MIE 520 TERM PROJECT ASSIGNMENT

PURPOSE:

Group assignment: Limit of three people to a group

Select an operating system (or subsystem) for which the effectiveness of operating policies is a function of one (or more) random phenomenon. For example:

a) Collect data on the operations of the system so that you can attempt to obtain estimates of the probability distributions of the random variables of interest. You should obtain sufficient data to permit goodness of fit tests and also to determine if different distributions are necessary for time of day or day of week – if this is not possible, then the models you develop should be limited to the time-frame of your observations.

b) Develop a survey or a set of interview questions on a topic of your choice, selecting a sample, and administering your survey instrument. The responses will be summarized and a report written describing what you did and what you found out.

c) Alternatively, you might want to design an experiment (riding your bicycle (or driving your car) where you experiment with different parameter settings of the bicycle (e.g. up-hill vs. down hill, seat height, handle bar locations, etc.), or some other experiment of interest). Again, you would gather data, analyze it, and write up the results.

Otherwise, many possible systems on campus or off-campus could lend themselves to possible experimental study. You need to think over what you want to do and discuss with myself and the t.a.

As a first step in the project, I would like a one page typewritten description of the project proposed by February 18th, 2004. This proposal will be evaluated as part of your term project assignment.

REQUIREMENTS:

Your final typewritten project report should include the following sections (limited to an overall length of ten pages, not including appendices):

• I. Introduction (Background) – a clear description of the system under study and the purpose of your study. What are you attempting to accomplish and what measures of effectiveness are to be used?

• II. Data collection and analysis – what data were collected and how? What analyses were performed? The raw data should be organized and tabulated in an appendix.

• III. Development of optimal (if possible) or good operating policies – how would you proceed to obtain improved operating policies for the system? Would they be optimal?

• IV. Conclusions and recommendations – what conclusions can you make from your analyses? What do you recommend be done – to improve or optimize the system and/or for future work?