# ASSIGNMENT 1

## 1. ASSIGNMENT SCOPE

The *purpose* of the Assignment is to demonstrate on self-invented case using any *two* optimization methods:

- LP programming continuous variables
- LP programming integer, binary or mixed variables
- Non-LP and evolutionary models

The complete Assignment consists of two files:

A. a Word or PowerPoint file which contains:
   - written *statement* of the problem (your invention of problem definition is needed)
   - the *mathematical formulation* of the problem (objective function, decision variables, constraints)
   - *description* of the obtained *results* and their meaning/interpretation
   - additional *comments* specific to a given problem:
     - if there is something interesting about the algorithm or the size of the problem, write which algorithm was used, how long did it take to solve, how many constraints, decision variables, what was done in order to speed up the algorithm, etc.),
     - some comments for sensitivity analysis if was applicable,
     - could be - any personal experience gathered during assignment preparation.

B. a relevant Excel file with solution and sensitivity calculation (if applicable)
   - Excel file with solver solution

The Assignment 1 should contain an *original* optimization problem (invented or taken from practice).

There is no specific constraint on the size of Word or PowerPoint file. Description should be comprehensive enough to understand solution.

## 2. ASSESSMENT CRITERIA

Maximal score for Assignment 1 – 16 points
Assignment 1 passing *threshold* – 60% (9 points)
Assessment criteria:

- *Completeness* (project contains all necessary elements) – 40% points
- *Originality* – presented case contains original optimization problem – 30% points
- Editorial *correctness* and *attractiveness* of presentation – 30% points

Assignment 1 can be completed in a *team* (no more than 3 people)
Assignment 1 should be defended during classes or consultation time