



LEBANESE AMERICAN UNIVERSITY
Electrical and Computer Engineering Dept

COE 555/755
Queueing Theory

Spring 2019
W. FAWAZ

Simulation Project II

Due Date: Tuesday March 26th, 2019

Reading Assignments

Read **Chapters 2 and 3** of the simulation book.

Problem I

Use the statistical tests described in section 2.7 of the second chapter of the simulation book to test a random number generator available on your computer. Feel free to use any programming language that you are comfortable with.

Problem II

This problem is related to chapters 1 and 3 of the simulation book.

1. Write a computer program to simulate the machine interference problem as described in section 1.3.1 of the simulation book. Recall that you did this simulation by hand in the first simulation project. In your simulator, each time an event occurs, print out a line of output to show the current values of the clocks and the other status parameters (as in the hand simulation). Run your simulation program until the master clock is equal to 20. Check by hand whether the simulation advances from event to event properly and whether it updates the clocks and the other status parameters correctly.
2. Change the simulation program you developed for (1) so that the operational time and repair time of a machine are exponentially distributed with the same means as before. Make sure that your clocks are defined as real variables. Run the simulation model as before. Each time an event occurs, print out a line of output to show the new value of the clocks and the other relevant parameters.

Make sure to include in your solution a snapshot of the output produced by your simulators as well as a (6-10 min long) video demo walking us through your codes and illustrating the way your code should be executed.