MIE 390M 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 variables(s).

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.

Remember that this is a course where a collection or sequence of random variables is of paramount importance and we wish to characterize this collection or sequence of random variables, develop appropriate models of this process, and seek, if possible, optimal operating policies or solutions for improving this system. It is strongly encouraged that numerical computations to support your analysis and your models optimal operating policies be utilized to the fullest extent possible.

Your final typewritten project report should include the following sections:

• 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 analysis was 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? Demonstration of numerical calculations to support your recommendations.
• IV. Conclusions and recommendations – what conclusions can you make from your analysis? What do you recommend be done – to improve the system and/or for future work?

REQUIREMENTS:

As a first step in the project, I would like a one page typewritten description of the project proposed by February 16th, 2005. This proposal will be evaluated as part of your term project assignment.

You will be evaluated based upon the following criteria:

o Creativity and originality of your problem and its formulation
o Thoroughness and completeness of your results;
o Correctness of your results;
o Communication, Clarity, and Quality of your overall presentation.