EPFL

MGT-430   **Quantitative systems modeling techniques**

Zufferey Nicolas

Cursus	Sem.	Type
Management, Technology and Entrepreneurship minor	E	Opt.
Managmt, tech et entr.	MA2, MA4	Opt.

Language of teaching	English
Credits	4
Session	Summer
Semester	Spring
Exam	During the semester
Workload	120h
Weeks	14
Hours	**3 weekly**
Courses	3 weekly
Number of positions	

Summary

This course is dedicated to various modelling tools, optimization methods and decision analysis techniques, with a specific focus on logistics.

Content

Introduction to operations research and graph coloring, linear programming, flow theory, graph covering models (with applications in network design, distribution and transportation), distribution, heuristic methods and vehicle routing problems, facility location problems, job shop, facility layout, balancing an assembly line, open shop.

Keywords

Modelling techniques, operations research

Learning Outcomes

By the end of the course, the student must be able to:

- Represent some important logistical problems by the use of operations research models.
- Solve such problems with exact methods or heuristics.
- Classify optimization problems

Transversal skills

- Summarize an article or a technical report.
- Access and evaluate appropriate sources of information.

Teaching methods

Lectures, with theoretical parts and various exercises

Expected student activities

Attendance at lectures and completing exercises

Assessment methods

Individual project (100% of the final grade)

Supervision

Office hours	No
Assistants	Yes
Forum	No
Others	Available if firstly contacted by e-mail

Resources

Notes/Handbook

All the documents will be provided in PDF format

Office hours	No
Assistants	Yes
Forum	No
Others	Available if firstly contacted by e-mail