**Team Homework**

**What you have:**

* Network documents – Eastern-Massachusetts
  + EMA\_net.tntp
    - Network information: nodes and links
    - Capacity of each link considering HDVs only
      * Unit: vehicle/hour
    - Link length
    - Free-flow travel time (can be used to derive the free-flow speed)
  + EMA\_trips.tntp
    - O-D information
  + README.md
    - Units: length – mile; travel time - hour
* Single-class STA
  + The “userEquilibriumFW’ function in ‘network.py’ for single class UESTA (i.e., the solution to HW3 programming questions)
    - ShortestPath, AllorNothing, FW step size, etc.
  + The cost function in ‘link.py’ for single class UESTA (i.e., the solution to HW2 programming questions)

**What you need to do:**

* Extend the single-class UE STA to single-class SO STA, multi-class SO STA, and multi-class UE STA
  + Either make modifications to the single-class STA package, i.e., the python files
  + Or program updated functions for multi-class STA in your Jupyter notebook
  + You may also need to modify
    - The cost function, step size function, etc.
* Solve multi-class STA problem for all scenarios in your Jupyter notebook
* Perform sensitivity analysis
* Answer questions (a) to (d) in your Jupyter notebook
* Prepare a 15 mins PowerPoint file for you presentation