Lecture 4. 2 September 2004

- Review of formulations discussed so far:
  - Continuous variable formulation using only design variables
  - Continuous variable formulation using intermediate variables and design variables
  - Continuous variable formulation having implicit functions of the design variables

- Discrete variable optimization formulations; discuss 6 types of formulations from Section 15.1; examples in Section 15.8 and 16.3.

- The reason we have discussed different types of formulations is that the students should be able to formulate practical design problems as optimization problems using all kinds of variables and functions.

- **Graphical optimization concepts** - discuss geometrical concepts with Profit Maximization example; plotting of constraints, identification of feasible region. Plotting of cost function contours and identification of an optimum.

- **Terminology**: active, inactive, violated constraints; constraint set; cost function contours.

- Read: Sections 15.1, 15.8, 16.3 and Chapter 3.

- Project statement is due today.