AOE/ESM 4084 "Engineering Design Optimization"
Review: Fall 2000

- ● Introduction to Basic Concepts (Entire Chapter 1)

  - ●Analysis versus design and basic steps of a design process

  - ●Mathematical formulation of an optimization problem

  - ●Graphical concepts and solution of optimization problem graphically

  - ●Multicriteria optimization problems (not in the book)

  - ●Mathematical definitions of Grad., Hess., Taylor Ser., etc

  - ●Fundamentals of optimality conditions (8-2.1 and 8-2.2)

  - ●Kuhn Tucker Conditions (8-2.3)

  - ●Post optimality analysis (not in the book)

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- Linear and Sequential Linear Programming (Chapters 4 and 6)
    - Standard Linear Programming (4-1,2,3)
    - Possible Solutions (4-3)
    - NOT RESPONSIBLE from Simplex (4-4)
    - Sequential Linear Programming (6-4)
    - Move limits strategy (6-4)
    - The Method of Centers (6-5): Mandatory for GRAD Students, Optional for Undergrad

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- 1-D Optimization (Chapter 2-1,2,3,4)
    - Random search (3-2.1 and 6-2)
    - Bracketing the minimum (2-4), (exclude 2-4.1)
    - Polynomial Approximations (2-2), (exclude 2-2.2)
    - Golden Section Search (2-3)
    - General strategy (2-6), (exclude 2-6.2 and 2-6.3)