

EE6204 SYSTEMS ANALYSIS

Acad Unit: 3.0
Prerequisite: Nil
Effective: Acad Year 2000-2001
Last update: 24 February 2000

OBJECTIVE

Optimization is used in those activities in which the goal is to achieve an objective. Choosing a proper optimization algorithm requires a knowledge about the principles of different optimization techniques. The primary objective of this course is to provide an introduction to mathematical programming and probabilistic methods.

DESIRED OUTCOME

This course will help engineers to learn and to analyze the operation of complex industrial processes in a plant through the use of these optimization techniques and computer simulation.

OTHER RELEVANT INFORMATION

The mathematical treatment in this course is kept at a relatively elementary level. An elementary knowledge of matrix algebra, calculus and probability theory would be sufficient for understanding most of the materials in the course.

CONTENT

Linear, dynamic and integer programming. Random processes. Queuing models. Optimization techniques. Markov decision process.

ASSESSMENT SCHEME

Continuous Assessment	20%
Final Examination	80%

TEXTBOOK

1. Taha H. A., Operations Research: an Introduction, 7th Edition, Prentice-Hall, 2003.

REFERENCES

1. Winston W.L., Introduction to Mathematical Programming: Applications and Algorithms, 4th Edition, Brooks Cole, 2003.
2. D. J. White, Markov Decision Processes, John Wiley, New York, 1997.