

## **Math 404 Report#2**

Submit **Matlab** implementations (or equivalent) of the following **Primal-Dual Interior Point** Methods:

1. Central Path with **fixed** step size ( $\alpha$ ) and centering parameter ( $\sigma$ ).
2. Central Path with **adaptive** step size ( $\alpha$ ) and centering parameter ( $\sigma$ ).
3. **Mehrotra** Predictor-Corrector.
  - a. Apply your implementations on at least **three** case studies (you can pick your own or use some of the solved examples in lectures.)
  - b. Provide neat figures for each case study of the following:
    - i. Objective function reduction versus iteration.
    - ii. Center path.
    - iii. Complementary condition.

Compare your results with **Matlab built-in** function that uses **Mehrotra** algorithm.

**Deadline: Tue Dec 14, 2021**