

# CEE 5390 - Modeling and Simulation in CEE

## Spring Fling

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### Question 1

Using the queue trace as input develop a simulation using the following three methods:

- Use the list of arrival times and service times as trace that will drive your simulation
- Fit the inter-arrival times and the service times to an exponential distribution [Calculate values of  $\lambda$  and  $\mu$  from the data] and use the distributions to drive your simulation
- Develop empirical distributions for the arrival times and the service times and use them to drive the simulation

For each of the above cases identify and compare steady state values of standard statistical counters for a M/M/1 queuing system.

### Question 2

Develop a proposal for your class project (about 2 pages). Please address the following:

- Context and statement of problem
- Research questions and hypothesis
- Modeling methods to be applied [Note:Not to be confused with optimization methods]
- Model analysis approaches to be used
- Hypothesis testing plan
- Expected results
- Significance of work

Format guidelines: please use ACM/IEEE conference style (LaTeX .cls file and MS Word template file available from me). This proposal will be part of your final paper submission and presentation.