points. The work that you provide will be worth 8 points. Once you hand it in, you will be asked to evaluate someone else’s homework – the quality of your evaluation will be worth an additional 4 points. Your final grade for this assignment will be determined by the teaching team.

Don’t forget 1 – you must upload a copy of your work to TurnItIn. The copy you upload should have NO IDENTIFYING MARKS ON IT.

Don’t forget 2 – the hard copy you hand in during class should only have the last four digits of your PID # as an identifier.

**Question: The Glucose Problem**

In the molecular process known as cellular respiration, how many ATP molecules can be made from the electron transport chain after one molecule of glucose is catabolized in glycolysis, pyruvate processing and the citric acid cycle.

Assume that 1 ATP is produced when 3.5 protons pass through ATP synthase.

Be sure to:

- Provide a complete drawing of the electron transport chain (to be submitted with work when you hand it in during class – you do not need to submit this on TurnItIn)

- Show your work where you calculate of the number of ATP molecules produced as a result of the Electron Transport Chain from the catabolism of 1 molecule of glucose.

- Label the location/structures where ATP production takes place.

**You do NOT need to describe glycolysis or the citric acid cycle, but DO you need to specify what molecules each process contributes to the electron transport chain.**

| Molecules contributed from Glycolysis | Molecules contributed from pyruvate processing and the Citric Acid Cycle |