

ISE 5406 - Optimization II

Part 2 of Mini-Projects I & II

Due on Tuesday (05/01) in the beginning of class

Team Members' Name:

- 1.
- 2.
- 3.

Total Possible Points (175 Points)

The objective of this part of the mini-projects is to give you an experience in implementing algorithm(s) discussed in this course for solving real-world applied nonlinear programming problems.

Assignment:

- *Literature Review:* Identify different solvers/libraries available to solve nonlinear programming problems, in particular convex optimization problems. Perform a literature review and discuss about the features of these solvers. **[50 points]**
- *Problem Definition and Methodology Selection:* Clearly describe and formulate at least one problem from part I of each mini-project. Thereafter among the algorithms discussed in class, identify which algorithm your team would like to consider to solve these problems? Discuss why your team made this selection? **[25 points]**
- *Design of Experiments:* Either generate random instances or consider instances available in literature for the selected problems, and utilize one of the above discussed solvers/libraries to solve these problem instances. **[25 points]**
- *Computational Results:* Provide a discussion on the results of your computational experiments and discuss about potential extensions of this mini-projects and/or its application in your ongoing/future research projects. **[50 points]**

Evaluation Criteria.

- **Report.** Each team is required to turn in a well-written typed report (Font: 12 pt Times New Roman; Line spacing: 1.5 or double; One-Inch Left/Right/Top/Bottom Margin). The report should have this page as the cover page, including team members' names and signatures. It is very important to cite references used to prepare this report. The deadline to submit hardcopy of your report is Tuesday (05/01) in the beginning of the class.
- **In-Class Presentation (25 Points).** Each team is required to give a 10-12 minutes presentation in class on Tuesday (05/01). There will be 3 minutes for Q&A at the end of each presentation. Each team has to email me the final slides of the presentation by noon on 30th April. Please appropriately name your file (using last name of each team member).