

Outils & Méthodes

Decision support

IDENTIFICATION

CODE : MS2I-DMO
ECTS : 1.0

HOURS

Lectures : 0.0 h
Seminars : 16.0 h
Laboratory : 0.0 h
Project : 0.0 h
Teacher-student
contact : 16.0 h
Personal work : 12.0 h
Total : 28.0 h

ASSESSMENT METHOD

3 exams of 2 hours
1 project

TEACHING AIDS

1 Handout
Microsoft EXCEL solver

TEACHING LANGUAGE

French

CONTACT

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AIMS

This teaching takes place over the period December till March

COMPETENCES :

The teaching aim is to learn student how to model and solve management problems dealing with human and material resources on a medium or short term horizon. One course focuses on linear programming and mono-criteria combinatorial problems taking into account various constraints and using a solver.

CONTENT

Modelling and linear programming [E7] :

- Linear Programming [LP]: LP model, Simplex algorithm, Duality, Sensitivity analysis. Construction of a LP model: variables with constraints and objective function, optimum, unbounded variables, networks and flow structures ...
- Production planning (labworks) : Demand satisfaction, stocks and shortages, bill of materials and production organisations, Human and material resources, Microsoft Excel solver.

BIBLIOGRAPHY

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- MONTGOMERY D.C. Introduction to Statistical Quality Control 4ed. NY John Wiley et Son 2001
- PILLET M., Appliquer la maîtrise statistique des procédés MSP/SPC, Editions d'Organisations, 2002.
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- BREYFOGLE F. W. , Implementing Six Sigma, Wiley Interscience, 1999
- GEORGE M. L., Lean Six Sigma, Mc Graw Hill, 2002.
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- LVINA Y., LOUBERE J-M., Maintenance et travaux neufs, Les éditions d'organisation, Paris, 1994, ISBN : 2 7081 1697 5
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- A. VILLEMEUR, Sûreté de Fonctionnement des Systèmes Industriels, Edt. Eyrolles, 1988
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PRE-REQUISITE

- Discrete mathematics,
- Probability and Statistics,
- Functionnal analysis and decomposing modelisation,
- Data base and information management.

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