CEE 4333 - Estimating Planning and Control

Fall 2005
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Homework 4
Homework due: 10/07/05, in my office at 5pm

September 29, 2005

Problem 1

15 Points

Paulson contractors is looking for an estimate of the fixed costs that will be associated with a new peice of equipment. The equipment delivered price, which includes the list price, freight costs, taxes and setup costs is \$150,000. The useful life of the equipment is estimated at 5 years. Salvage value is estimated at 20% of delivered cost. The expected inflation rate is 4% per annum, taxes and insurance is 5% per annum and the market rate of return is 12%. Estimate the hourly fixed costs for each year given that the equipment will be operated at 1800 hours per year.

Also given the following information, calculate the hourly variable costs for each year of the equipment's life time:

- Operator's basic wage is \$20 per hour increasing at a rate of 3% per year.
- Markup related to taxes on labor is estimated at 40% of basic wages
- The flywheel power of the diesel engine is 400HP
- The cost of diesel fuel is \$0.70 per gallon and is expected to rise increase 2% per year
- Use information about operating factors, crank case capacity and unit costs of oil, fuel and grease from text book problem 5.5

Problem 2

10 Points

A contractor has been awarded a 100,000CY earthmoving job. A decision needs to be made about whether he should use his own 4-year old earth moving equipment, leasing new equipment or sub-contracting the entire operation. Using the following information advise him on the best decision.

- He has estimated that the fixed and variable costs associated with his own equipment are \$20 per hour and \$55 per hour respectively. The production rate for his equipment is 80CY per hour.

- The leasing rate for the new equipment is \$60 per hour and the variable costs is estimated at \$25 per hour with a production rate of 100CY per hour.
- A sub who gaurantees a production rate of 110CY per hour is willing to perform the entire operation for \$90,000.
- Replacement costs of his equipment is \$40 per hour in fixed costs and \$45 per hour in variable costs with an expected production rate of 100CY per hour.

What is your suggestion?

Problem 3

Make a brief summary of what you learnt from Mr. Sung Lee's presentation in class. Specifically emphasize on slides 26-36. (Not more than 100 words. Be concise and to the point). *5 Points*

Problem 4

Text book problem 5.1. *5 Points*