Project 2 IMSE 680

You work for a consulting firm and have been assigned to work for Steelco, which manufactures I beams, nails and rebarb. You are to help them develop an optimized work schedule for the plant over the next 8 weeks. Each week, you can process up to 500 tons of steel. Steel prices are currently $500 a ton.

Each ton of nails that is produced is sold for $1000, a ton of rebarb is sold for $750 and a ton of I beams are sold for $1500. Each ton of product held over in inventory from one week to the next costs the company $40 per ton. If demand is not met, then there is a penalty cost of $100 per ton of nails, $300 per ton of rebarb and $1000 per ton of I beams. In such a situation the item is placed on back order and the order must be shipped to the customer at some future time. The demand for each product over the next 8 weeks is given in Table 1. Assume that you have nothing in inventory or items that are backordered and that you must end at the end of the 8th week with the same condition.

As is standard policy for your consulting firm, you need to prepare a one page executive summary, which should is intended for the CEO of Steelco and is designed to him convince him that your solution is better than the status quo. Additionally, you must prepare a technical summary (your model should be included in the appendix), which is intended for an Industrial Engineer at either your company or Steelco to validate your methodologies. These reports need to be well written and formatted. Over the same period last year, the company made 2.5 million.

Grading 25% Executive Summary, 25% Technical Report, 50% to the correctness of your solution.

Table 1

Weeks	Nail Tons Demand	Rebarb tons Demand	IBeams tons demand
1	10	240	270
2	10	30	240
3	70	90	310
4	140	80	160
5	200	140	360
6	200	90	370
7	100	90	200
8	170	100	310