Module 4: Linear Programming Applications

Learning Objectives

In module 3, we discussed about how to represent a Linear Programming (LP) model in various forms and also some of the most popular methods like simplex method to solve a LP problem (LPP). In this module, an introduction to solve a LPP using software will be given. This will help the reader to solve large LPP more easily avoiding the manual computations in the form of simplex tables. Using this software, a LPP can be solved using graphical method or simplex method.

This will be followed by the introduction of some bench mark problems that use LP for solution. These include the classic transportation problem, assignment problem and some of the examples from structural and water resources fields.

At the end of the module the reader will be able to

1. Use the software Mathematical Models for Optimization (MMO) and its application to solve a LPP

2. Overview of MATLAB Optimization toolbox for solving LPP

3. Formulate and solve a classic transportation problem

4. Formulate and solve an assignment problem

5. Formulate and solve various structural and water resources problems