MIS 5432-001 Business Analytics

Term Project [100 pts.]
(Submit on Blackboard. Due 5/5 5PM)

Select a research paper from the list on the last page of this file and submit a report. The report shall include:

(a) A short description of the application/problem discussed in the paper.
(b) The entire model with a complete definition of the variables. The objective function and the constraints must be explained clearly.
(c) Brief summary of the results, and all Sensitivity Analyses performed in the article.
(d) A discussion/conclusion about what you have learned about the real-world decision making scenario (at least one page on this point).
(e) The list of references.

The report must be written in Microsoft Word (at least 5 pages, excluding figures and references; font: Times New Roman; font size: 12; margins: 1 inch each; line spacing: 1.5 lines; references: APA format). If figures are to be included in the report, please create a page named "Figures" and attach your figures there. List all sources cited in your paper in "References".

You must work with other students in this project and should work in a group of at most 4 students. Bonus points (5%) will be given to groups with good diversity. Each group must elect a group leader and have your group leader email me the names of your group members and the title of the paper selected by your group ASAP. ***Once a paper is selected by a group, the other groups may not select the same paper***. The group leader is also responsible for submitting the report on Blackboard after it is completed. In addition, each group member, including the group leader, should fill in a peer evaluation form and submit it on Blackboard.

This term project accounts for 10% of your final grade. Your grade for the term project is determined by your group report score and your average peer evaluation score given by your teammates, calculated as the following:

Score of your group report × Your average peer evaluation score

Any plagiarism is not allowed. You should not copy/paste from any sources or any student's work. Your essay will be checked by SafeAssign™.

The Fatal Flaw Policy of the College of Business applies to this assignment. Fatal flaws include, but are not limited to:

- misspelled words
- sentence fragments or run-on sentences

- erroneous capitalizations, incorrect punctuation,
- mistakes in verb tense or subject/verb agreement or incorrect word usage
- improper citations
- awkward writing and lack of conformity with assignment format

The Fatal Flaw policy is:

1. The maximum number of flaws is 1 per 125 words.

2. The penalty for the first round of failed papers is to take off up to 15% of the total grade. The paper is returned to the student for rewriting and resubmission. As determined by the instructor, the student will be given adequate time to go to the Writing Center or Writing GA in the College of Business, provide proof from the Writing Center or COB Writing GA that he or she has been assisted with the paper, and resubmit the paper for grading. "Adequate time" should also allow for sufficient time for the instructor to regrade the submission to meet grade submission deadlines.

3. Should the revised paper contain the same number or more of flaws as indicated in #1 above (more than 1 per 125 words), the paper may be assessed up to an additional 15 penalty points off the final grade.

List of papers:

- ✓ Abara, J., 1989. Applying integer linear programming to the fleet assignment problem. *Interfaces, 19*, 20-28.
- ✓ Amiri, A., 2006. Designing a distribution network in a supply chain system: Formulation and efficient solution procedure. *European Journal of Operational Research*, 171(2), 567-576.
- ✓ Bartsch, T., Drexl, A., Kröger, S., 2006. Scheduling the professional soccer leagues of Austria and Germany. *Computers & Operations Research*, 33(7), 1907-1937.
- ✓ Blake, J. T., Donald, J., 2002. Mount Sinai Hospital uses integer programming to allocate operating room time. *Interfaces, 32*, 63-73.
- ✓ Durán, G., Guajardo, M., Miranda, J., Sauré, D., Souyris, S., Weintraub, A., Wolf, R., 2007. Scheduling the Chilean Soccer League by integer programming. *Interfaces, 37*, 539-552.
- ✓ Dyer, J. S., Mulvey, J. M., 1976. An integrated optimization/information system for academic departmental planning. *Management Science*, 22(12), 1332-1341.
- ✓ Gosselin, K., Truchon, M., 1986. Allocation of classrooms by linear programming. *The Journal of the Operational Research Society, 37*, 561-569.
- ✓ Gunnarsson, H., Rönnqvist, M., Carlsson, D., 2006. A combined terminal location and ship routing problem. *Journal of the Operational Research Society*, 57(8), 928-938.
- ✓ Melkote, S., Daskin, M. S., 2001. Capacitated facility location/network design problems. *European Journal of Operational Research*, 129(3), 481-495
- ✓ Rexing, B., Barnhart, C., Kniker, T., Jarrah, A., Krishnamurthy, N., 2000. Airline fleet assignment with time windows*. Transportation Science*, 34(1), 1-20
- ✓ Sarkis, J., Talluri, S., 2004. Evaluating and selecting e-commerce software and communication systems for a supply chain. *European Journal of Operational Research*, 159(2), 318-329.
- ✓ Smith, J. C., Fraticelli, B. M. P., Rainwater, C., 2006. A bracket assignment problem for the National Collegiate Athletic Association Men's Basketball Tournament. *International Transactions in Operational Research, 13*, 253-271.
- ✓ Stinnett, A. A., Paltiel, A. D., 1996. Mathematical programming for the efficient allocation of health care resources. *Journal of Health Economics, 15*, 641-653.
- ✓ Tzeng, G., Cheng, H., Huang, T. D., 2007. Mutli-objective optimal planning for designing relief delivery systems. *Transportation Research Part E, 43*, 673-686.