**6436 Aggregate Planning Assignment**

Consult the information given in Problem 10 on p. 508 of your text. The subject is DAT, Inc. Add the following:

* Hiring cost: $1600 per employee
* Firing cost: $800 per employee
* Labor cost: $11.50 per hour
* Number of Employees: 30 as of January 1
* Materials Cost per Unit: $15

Using the information provided:

1. Develop a level aggregate plan and calculate total annual cost of that plan.
2. Develop a chase aggregate plan and calculate total annual cost of that plan.
3. Develop a blended or “cut and try” aggregate plan and calculate total annual cost of that plan. Try to get the cost of this plan below that of the plans you developed in parts a and b of this problem.
4. Working with the blended plan you developed in part c, by how much does the total annual cost of that plan change if i) the productive work day is reduced to a more realistic 6.5 hours and ii) productivity is improved such that the labor time required per unit is reduced to 45 minutes?
5. Return to your level aggregate plan built in Part a of this problem, but with the work day length and productivity specified in Part d. You now wish to employ simulation to study the stability of your total annual cost estimate for this plan. You will simulate random numbers for each month’s demand using the triangular distribution using the original monthly forecast as a base. The center of the triangular distribution will be the month’s original forecast, the lower bound will be 85% of that forecast, and the upper bound will be 115% of the forecast. Thus for January your @Risk input distribution statement might be of the form RiskTriang(2250,2500,2750). Make certain no non-integer simulated demand values are used. Run for 1000 simulated years and report the mean and standard deviation of the resulting total annual cost.

Note: Assume any shortages are lost demand and cannot be recovered in a later period.

**Instructions:** Your deliverable will be a functioning Excel spreadsheet with each required plan or simulation shown on a separate worksheet page. 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.