

MATH-801

**Winter School on Optimization and Operations Research (2019)**

Bierlaire Michel, Various lecturers

Cursus	Sem.	Type
Civil & Environmental Engineering		Obl.

Language of teaching	English
Credits	2
Session	
Exam	Multiple
Workload	60h
<b>Hours</b>	<b>58</b>
Courses	15
Exercises	8
TP	35
<b>Number of positions</b>	

**Frequency**

Every year

**Remark**

From 14 to 19 January 2018 - Zinal (Switzerland)

**Summary**

The objective of the Winter School is to expose the audience to modern topics on Optimization and Operations Research. Every year, two prominent researchers are invited to provide tutorials on selected topics, and to discuss some of their recent research with the students.

**Content**

The objective of the Winter School is to expose the audience to modern topics on Optimization and Operations Research. Every year, two prominent researchers are invited to provide tutorials on selected topics, and to discuss some of their recent research with the students. Designed for doctoral education, the course is open to academic researchers (professors, researchers, PhD students) and professionals (from industry and public authorities), interested in optimization and operations research.

The course is organized by Prof. Michel Bierlaire, Transport and Mobility Laboratory (TRANSP-OR), School of Architecture, Civil and Environmental Engineering (ENAC), Ecole Polytechnique de Lausanne (EPFL). It takes place in Zinal, a ski resort in the Swiss Alps. The special environment triggers a specific atmosphere that encourages scientific and personal exchanges among the participants.

In addition to the lectures, workshops will be organized every day where the students will have the opportunity to work on recent papers of the invited lecturers, under their guidance.

The course is worth 2 ECTS credits. The students who need to be evaluated to obtain the credit must inform the organizer during registration. In order to obtain the credit, the students must

1. participate to the lectures,
2. participate to the workshops,
3. provide an oral presentation,
4. submit a report.

The students will be organized by groups. A scientific paper authored by one of the lecturers will be assigned to each group. During the workshops, the students will have the opportunity to interact with the author of the paper. An oral presentation of the paper by the group will be organized.

After the course, each student will prepare a technical report on a topic related to the course. The topic cannot be associated with the same lecturer as the paper presented during the workshop. This is personal work, and the topic should be approved by the lecturer during the workshop. The report should summarize the topic, provide a literature review, and a personal discussion about the topic (strengths and weaknesses, potential applications, possible extensions, etc.) The objective is to show that the students have understood the concepts, and are able to be critical about it. The report does not need to be long (about 10-15 pages).

The workload for the course is

- o 15 hours of lectures,

- o 8 hours of workshop,
- o preparation of the presentations,
- o report writing.

## Resources

### Websites

- <http://transp-or.epfl.ch/zinal/>