IENG 450 INDUSTRIAL MANAGEMENT
PROBLEM SET I

1. State the concept of engineering by giving examples.

2. Describe engineering as a profession.

3. List at least five branches of engineering.

4. What does "management" means?

5. What are the levels of management? State their duties.

6. List the functions of management. Describe each function in brief.

7. What are the ancient civilizations examples that required engineering and management applications?

8. What was the largest industrial plant of the medieval world? List its industrial management applications.

9. What were the contributions of the following people to <u>Scientific Management</u>?

10. What were the contributions of the following people to <u>Administrative Management</u>?

11. Describe the Hawthorne Effect.

12. Define the Abilene Paradox

13. What is the importance of planning?

14. State the steps in Strategic Planning, and define them briefly.

15. Discuss qualitative forecasting methods in brief.

16. Suppose that you are going to establish a social friendship network, such as Facebook and Twitter. Write down your mission and vision statements. Prepare a SWOT analysis for your new network.

17. Sales of a particular product (in thousands of dollars) for the years 1997 through 2000 have been 48, 64, 67 and 83 respectively.
    a) What sales would you predict for 2001, using a simple four-year moving average?
    b) What sales would you predict for 2001, using a weighted moving average with weights of 0.50 for the immediate preceding year and 0.3, 0.15 and 0.05 for the three years before that?

18. Using exponential smoothing with a weight α of 0.06 on actual values:
    a) If sales are $45,000 and $50,000 for 1998 and 1999, what would you forecast for 2000? (The first forecast is equal to the actual value of the preceding year)
    b) Given this forecast and actual 2000 sales of $53,000, what would you then forecast for 20001?

19. In question (17), taking actual 1997 sales of $48,000 as the forecast for 1998, what sales would you forecast for 1999, 2000 and 2001 using exponential smoothing an a weight α on the actual values of
    a) 0.4,
    b) 0.8.

20. In question (17), what sales would you forecast for 2001, using the simple regression method?