CE 451: SYSTEMS ANALYSIS FOR CIVIL ENGG

- INTRODUCTION
- OPTIMIZATION
  - PROBLEM FORMULATION
  - TRADITIONAL TECHNIQUES
    - LAGRANGEAN
    - KUHN-TUCKER
    - MARGINAL ANALYSIS
    - LINEAR PROGRAMMING
    - INTEGER PROGRAMMING
    - SENSITIVITY ANALYSIS
  - NON-TRADITIONAL TECHNIQUES
  - CASE STUDIES
    - TRUSS DESIGN
    - TRANSIT SCHEDULING
    - OPEN CHANNELS
    - ENVIRONMENTAL ENGG. RELATED
    - GEOTECH RELATED
- DECISION THEORY
  - REVIEW OF PROBABILITY
  - DECISIONS UNDER RISK
  - DECISIONS UNDER UNCERTAINTY
- PROJECT SCHEDULING
  - PERT AND CRITICAL PATH DETERMINATION
  - TIME CHART AND RESOURCE LEVELING
- OTHER TOPICS
  - STATISTICAL MODELING
  - PARAMETER ESTIMATION
  - HYPOTHESIS TESTING

SUGGESTED READING:

HAMDY TAHA: OPERATIONS RESEARCH