Optimization 2
(for FERMers)

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Course outline

Optimization 2

1. Network Optimization models
2. Transportation problems
3. Multi-objective linear programming
4. Introduction to stochastic programming

The content includes 2 main parts:

- Part I: Applied Linear Programming
- Part II: Introduction to multi-objective linear and stochastic Programming

Text book

- **F. S. Hillier, G. J. Lieberman, Introduction to Operations Research, McGraw – Hill, 2001.**
- **H.A. Taha, Operations Research: An introduction, Pearson Printice Hall, NJ, 2007.**
- **M. Sakawa, H. Yani, I. Nishizaki, Linear and multiobjective programming with fuzzy stochastic extension. Springer, New York, 2013.**

Other references

- D. T. Luc, Multiobjective linear programming - An Introduction. Springer, 2016.
- J. R. Birge, F. Louveaux, Introduction to Stochastic Programming, 2nd ed. Springer, 2011

Course objectives

- To provide the students with the main ideas and techniques of Applied Linear programming and basic knowledge of multi-objective linear programming.
- To develop skills in mathematical modeling and problem solving.
- To provide an understanding of the practical meaning and applications of these ideas and techniques, through practical examples drawn from many areas of engineering, life sciences, management, and finance.

Course objectives (cont’d)

- To establish confidence and fluency in discussing mathematics in English.
- To develop abilities of thinking reasonably, of realizing new problems/questions and answer/solve/prove them under some new conditions arising in practice.

What do we want our learners to look like?
What skills do we want them to have?

Successful learners

- analytical
- link makers
- effective memorisers
- structure/organise ideas
- capable communicators
- enquiring

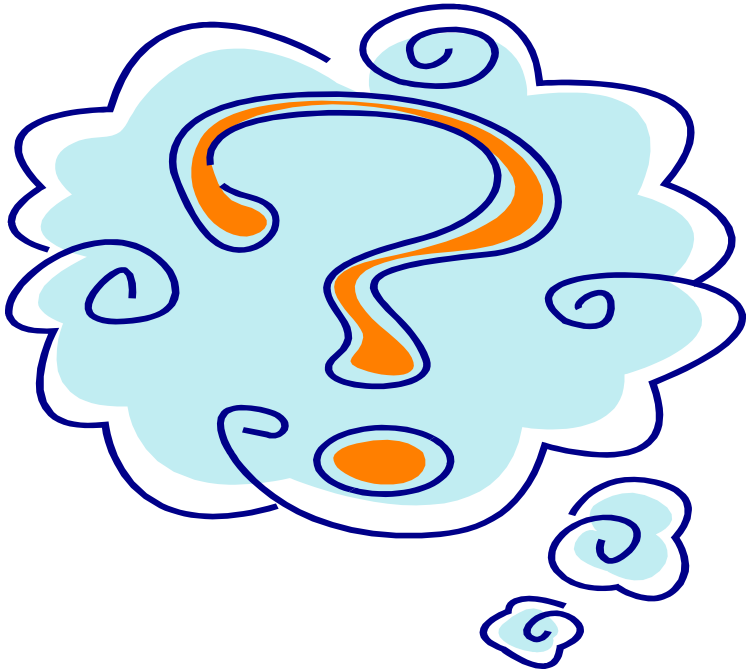
Confident individuals

- independent
- risk takers
- able to self-assess
- confident performers
- able to cope with unpredictable
- creative thinkers

Responsible citizens

- good listeners
- interested in other cultures
- tolerant
- collaborative group workers

What is Calculus?



welcome to Optimization 2!