I SY E 516, Introduction to Decision Analysis

2. Credits : 3    Contact Hours : 2.5

3. Textbook and Materials : Making Hard Decisions; Clemen; 2; 1997
Smart Choices; Hammond et al.; 1st edition; 2002

a. Other Supplemental Materials : None

Specific Course Information :

a. Brief description of the content of the course (Course Catalog Description) : Overview of modeling techniques and methods used in decision analysis, including multiattribute utility models, decision trees, and Bayesian models. Psychological components of decision making are discussed. Elicitation techniques for model building are emphasized. Practical applications through real world model building are described and conducted.

b. Pre-requisites or Co-requisites : tat 224

c. This is a Elective course.

Specific Goals for the Course :

a. Course Outcomes :

b. ABET Student Learning Outcomes :

   (a) Ability to apply mathematics, science and engineering principles.
   (b) Ability to design and conduct experiments, analyze and interpret data.
   (c) Ability to design a system, component, or process to meet desired needs.
   (d) Ability to function on multidisciplinary teams.
   (e) Ability to identify, formulate and solve engineering problems.
   (f) Understanding of professional and ethical responsibility.
(g) Ability to communicate effectively.
(h) The broad education necessary to understand the impact of engineering solutions in a global and societal context.
(i) Recognition of the need for and an ability to engage in life-long learning.
(j) Knowledge of contemporary issues.
(k) Ability to use the techniques, skills and modern engineering tools necessary for engineering practice.

- **Brief List of Topics to be Covered**: KAIZEN: Concepts & Workshops, Discussion of Class Project, KAIZEN by TQC/TQM, Basic Principles of Problem Solving & PDCA, Management and Planning Tools, Affinity Diagrams (AD) & Workshop, Interrelationship Digraph (ID) & Workshop, Tree Diagram & Workshop