**Assignment**

**System Types and Scheduling Assignment**

**ISM-6436 Operations & Supply Chain Processes**

1. Consult the data in Problem 10 of Chapter 22 of your text, p. 611. Complete the following:
2. Construct sequences using the Shortest Processing Time, Earliest Due Date, and Slack Time rules.
3. Construct simulation models for each of these sequences. Use triangular distributions for the simulated processing times for the jobs with the midpoint of the distribution being the given time for each job and the endpoints of the distribution being -20% and +20% of the midpoint for each job.
4. For each simulation model execute 1000 iterations and collect results on Average Job Completion (Flow) Time, Average Overall Lateness, and Average Lateness of Late Jobs. Using this information and your best judgment state which of the three simulation rules performs best with these jobs.
5. Consult the data in Problem 12 of Chapter 22 of your text, p. 612. Complete the following:
6. Construct a sequence for all 7 jobs through both work centers using Johnson’s Rule.
7. Construct a simulation for this sequence. Use triangular distributions for the simulated processing times for each job through each of the two stages of processing. Set the midpoints of those distributions as the given processing times for the jobs and the endpoints as -10% and +10% of the midpoints.
8. Execute 1000 iterations. You want to quote to your boss a deadline for completing all 7 jobs through both work centers. You would like to quote a deadline which you have a 95% chance of meeting and only a 5% chance of exceeding. According to your simulations what deadline quote should you give your boss?

**Instructions:** Your deliverable will be a functioning Excel spreadsheet with each problem on a separate worksheet page. The simulation models will be enabled with @Risk functions. The deliverable will be uploaded to Canvas by the assignment deadline stated on the Lesson Plan. Include a cover page for your file which lists your name and the names of any other group members deserving credit for this work. Group sizes may be no larger than 4, and only one group member need submit the final deliverable.