# MATH-265 Introduction to optimization and operations research

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Bierlaire	Michel
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Cursus	Sem.	Туре	Language of	English
Chemistry	BA5	Opt.	teaching	4 Winter Fall Written 120h 14 <b>4 weekly</b> 2 weekly
Civil Engineering	BA3	Obl.	Credits	
Environmental Sciences and Engineering	BA5	Opt.	Session Semester	
HES - GC	Н	Obl.	Exam	
HES - GM	Н	Obl.	Workload Weeks Hours Lecture	
Mechanical engineering	BA5	Obl.		
Systems Engineering minor	Н	Opt.		
			Exercises	2 weekly
			TO 19011101	

# Summary

Introduction to major operations research models and optimization algorithms

## Content

introduction to the course Linear optimization - introduction The simplex algorithm Duality Networks Transhipment Shortest path Integer optimization - Branch and bound. Unconstrained non linear optimization.

# **Learning Prerequisites**

Required courses Linear algebra Analysis

#### **Teaching methods**

The course is a combination of ex-cathedra lectures, interactive sessions and exercices. Interactive sessions allow the student to verify if the main concepts have been well understood.

#### **Assessment methods**

Written exam

Resources Virtual desktop infrastructure (VDI) No

**Bibliography** Bierlaire (2015) Optimization: principles and algorithms, EPFL Press

# http://optimizationprinciplesalgorithms.com

# Ressources en bibliothèque

Optimization / Bierlaire

# **Moodle Link**

• https://go.epfl.ch/MATH-265

**Prerequisite for**