

SYSTEMS DESIGN ENGINEERING

Multiple Criteria Decision Analysis

SYDE 730 - Topic 5

Spring

Reading Course: (one student)

Techniques and methodologies will be studied for comparing alternative solutions to an engineering problem, usually termed actions. These solutions, or actions, are generally evaluated using several criteria, which may be qualitative or quantitative in nature. Keeney's Value-Focused Thinking approach to the creative specification of criteria and alternatives is to be examined. Techniques are to be investigated for screening out clearly inferior actions, especially when the final choice is to consist of a combination of individual actions, when it may be necessary to take dependence among individual alternatives and criteria into account. Additional procedures for comparing and ranking alternative solutions may include Data Envelopment Analysis, the Analytic Hierarchy Process, Electre, and Smart Choices.

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