Course Name and Number: ISDA 609 - Mathematical Modeling Techniques for Data Analytics

Course project description

Option 1:

At the end of each chapter in the textbook, you can find a section titled "Projects". Form a team with at least one other classmate and complete any three projects. It is desirable that the projects selected are from different chapters and use three different mathematical modeling methods. It is also highly desirable that you select one from the first five chapters, one from chapter six to chapter ten, and one from chapter eleven onward. Bonus points will be awarded for projects that go beyond the scope of the initial description. To qualify, please be specific in your final report and final presentation as to the extensions your team implemented.

Option 2:

Select any phenomena or real world problem of your choice, apply three mathematical modeling techniques to the problem, and present your findings clearly in your report. Compare the three methods, if possible.

Option 3:

Select one project from the "projects" section at the end of each chapter. Use the method described in the project, and two additional mathematical modeling methods. Compare the three methods, if possible.

Course project selection

Any of the three options above are valid choices for your project.

Project team

Each team will consist of two members.

Project schedule

1. Form team by end of week 8 (October 18th, 11:59pm EST)
2. Project proposal draft by end of week 9 (<1 page, please address the problem that your team is trying to solve) (October 25th, worth 10% of project grade)
3. Discussion with the instructor to further improve the project proposal (week 10) (Nov 1st, 11:59pm EST)
4. Final project proposal by end of week 11 (<1 page) (Nov 8th, 11:59pm EST, worth 10% of project grade)
5. Project presentation slides due on Dec 10 8:00pm EST (Thursday)
6. Project presentation starts on Dec 10 8:15pm EST (Thursday, worth 30% of project grade together with project presentation slides submission)
7. Final project report (Dec 13th, 11:59pm EST, worth 50% of project grade)

Project presentation

The presentation shall be less than 15 minutes for each team. It will take place on Dec 10th 8:15pm EST through gotomeeting. Details will follow.

Project report

Feel free to explain the problems you are trying to solve in your project final report. It will be great if some of the following questions/issues will be addressed:

- Analysis of the problem.
- The methodology you used.
- Details of the methodology
- The findings from the project.
- Are they different from your initial expectation? If so, is there a suitable explanation?