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Business Analytics (5MI2003)

Filières concernées	Nombre d'heures	Validation	Crédits ECTS
Master en développement international des affaires	**Cours: 4 ph**	**Voir ci-dessous**	6
Master en finance	**Cours: 4 ph**	**Voir ci-dessous**	6
Master of Science en innovation	**Cours: 4 ph**	**Voir ci-dessous**	6

ph=période hebdomadaire, pg=période globale, j=jour, dj=demi-jour, h=heure, min=minute

Période d'enseignement:

- Semestre Printemps

Equipe enseignante

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e-mail:paul.cotofrei@unine.ch

Contenu

The course starts with an overview of the main concepts used in business analytics (decision-making process, systems and models). The first part of the course emphasizes the quantitative approaches for decision making. The main models used in decision analysis (influence diagrams, decision trees) are presented in both contexts - without and with probabilities, together with the two decision-making analysis: risk analysis and sensitivity analysis. Several models applied for multicriteria decision problems (as analytic hierarchy process) are also described. The second part of the course deeply analyses one of the most known and applied quantitative model in business analytic : the linear programming (topics - optimal solutions, sensitivity analysis, binary variables, case applications in marketing, finance, transportation, network distribution, game theory, project scheduling).

Forme de l'évaluation

- Homework : 40% of final grade.
- Written exam (2 hours) during the last week of semester: 60% of final grade.
- Resit: 2 hours written exam during autumn session: 100% of final grade.
- Allowed documents during exams: cours slides with annotations.
- During offline exams, connected devices are not permitted. In case of violation of this rule, the students are in a situation of fraud and the unauthorized items will be removed. The exam could be deemed as failed.

Documentation

- An introduction to Management Science - Quantitative approaches to decision making, by Anderson, Sweeney, Williams and Martin, Thompson South-Western, 12th/13th edition
- Data Analysis and Decision Making, by S. Albright, W. Winston and C. Zappe, Cengage Learning, 4th edition
- Essentials of Business Analytics, by J. Camm, J. Cochran, M. Fry & all, Cengage Learning, 2015

Pré-requis

The course belongs to the module "Business Analytics / Data Science". Please check the requirements related to this module in your master program

Objectifs d'apprentissage

Au terme de la formation l'étudiant-e doit être capable de :

- Identify the parameters (objective function and constraints) of a linear program
- Analyse the consequences of a model's parameter change
- Solve a linear programming model for a decision problem
- Explain the phases of the decision-making process
- Evaluate the limits of the methods related to multicriteria decision analysis
- Develop an optimal strategy faced with several decision alternatives and uncertainty
- Interpret the outputs of a sensibility analysis applied on a linear model
- Explain the quantitative models and methodologies applied in real word case studies

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Compétences transférables

- Discuss complex issues and interactions
- Communicate results orally
- Apply knowledge to new situations
- Carry out critical and evidence-based analyses