**IT308 OPERATING SYSTEMS**

**LABORATORY WORK -- PART I**

Some MATLAB programs and functions related to the modeling and simulation of a single-server queuing system are given to you in the lecture folder. The working of these programs has been explained to you in class.

Laboratory work (Part I) expected from you is as follows:

1. By trying out relevant MATLAB operators and functions from the command lines, learn about how MATLAB arrays work.

2. Study the programs and functions given to you. Run the programs with different settings of parameters such as arrival rate, preemption, balking, etc. But in all cases leave the arrival rate and departure rate both much smaller than 1 (e.g. 0.05, 0.1 … 0.2 -- but not more) because that is an assumption of the model. Since T is arbitrary, this is not a serious limitation.

3. Correlate program outputs with input parameters. It is expected that you should be able to explain the correlations.

4. Add one or more of the following features to the programs:

* Maintaining process ID and other attributes in the large integer which defines each process
* Each process runs for its indicated run time (number of time slots)
* Priority classes of processes
* Preempted process goes back to end of queue
* Different types of scheduling
* Measuring the response time of processes by recording their entry and exit times
* Multiple processors
* A kind of ‘blocked state’ for processes
* ….. plus (most welcome) your own ideas!

5. For the options such as those listed above, develop a way to decimal-pack relevant process properties into the single integer which gets into the queue.

**DO AS MUCH AS YOU CAN ON YOUR OWN – DO NOT COPY FROM OTHERS. YOUR UNDERSTANDING WILL BE ASSESSED. COPIERS WILL BE HEAVILY PENALIZED.**