PROPOSED COURSES

Instructor:
Prof. Vassilis Kostoglou
Alexander Technological Institute of Thessaloniki, Greece
Department of Information Technology
E-mail: vkostogl@it.teithe.gr
URL: www.it.teithe.gr/~vkostogl/en

Title of course 1: "Quantitative analysis"

Duration: 30 hours – April 2016

1st part: Linear programming (LP)

Contents:
1. Introduction to LP
2. The LP mathematical model
3. Formulation of LP problems
4. The Simplex method
5. Solving LP problems
6. Graphical solution
7. Formulation - Solution of case studies
8. Use of specialized software for tackling LP problems

Duration: 18 hours

2nd part: Transportation and transshipment problems

Contents:
1. Introduction - Main variables
2. The transportation mathematical model - Properties
3. Formulation of transportation problems
4. Finding an initial solution
5. Solving transportation problems
6. Tackling special cases
7. Formulation - Solution of case studies
8. The transshipment problem
9. Use of specialized software for solving transportation and transshipment problems

Duration: 12 hours

Type: theoretical (in classroom) – practical (in laboratory)

Subject 2: "Inventory and production control"

Duration: 30 hours – June 2016

1st part: Inventory control

Contents:

1. Introduction - The importance of inventory
2. Cost elements
3. Deterministic inventory control systems
    - 3.1 Main variables
    - 3.2 Demand satisfaction without delay - Economic order quantity
    - 3.3 Demand satisfaction with delay
    - 3.4 Demand satisfaction from production
    - 3.5 Inventories of many materials with constraints
    - 3.6 Variable unit value of stock
4. Solution of inventory control case studies and problems

Duration: 15 hours

2nd part: Production control

Contents:

1. The assignment problem
    - 1.1 Mathematical model
    - 1.2 Solution methodology
    - 1.3 Special cases
2. Production scheduling
3. Production line balancing
    - 3.1 Variables and definitions
    - 3.2 Mathematical formulation
    - 3.3 Methodologies: Approximate methodology - Line of balance methodology
    - 3.4 Production line scheduling and costing

Duration: 15 hours

Type: theoretical (in classroom)