Assignments NO: 08 & 09

Subjects: Mathematical Programming and Linear Programming Using the Simplex Method

Due Date: Dec. 24, 2015

1. Study textbook problem P15.2 [**page 410**] then formulate the problem as an **LP** problem. Setup the Simplex *Tableau* and complete the solution to obtain the *optimal* solution.

2. Solve parts *a* and *b* of textbook problem P15.3. Then solve part c using *only* an **EXCEL** spreadsheet. Compare your results for the three parts *a-c*.

The following is a BONUS problem with a value equivalent to one homework assignment.

3. **Read similar design case-studies** outlined in Chapter 16 of your textbook then study the textbook problem P16.16 (page 431). The problem is for a column buckling, and is a typical Nonlinear Programming (NLP) problem. *Formulate* the problem and *solve* it (*using* an **EXCEL** spreadsheet) for cost minimization assuming that the weight minimization is directly proportional to volume minimization with material-density ρ being the proportionality constant.